



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: August 7, 2009

RE: Wabash Valley Asphalt Co: LLC / 167-27351-00114

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

**Wabash Valley Asphalt, LLC
5600 East Margaret Avenue
Terre Haute, Indiana 47808**

(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.

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.: F167-27351-00114	
Issued by:  Iryn Calilung, Section Chief Permits Branch Office of Air Quality	Issuance Date: August 7, 2009 Expiration Date: August 7, 2019

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SECTION A SOURCE SUMMARY

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

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

The Permittee owns and operates a stationary Drum Mix Asphalt Plant, which does not use slag in its aggregate mix, and does not produce void mix.

Source Address:	5600 East Margaret Avenue, Terre Haute, Indiana 47808
Mailing Address:	5600 East Margaret Avenue, Terre Haute, IN 47808
General Source Phone Number:	812-232-6094
SIC Code:	2951
County Location:	Vigo
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Federally Enforceable State Operating Permit Program Minor Source, under PSD and Emission Offset Rules Minor Source, Section 112 of the Clean Air Act Not 1 of 28 Source Categories

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

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

- (a) One (1) natural gas fired aggregate dryer, with a maximum heat input capacity of 120 million Btu per hour (MMBtu/hr), using #2 and #4 fuel oil as backup fuel, with a throughput capacity of 400 tons of aggregate per hour, exhausting through a cyclone and a baghouse to stack SV1. Under NSPS 40 CFR Part 60, Subpart I, this source is considered an effected facility.
- (b) One (1) natural gas fired heater, with a maximum heat input capacity of 2.115 million Btu per hour (MMBtu/hr), using #2 and #4 fuel oil as a backup fuel, exhausting to stack SV6, and using no control. Under NSPS 40 CFR Part 60, Subpart I, this source is considered an effected facility.
- (c) One (1) natural gas fired heater, with a maximum heat input capacity of 1.5 million Btu per hour (MMBtu/hr), using #2 and #4 fuel oil as a backup fuel, exhausting to stack SV2, and using no control. Under NSPS 40 CFR Part 60, Subpart I, this source is considered an effected facility.
- (d) Two (2) above ground horizontal storage tanks used for storing AC 20, identified as tanks 9 and 9B, each with a maximum capacity of 20,000 gallons, exhausting to stack SV3 and SV5, respectively.
- (e) One (1) above ground vertical storage tank used for storing AC 20, identified as tank 9A, with a maximum capacity of 20,000 gallons, exhausting to stack SV4.
- (f) One (1) above ground vertical storage tank used for storing fuel oil #4, identified as tank 10, with a maximum capacity of 14,000 gallons, exhausting to a vent.

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

This stationary source also includes the following insignificant activities:

- (a) The following VOC and HAP storage containers:
 - (1) Storage tanks with capacity less than or equal to 1,000 gallons and annual throughput less than 12,000 gallons.
- (b) Application of oils, greases, lubricants, or other nonvolatile material applied as temporary protective coatings.
- (c) A laboratory as defined in 326 IAC 2-7-1(21)(D).

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

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

SECTION B GENERAL CONDITIONS

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

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

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

- (a) This permit, F167-27351-00114, 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. The submittal by the Permittee does require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1). 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) Where specifically designated by this permit or required by an applicable requirement, any application form, report, or compliance certification submitted shall contain certification by an "authorized individual" of truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.
- (b) One (1) certification shall be included, using the attached Certification Form, with each submittal requiring certification. One (1) certification may cover multiple forms in one (1) submittal.
- (c) An "authorized individual" is defined at 326 IAC 2-1.1-1(1).

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

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

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

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

The submittal by the Permittee does require the certification 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)][326 IAC 2-8-5(a)(1)]

- (a) If required by specific condition(s) in Section D of this permit, the Permittee shall maintain and implement Preventive Maintenance Plans (PMPs) 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.
- (b) 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 or potential to emit. The PMPs do not require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (c) 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, 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 Compliance and Enforcement
Branch)
Facsimile Number: 317-233-6865

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 the certification 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.

- (h) The Permittee shall include all emergencies in the Quarterly Deviation and Compliance Monitoring Report.

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

- (a) All terms and conditions of permits established prior to F167-27351-00114 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 Deviations from Permit Requirements and Conditions [326 IAC 2-8-4(3)(C)(ii)]

- (a) Deviations from any permit requirements (for emergencies see Section B - Emergency Provisions), the probable cause of such deviations, and any response steps or preventive measures taken shall be reported 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

using the attached Quarterly Deviation and Compliance Monitoring Report, or its equivalent. 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.

The Quarterly Deviation and Compliance Monitoring Report does require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

- (b) A deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit.

B.16 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 the certification 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.17 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 the certification 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 in writing by IDEM, OAQ any additional information identified as being needed to process the application.

B.18 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 shall be certified 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.19 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) through (d) 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) through (d). 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)(2), (c)(1), and (d).

- (b) Emission Trades [326 IAC 2-8-15(c)]
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(c).
- (c) Alternative Operating Scenarios [326 IAC 2-8-15(d)]
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.20 Source Modification Requirement [326 IAC 2-8-11.1]

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

B.21 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.22 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

The application which shall be submitted by the Permittee does require the certification 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.23 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 within 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.24 Advanced Source Modification Approval [326 IAC 2-8-4(11)] [326 IAC 2-1.1-9]

- (a) The requirements to obtain a permit modification under 326 IAC 2-8-11.1 are satisfied by this permit for the proposed emission units, control equipment or insignificant activities in Sections A.2 and A.3.
- (b) Pursuant to 326 IAC 2-1.1-9 any permit authorizing construction may be revoked if construction of the emission unit has not commenced within eighteen (18) months from the date of issuance of the permit, or if during the construction, work is suspended for a continuous period of one (1) year or more.

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

C.2 Opacity [326 IAC 5-1]

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

- (a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

C.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 or incinerate any waste or refuse except as provided in 326 IAC 4-2 and 326 IAC 9-1-2.

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 Emission Limitations [326 IAC 6-5]

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

C.7 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 demolition 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 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.8 Performance Testing [326 IAC 3-6]

- (a) All testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), except as provided elsewhere in this permit, 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 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 certification 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 certification 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.9 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.10 Compliance Monitoring [326 IAC 2-8-4(3)][326 IAC 2-8-5(a)(1)]

Unless otherwise specified in this permit, all monitoring and record keeping requirements not already legally required shall be implemented within ninety (90) days of permit issuance or ninety (90) days of initial start-up, whichever is later. If required by Section D, the Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment. If due to circumstances beyond its control, that equipment cannot be installed and operated within ninety (90) days, 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 the certification 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.11 Monitoring Methods [326 IAC 3] [40 CFR 60] [40 CFR 63]

Any monitoring or testing required by Section D of this permit shall be performed according to the provisions of 326 IAC 3, 40 CFR 60, Appendix A, 40 CFR 60, Appendix B, 40 CFR 63, or other approved methods as specified in this permit.

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

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

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

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

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

- (a) The Permittee shall maintain the most recently submitted written emergency reduction plans (ERPs) consistent with safe operating procedures.
- (b) Upon direct notification by IDEM, OAQ that a specific air pollution episode level is in effect, the Permittee shall immediately put into effect the actions stipulated in the approved ERP for the appropriate episode level. [326 IAC 1-5-3]

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

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

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

- (a) Upon detecting an excursion or exceedance, the Permittee shall 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 emissions.
- (b) The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions). Corrective actions may include, but are not limited to, the following:
 - (1) initial inspection and evaluation;
 - (2) recording that operations returned 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 within the indicator range, designated condition, or below the applicable emission limitation or standard, as applicable.
- (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 maintain the following records:
 - (1) monitoring data;
 - (2) monitor performance data, if applicable; and
 - (3) corrective actions taken.

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

- (a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall take appropriate response actions. The Permittee shall submit a description of these response actions to IDEM, OAQ, within thirty (30) days of receipt of the test results. The Permittee shall take appropriate action to minimize excess emissions from the affected facility while the response actions are being implemented.

- (b) A retest to demonstrate compliance shall be performed within one hundred twenty (120) days of receipt of the original test results. Should the Permittee demonstrate to IDEM, OAQ that retesting in one hundred twenty (120) 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 the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

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

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

- (a) Records of all required monitoring data, reports and support information required by this permit shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. 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, all record keeping requirements not already legally required shall be implemented within ninety (90) days of permit issuance or ninety (90) days of initial start-up, whichever is later.

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

- (a) The Permittee shall submit the attached Quarterly Deviation and Compliance Monitoring Report or its equivalent. Any deviation from permit requirements, the date(s) of each deviation, the cause of the deviation, and the response steps taken must be reported. This report shall be submitted within thirty (30) days of the end of the reporting period. The Quarterly Deviation and Compliance Monitoring Report shall include the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (b) The report required in (a) of this condition and reports required by conditions in Section D of 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
- (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) Unless otherwise specified in this permit, all reports required in Section D of this permit shall be submitted within thirty (30) days of the end of the reporting period. All reports do require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

- (e) Reporting periods are based on calendar years, unless otherwise specified in this permit. For the purpose of this permit "calendar year" means the twelve (12) month period from January 1 to December 31 inclusive.

Stratospheric Ozone Protection

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

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

- (a) Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to 40 CFR 82.156.
- (b) Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to 40 CFR 82.158.
- (c) Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to 40 CFR 82.161.

SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

- (a) One (1) natural gas fired aggregate dryer, with a maximum heat input capacity of 120 million Btu per hour (MMBtu/hr), using #2 and #4 fuel oil as backup fuel, with a throughput capacity of 400 tons of aggregate per hour, exhausting through a cyclone and a baghouse to stack SV1. Under NSPS 40 CFR Part 60, Subpart I, this source is considered an effected facility.
- (b) One (1) natural gas fired heater, with a maximum heat input capacity of 2.115 million Btu per hour (MMBtu/hr), using #2 and #4 fuel oil as a backup fuel, exhausting to stack SV6, and using no control. Under NSPS 40 CFR Part 60, Subpart I, this source is considered an effected facility.
- (c) One (1) natural gas fired heater, with a maximum heat input capacity of 1.5 million Btu per hour (MMBtu/hr), using #2 and #4 fuel oil as a backup fuel, exhausting to stack SV2, and using no control. Under NSPS 40 CFR Part 60, Subpart I, this source is considered an effected facility.

(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 FESOP and PSD Limits [326 IAC 2-8-4] [326 IAC 2-2]

Pursuant to 326 IAC 2-8-4 (FESOP), and in order to render the requirements of 326 IAC 2-2 (PSD) not applicable, the Permittee shall not use slag as an aggregate additive in its hot mix asphalt operations.

Compliance with this requirement, combined with the SO₂ emissions from other units, limits the SO₂ emissions from the entire source to less than one hundred (100) tons per year. Therefore, the requirements of 326 IAC 2-7 (Part 70 Program) and 326 IAC 2-2 (PSD) are not applicable.

D.1.2 Particulate Matter (PM) [326 IAC 2-2]

In order to render 326 IAC 2-2 not applicable, the Permittee shall comply with the following:

- (a) The amount of asphalt processed shall not exceed 1,400,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
- (b) The PM emissions from the dryer/mixer shall not exceed 0.255 pounds per ton of asphalt processed.

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

D.1.3 Dryer and Mixer FESOP Limits [326 IAC 2-8-4] [326 IAC 2-2] [326 IAC 8-1-6]

Pursuant to 326 IAC 2-8-4, the Permittee shall comply with the following:

- (a) The amount of asphalt processed shall not exceed 1,400,000 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 0.108 pounds per ton of asphalt processed.

- (c) The PM_{2.5} emissions from the dryer/mixer shall not exceed 0.125 pounds of PM_{2.5} per ton of asphalt produced.
- (d) The CO emissions from the dryer/mixer shall not exceed 0.130 pounds per ton of asphalt processed.
- (e) The VOC emissions from the dryer/mixer shall not exceed 0.032 pounds per ton of asphalt processed.

Compliance with these limitations, combined with the limited PTE from other emission units at this source, shall limit the source-wide total potential to emit PM₁₀, PM_{2.5}, CO, VOC, SO₂ and NO_x to less than 100 tons per 12 consecutive month period, and shall render 326 IAC 2-7 (Part 70), 326 IAC 2-2 (PSD), and 326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities) not applicable.

D.1.4 Particulate Matter (PM) [326 IAC 6.5-1-2]

Pursuant to 326 IAC 6.5-1-2 (Particulate Matter Limitations Except Lake County), particulate matter (PM) emissions from the dryer/mixer shall not exceed 0.03 grain per dry standard cubic foot of exhaust air because the source is located in Vigo County.

D.1.5 Fuel Usage and Equivalency Limits [326 IAC 2-8-4] [326 IAC 2-2]

Pursuant to 326 IAC 2-8-4, the Permittee shall comply with the following:

(a) Natural Gas

- (1) The natural gas combusted in the dryer/mixer burner shall not exceed 1,010.39 million standard cubic feet (MMcf) per twelve (12) consecutive month period, with compliance determined at the end of each month.

For purposes of determining compliance, the following shall apply:

- (i) every kilogallon of No. 2 fuel oil burned in the dryer/mixer burner shall be equivalent to 0.1263 MMcf of natural gas, based on NO_x emissions, such that the total MMcf of natural gas and natural gas equivalent input does not exceed the limit specified;
- (ii) every kilogallon of No. 4 fuel oil burned in the dryer/burner shall be equivalent to 0.247 MMcf of natural gas, based on NO_x emissions, such that the total MMcf of natural gas and natural gas equivalent input does not exceed the limit specified.

- (2) The NO_x emissions from the dryer/mixer burner shall not exceed 190 pounds per MMcf of natural gas.

(b) No. 2 Fuel Oil

- (1) The No. 2 fuel oil combusted in the dryer/mixer burner shall not exceed 2,374,036 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month.

For purposes of determining compliance, the following shall apply:

- (i) Every gallon of No. 4 fuel oil burned in the dryer/mixer burner shall be equivalent to 1.07 gallons of No. 2 fuel oil, based on SO₂ emissions, that the total gallons of No.

2 fuel oil and No. 2 fuel oil equivalent input does not exceed the limit specified;

- (2) The sulfur content of the No. 2 fuel oil used in the dryer/mixer burner shall not exceed 0.482% by weight.
- (3) The SO₂ emissions from the dryer/mixer burner shall not exceed 0.076 pounds per gallon (lb/gal) of No. 2 fuel oil.

(c) No. 4 Fuel Oil

- (1) The No. 4 fuel oil combusted in the dryer/mixer burner shall not exceed 2,217,936 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month.

For purposes of determining compliance, the following shall apply:

- (i) every gallon of No. 2 fuel oil burned in the dryer/mixer burner shall be equivalent to 0.93 gallons of No. 4 fuel oil, based on SO₂ emissions, that the total gallons of No. 4 fuel oil and fuel oil equivalent input does not exceed the limit specified;
- (2) The sulfur content of the No. 4 fuel oil used in the dryer/mixer burner shall not exceed 0.540% by weight.
- (3) The SO₂ emissions from the dryer/mixer burner shall not exceed 0.081 pounds per gallon (lb/gal) of No. 4 fuel oil.

Compliance with these limitations, combined with the limited PTE from other emission units at this source, shall limit the source-wide total potential to emit SO₂ and NO_x to less than 100 tons per 12 consecutive month period and shall render 326 IAC 2-7 (Part 70 Permits), 326 IAC 2-2 (PSD), not applicable.

D.1.6 Sulfur Dioxide (SO₂) [326 IAC 7-1.1]

Pursuant to 326 IAC 7-1.1 (Sulfur Dioxide Emission Limitations), the sulfur dioxide emissions from the 120.0 million Btu per hour burner for the aggregate dryer shall be limited to:

- (a) 0.5 pounds per million Btu heat input when using distillate oil.

D.1.7 Volatile Organic Compound Rules for Asphalt Pavers [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.1.8 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for this facility and any control devices.

Compliance Determination Requirements

D.1.9 Testing Requirements [326 IAC 2-8-5(1), (4)] [326 IAC 2-1.1-11]

Pursuant to 326 IAC 2-8-5(1), and in order to demonstrate compliance with Conditions D.1.2 and D.1.3 the Permittee shall perform testing as follows:

- (a) Not later than one hundred and eighty (180) days after issuance of this permit, in order to demonstrate compliance with Condition D.1.2, the Permittee shall perform PM testing of the dryer/mixer utilizing methods approved by the Commissioner. This test shall be repeated at least once every five (5) years from the date of this valid compliance demonstration.
- (b) In order to demonstrate compliance with Conditions D.1.3(b) and D.1.3(c), the Permittee shall perform PM_{2.5} and PM₁₀ testing on the dryer/mixer within 180 days of publication of the new or revised condensible PM test method(s) referenced in the U.S. EPA's Final Rule for Implementation of the New Source Review (NSR) Program for Particulate Matter Less Than 2.5 Micrometers (PM_{2.5}), signed on May 8th, 2008. This testing shall be conducted utilizing methods as 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 Section C- Performance Testing. PM₁₀ and PM_{2.5} includes filterable and condensible PM.

D.1.10 Particulate Control [326 IAC 6.5-2]

- (a) In order to comply with Conditions D.1.2, D.1.3, and D.1.4, the baghouse for the dryer/mixer 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.1.11 Sulfur Dioxide (SO₂) Emissions and Sulfur Content [326 IAC 3-7-4]

Compliance with the sulfur dioxide emissions and sulfur content limitations in Conditions D.1.1, D.1.5, and D.1.6 shall be determined utilizing one of the following options.

- (a) Pursuant to 326 IAC 3-7-4, the Permittee shall demonstrate compliance with sulfur dioxide emissions and sulfur content limitations by:
 - (1) Providing vendor analysis of heat content and sulfur content 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.
 - (i) Oil samples may be collected from the fuel tank immediately after the fuel tank is filled and before any oil is combusted; and
 - (ii) If a partially empty fuel tank is refilled, a new sample and analysis would be required upon filling.

- (b) Compliance may also be determined by conducting a stack test for sulfur dioxide emissions from the dryer/mixer, 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 (a) or (b) 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.1.12 Visible Emissions Notations

- (a) Visible emission notations of the conveyors, screens, material transfer points, and dryer/mixer stack (S-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 in accordance with Section C - Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

D.1.13 Baghouse Parametric Monitoring [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

- (a) 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 the normal range of one (1.0) to eight (8.0) inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C - Response to Excursions or Exceedances. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances, shall be considered a deviation from this permit.
- (b) The instruments used for determining the pressure and temperature shall comply with Section C - Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated at least once every six (6) months.

D.1.14 Broken or Failed Bag Detection

- (a) For a single compartment baghouse 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, or dust traces.

Record Keeping and Reporting Requirement [326 IAC 2-8-4(3)] [326 IAC 2-8-16]

D.1.15 Record Keeping Requirements

- (a) To document compliance with Conditions D.1.2(a) and D.1.3(a), the Permittee shall keep records of the amount of asphalt processed through the dryer/mixer. Records necessary to demonstrate compliance shall be available within thirty (30) days of the end of each compliance period.

- (b) To document compliance with Conditions D.1.5 and D.1.6, the Permittee shall maintain records in accordance with (1) through (6) below.
 - (1) Calendar dates covered in the compliance determination period;
 - (2) Actual fuel usage, sulfur content, heat content and equivalent sulfur dioxide and NOx emission rates for each fuel used at the source per month;
 - (3) 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

If the fuel supplier certification is used to demonstrate compliance, the following, as a minimum, shall be maintained:

- (4) Fuel supplier certifications;
- (5) The name of the fuel supplier; and
- (6) A statement from the fuel supplier that certifies the sulfur content of the No. 2 and No. 4 fuel oil.

The Permittee shall maintain records of all recording/monitoring data and support information in accordance with Section C - General Record Keeping Requirements, of this permit. Support information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit.

- (d) To document compliance with Condition D.1.12, the Permittee shall maintain daily records of the visible emission notations from each of the conveyors, screens, material transfer points, and dryer/mixer stack (S-1) exhaust. 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 plant did not operate that day).

- (e) To document compliance with Condition D.1.13, the Permittee shall maintain the daily records of the pressure drop across the baghouse controlling the dryer/mixer. The Permittee shall include in its daily record when a pressure drop reading is not taken and the reason for the lack of a pressure drop reading, (e.g., the dryer/mixer did not operate that day).

- (f) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.1.16 Reporting Requirements

A quarterly summary of the information to document compliance with Conditions D.1.2, D.1.3, and D.1.5 shall be submitted to the addresses listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported.

The report submitted by the Permittee does require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

SECTION E.1 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

- (a) One (1) natural gas fired aggregate dryer, with a maximum heat input capacity of 120 million Btu per hour (MMBtu/hr), using #2 and #4 fuel oil as backup fuel, with a throughput capacity of 400 tons of aggregate per hour, exhausting through a cyclone and a baghouse to stack SV1. Under NSPS 40 CFR Part 60 Subpart I, this source is considered an effected facility.
- (b) One (1) natural gas fired heater, with a maximum heat input capacity of 2.115 million Btu per hour (MMBtu/hr), using #2 and #4 fuel oil as a backup fuel, exhausting to stack SV6, and using no control. Under NSPS 40 CFR Part 60 Subpart I, this source is considered an effected facility.
- (c) One (1) natural gas fired heater, with a maximum heat input capacity of 1.5 million Btu per hour (MMBtu/hr), using #2 and #4 fuel oil as a backup fuel, exhausting to stack SV2, and using no control. Under NSPS 40 CFR Part 60 Subpart I, this source is considered an effected 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]

The provisions of 40 CFR 60 Subpart A - General Provisions, which are incorporated as 326 IAC 12-1, apply to the asphalt plant described in this section except when otherwise specified in 40 CFR 60 Subpart I.

E.1.2 NSPS Subpart I Requirements [40 CFR Part 60, Subpart I] [326 IAC 12-1]

Pursuant to CFR Part 60, Subpart I, the Permittee shall comply with the provisions of 40 CFR Part 60, Subpart I, which are incorporated by reference as 326 IAC 12-1 for the asphalt plant as specified in Attachment B of this permit. Pursuant to 40 CFR 60.90(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.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY**

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

Source Name: Wabash Valley Asphalt, LLC
Source Address: 5600 East Margaret Avenue, Terre Haute, Indiana 47808
Mailing Address: 5600 East Margaret Avenue, Terre Haute, IN 47808
FESOP Permit No.: F167-27351-00114

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: Wabash Valley Asphalt, LLC
Source Address: 5600 East Margaret Avenue, Terre Haute, Indiana 47808
Mailing Address: 5600 East Margaret Avenue, Terre Haute, IN 47808
FESOP Permit No.: F167-27351-00114

This form consists of 2 pages

Page 1 of 2

- | |
|---|
| <input type="checkbox"/> This is an emergency as defined in 326 IAC 2-7-1(12) <ul style="list-style-type: none">• The Permittee must notify the Office of Air Quality (OAQ), within four (4) daytime 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: _____

A certification is not required for this report.

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

FESOP Quarterly Report

Source Name: Wabash Valley Asphalt, LLC
 Source Address: 5600 East Margaret Avenue, Terre Haute, Indiana 47808
 Mailing Address: 5600 East Margaret Avenue, Terre Haute, IN 47808
 FESOP Permit No.: F167-27351-00114
 Facility: Aggregate Dryer
 Parameter: No. 2 fuel oil and equivalent usage limit to limit SO₂ emissions
 Limit: The usage of No. 2 fuel oil and No. 2 fuel oil equivalents in the dryer/mixer burner shall not exceed 2,374,036 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month. For purposes of determining compliance with this limit, the fuel equivalency ratios in Condition D.1.5 shall be used such that the total gallons of No. 2 fuel oil and No. 2 fuel oil equivalents input does not exceed the limit specified.

YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	No. 2 Fuel Oil and Equivalent Usage This Month	No. 2 Fuel Oil and Equivalent Usage Previous 11 Months	No. 2 Fuel Oil and Equivalent Usage 12 Month Total
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: _____

Attach a signed certification to complete this report.

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

FESOP Quarterly Report

Source Name: Wabash Valley Asphalt, LLC
 Source Address: 5600 East Margaret Avenue, Terre Haute, Indiana 47808
 Mailing Address: 5600 East Margaret Avenue, Terre Haute, IN 47808
 FESOP Permit No.: F167-27351-00114
 Facility: Aggregate Dryer
 Parameter: No. 4 fuel oil and equivalent usage limit to limit SO₂ emissions
 Limit: The usage of No. 4 fuel oil and No. 2 fuel oil equivalents in the dryer/mixer burner shall not exceed 2,217,936 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month. For purposes of determining compliance with this limit, the fuel equivalency ratios in Condition D.1.5 shall be used such that the total gallons of No. 4 fuel oil and No. 4 fuel oil equivalents input does not exceed the limit specified.

YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	No. 4 Fuel Oil and Equivalent Usage This Month	No. 4 Fuel Oil and Equivalent Usage Previous 11 Months	No. 4 Fuel Oil and Equivalent Usage 12 Month Total
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: _____

Attach a signed certification to complete this report.

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

FESOP Quarterly Report

Source Name: Wabash Valley Asphalt, LLC
 Source Address: 5600 East Margaret Avenue, Terre Haute, Indiana 47808
 Mailing Address: 5600 East Margaret Avenue, Terre Haute, IN 47808
 FESOP Permit No.: F167-27351-00114
 Facility: Aggregate Dryer
 Parameter: Natural Gas and equivalent usage limit to limit NOx emissions
 Limit: The usage of natural gas and equivalents in the dryer/mixer burner shall not exceed 1010.39 million cubic feet (MMcf) per twelve (12) consecutive month period, with compliance determined at the end of each month. For purposes of determining compliance with this limit, the fuel equivalency ratios in Condition D.1.5 shall be used such that the total Million cubic feet (MMcf) does not exceed the limit specified.

YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	Natural Gas and Equivalent Usage This Month	Natural Gas and Equivalent Usage Previous 11 Months	Natural Gas and Equivalent Usage 12 Month Total
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: _____

Attach a signed certification to complete this report.

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

FESOP Quarterly Report

Source Name: Wabash Valley Asphalt, LLC
Source Address: 5600 East Margaret Avenue, Terre Haute, Indiana 47808
Mailing Address: 5600 East Margaret Avenue, Terre Haute, IN 47808
FESOP Permit No.: F167-27351-00114
Facility: Aggregate Dryer
Parameter: Hot Asphalt Production Limit
Limit: The throughput of aggregate in the aggregate dryer shall not exceed 1,400,000 tons per twelve (12) consecutive month periods.

YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	12 Month Total
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: _____

Attach a signed certification to complete this report.

**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: Wabash Valley Asphalt, LLC
 Source Address: 5600 East Margaret Avenue, Terre Haute, Indiana 47808
 Mailing Address: 5600 East Margaret Avenue, Terre Haute, IN 47808
 FESOP Permit No.: F167-27351-00114

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

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

Permit Requirement (specify permit condition #)	
Date of Deviation:	Duration of Deviation:
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: _____

Attach a signed certification to complete this report.

**Attachment A
Fugitive Dust Control Plan**

For

**Wabash Valley Asphalt, LLC
5600 East Margaret Avenue
Terre Haute, Indiana 47808**

- (a) Fugitive particulate matter emissions from paved roads, unpaved roads, and parking lots shall be controlled by one or more of the following methods:
- Paved roads and parking lots:
- (1) power brooming while wet either from rain or application of water on an as needed basis.
- Unpaved roads and parking lots:
- (1) paving with asphalt;
 - (2) treating with emulsified asphalt on an as needed basis;
 - (3) treating with water on an as needed basis; or
 - (4) double chip and seal the road surface and maintained on an as needed basis.
- (b) Fugitive particulate matter emissions from aggregate stockpiles shall be controlled by one or more of the following methods on an as needed basis:
- (1) maintaining minimum size and number of stockpiles of aggregate;
 - (2) treating around the stockpile area with emulsified asphalt;
 - (3) treating around the stockpile area with water; or
 - (4) treating the stockpiles with water.
- (c) Fugitive particulate matter emissions from outdoor conveying of aggregates shall be controlled by the following methods:
- (1) applying water at the feed and the intermediate points.
- (d) Fugitive particulate matter emissions from the transfer of aggregates shall be controlled by one of the following methods:
- (1) minimize the vehicular distance between transfer points;
 - (2) enclose the transfer points; or
 - (3) apply water on transfer points on an as needed basis.
- (e) Fugitive particulate matter emissions from transportation of aggregate by truck, front end loader, etc. shall be controlled by one of the following methods:
- (1) maintain vehicle bodies in condition to prevent leakage;
 - (2) spray the aggregates with water; or
 - (3) maintain a 10 mph speed limit in the yard.
- (f) Fugitive particulate matter emissions from the loading and unloading of aggregate shall be controlled by one of the following methods:
- (1) reduce free fall distance to a minimum;
 - (2) reduce the rate of discharge of the aggregate; or
 - (3) spray the aggregate with water on an as needed basis.

Attachment B
New Source Performance Standards (NSPS) [326 IAC 12-1] [40 CFR 60, Subpart I]

For

Wabash Valley Asphalt, LLC
5600 East Margaret Avenue
Terre Haute, Indiana 47808

Pursuant to CFR Part 60, Subpart I, the Permittee shall comply with the provisions of 40 CFR Part 60, Subpart I, which are incorporated by reference as 326 IAC 12-1 for the asphalt plant as specified as follows. Pursuant to 40 CFR 60.90(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.

§ 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 aggregate and mixing with asphalt cements.

§ 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 (0.04 gr/dscf).
- (2) Exhibit 20 percent opacity, or greater.

§ 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.

**Indiana Department of Environmental Management
Office of Air Quality**

**Technical Support Document (TSD) for a
Federally Enforceable State Operating Permit Renewal**

Source Background and Description

Source Name:	Wabash Valley Asphalt, LLC
Source Location:	5600 East Margaret Avenue, Terre Haute, Indiana 47808
County:	Vigo
SIC Code:	2951
Permit Renewal No.:	167-27351-00114
Permit Reviewer:	Jack Harmon

The Office of Air Quality (OAQ) has reviewed the operating permit renewal application from Wabash Valley Asphalt, LLC, relating to the operation of a stationary drum mix asphalt plant. This source does not use slag in its aggregate mix and does not produce cold mix.

History

On January 9, 2009, Wabash Valley Asphalt, LLC submitted an application to the OAQ requesting to renew its operating permit. Wabash Valley Asphalt, LLC was issued a FESOP Renewal No. 167-17605-00114 on March 25, 2005.

Permitted Emission Units and Pollution Control Equipment

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

- (a) One (1) natural gas fired aggregate dryer, with a maximum heat input capacity of 120 million Btu per hour (MMBtu/hr), using #2 and #4 fuel oil as backup fuel, with a throughput capacity of 400 tons of aggregate per hour, exhausting through a cyclone and a baghouse to stack SV1. Under NSPS 40 CRF Part 60 Subpart I, this source is considered an effected facility.
- (b) One (1) natural gas fired heater, with a maximum heat input capacity of 2.115 million Btu per hour (MMBtu/hr), using #2 and #4 fuel oil as a backup fuel, exhausting to stack SV6, and using no control. Under NSPS 40 CRF Part 60 Subpart I, this source is considered an effected facility.
- (c) One (1) natural gas fired heater, with a maximum heat input capacity of 1.5 million Btu per hour (MMBtu/hr), using #2 and #4 fuel oil as a backup fuel, exhausting to stack SV2, and using no control. Under NSPS 40 CRF Part 60 Subpart I, this source is considered an effected facility.
- (d) Two (2) above ground horizontal storage tanks used for storing AC 20, identified as tanks 9 and 9B, each with a maximum capacity of 20,000 gallons, exhausting to stack SV3 and SV5, respectively.
- (e) One (1) above ground vertical storage tank used for storing AC 20, identified as tank 9A, with a maximum capacity of 20,000 gallons, exhausting to stack SV4.
- (f) One (1) above ground vertical storage tank used for storing fuel oil #4, identified as tank 10, with a maximum capacity of 14,000 gallons, exhausting to a vent.

Insignificant Activities

This stationary source also includes the following insignificant activities:

- (a) The following VOC and HAP storage containers:
 - (1) Storage tanks with capacity less than or equal to 1,000 gallons and annual throughput less than 12,000 gallons.
- (b) Application of oils, greases, lubricants, or other nonvolatile material applied as temporary protective coatings.
- (c) A laboratory as defined in 326 IAC 2-7-1(21)(D).

Existing Approvals

Since the issuance of the FESOP Renewal No.167-17605-00114 on March 29, 2005, the source has constructed or has been operating under the following approvals as well:

- (a) Significant Permit Revision No.167-26223-00114 issued on July 14, 2008; and
- (b) There have been no other approvals.

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.

The following terms and conditions from previous approvals have been determined to be no longer applicable; therefore, they were not incorporated into this FESOP Renewal:

- (a) All references to Local Agencies.

Reason not incorporated: Local agencies no longer have effective authority to implement state and federal requirements for IDEM. Therefore, IDEM has removed all references to local agencies from the permit.

The revised permit specifies that all reports, notices, applications, and any other required submittals shall be submitted to IDEM. The Permittee should note that the local agency could have its own requirements beyond the state and federal requirements contained in the permit. Please contact the local agency for further information.

Enforcement Issue

There are no enforcement actions pending.

Emission Calculations

See Appendix A of this document for detailed emission calculations.

County Attainment Status

The source is located in Vigo County

Pollutant	Designation
SO ₂	Better than national standards.
CO	Unclassifiable or attainment effective November 15, 1990.
O ₃	Attainment effective February 6, 2006, for the Terre Haute area, including Vigo County, for the 8-hour ozone standard. ¹
PM ₁₀	Unclassifiable effective November 15, 1990.
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. Unclassifiable or attainment effective April 5, 2005, for PM2.5.	

(a) Ozone Standards

- (1) On October 25, 2006, the Indiana Air Pollution Control Board finalized a rule revision to 326 IAC 1-4-1 revoking the one-hour ozone standard in Indiana.
- (2) On September 6, 2007, the Indiana Air Pollution Control Board finalized a temporary emergency rule to re-designate Allen, Clark, Elkhart, Floyd, LaPorte, and St. Joseph as attainment for the 8-hour ozone standard.
- (3) On November 9, 2007, the Indiana Air Pollution Control Board finalized a temporary emergency rule to re-designate Boone, Clark, Elkhart, Floyd, LaPorte, Hamilton, Hancock, Hendricks, Johnson, Madison, Marion, Morgan, Shelby, and St. Joseph as attainment for the 8-hour ozone standard.
- (4) Volatile organic compounds (VOC) and Nitrogen Oxides (NOx) 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 NOx emissions are considered when evaluating the rule applicability relating to ozone. Vigo County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

(b) PM2.5

Vigo County has been classified as attainment for PM2.5. On May 8, 2008 U.S. EPA promulgated the requirements for Prevention of Significant Deterioration (PSD) for PM2.5 emissions, and the effective date of these rules was July 15th, 2008. Indiana has three years from the publication of these rules to revise its PSD rules, 326 IAC 2-2, to include those requirements. The May 8, 2008 rule revisions require IDEM to regulate PM10 emissions as a surrogate for PM2.5 emissions until 326 IAC 2-2 is revised.

(c) Other Criteria Pollutants

Vigo 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.

(d) Fugitive Emissions

This type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2 or 326 IAC 2-3, however, there is an applicable New Source Performance Standard that was in effect on August 7, 1980, therefore fugitive emissions are counted toward the determination of PSD and Emission Offset applicability.

Unrestricted Potential Emissions

Appendix A.1 of this TSD reflects the unrestricted potential emissions of the source.

- (a) The potential to emit (as defined in 326 IAC 2-7-1(29)) of PM10, PM2.5, SO2, NOx and CO is equal to or greater than 100 tons per year. The source is subject to the provisions of 326 IAC 2-7. However, the source has agreed to limit their PM10, PM2.5, SO2, NOx and CO emissions to less than Title V levels, therefore the source will be issued a FESOP.
- (b) The potential to emit (as defined in 326 IAC 2-7-1(29)) of all other criteria pollutants are less than 100 tons per year.
- (c) The potential to emit (as defined in 326 IAC 2-7-1(29)) of any single HAP is less than ten (10) tons per year and the potential to emit (as defined in 326 IAC 2-7-1(29)) of a combination of HAPs is less than twenty-five (25) tons per year.

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.

Process/Emission Unit	Potential To Emit of the Entire Source (tons/year)								
	PM	PM10*	PM2.5	SO ₂	NO _x	VOC	CO	Total HAPs	Worst Single HAP
Dryer/Mixer Combustion	7.76	9.20	9.20	89.83	95.99	2.78	42.44	1.11	0.91 (HCl)
Dryer/Mixer Process	178.31	75.43	87.42	7.70	38.50	22.40	91.00	7.46	2.17 (Formaldehyde)
Heater Combustion	0.79	0.94	0.94	9.17	3.01	0.09	1.33	0.00	0.029 (H Hexane)
Worst Case Emissions	179.10	76.37	88.36	99.00	99.00	22.49	92.33	7.46	2.17 (Formaldehyde)
Fugitive Emissions									
Loadout	0.78	0.78	0.78	0	0	11.99	2.02	0.20	0.06 (Formaldehyde)
Storage	0.13	0.05	0.05	0	0	0	0	0	0
Process Handling	18.61	6.51	0.99	0	0	0	0	0	0
Screening/Conveying	22.21	8.11	8.11	0	0	0	0	0	0
Unpaved and paved Roads	28.17	7.18	0.72	0	0	0	0	0	0
VOC Liquid Storage Vessels	0	0	0	0	0	negl.	0	negl.	negl.
Total PTE of Entire Source	249.00	99.00	99.00	99.0	99.0	34.48	94.35	7.75	2.17 (Formaldehyde)
Title V Major Source Thresholds	NA	100	100	100	100	100	100	25	10
PSD Major Source Thresholds	250	250	250	250	250	250	250	NA	NA
Emission Offset Major Source Thresholds	NA	NA	NA	NA	NA	NA	NA	NA	NA
negl. = negligible									
* Under the Part 70 Permit program (40 CFR 70), particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM10), not particulate matter (PM), is considered as a "regulated air pollutant". US EPA has directed states to regulate PM10 emissions as surrogate for PM2.5 emissions.									

1. Source has agreed to limited asphalt production levels to keep CO levels to less than 100 tons/year.
2. Source has agreed to limit lb/ton emissions of asphalt production to keep PM10, PM2.5, SO₂, and NO_x levels to less than 100 tons/year.

(a) This existing stationary source is not major for PSD because the emissions of each criteria pollutant are less than two hundred fifty (<250) tons per year, and it is not one of the twenty-eight (28) listed source categories.

- (b) Fugitive Emissions
This type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2 or 326 IAC 2-3, however, there is an applicable New Source Performance Standard that was in effect on August 7, 1980, therefore fugitive emissions are counted toward the determination of PSD and Emission Offset applicability.

Federal Rule Applicability

The following federal rules are applicable to the source:

New Source Performance Standards (NSPS)

- (a) This source is subject to the New Source Performance Standards (40 CFR 60.90, Subpart I), which is incorporated by reference as 326 IAC 12 because it meets the definition of a hot mix asphalt facility pursuant to the rule and it was constructed after June 11, 1973. This rule limits particulate matter emissions to 0.04 grain per dry standard cubic foot (gr/dscf) and also limits visible emissions to 20% opacity.

The aggregate dryer and burner are subject to the following portions of Subpart I:

- (1) 40 CFR 60.90.
- (2) 40 CFR 60.91.
- (3) 40 CFR 60.92.
- (4) 40 CFR 60.93.

- (b) There are no other New Source Performance Standards (NSPS))326 IAC 12 and 40 CFR Part 60) included in this permit renewal.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

- (a) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Asphalt Processing and Asphalt Roofing Manufacturing, 40 CFR 63, Subpart LLLLL (326 IAC 20-71-1(b)), are not included in the permit renewal, since the hot mix asphalt plant is not a major source of HAPs, is not located at and is not part of a major source of HAP emissions, and does not engage in the preparation of asphalt flux or asphalt roofing materials.
- (b) 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 renewal.

Compliance Assurance Monitoring (CAM)

- (a) 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 2-2 (Prevention of Significant Deterioration(PSD))
This source is not subject to the requirements of this rule. The source is not one of the twenty-eight (28) listed source categories, but it does have an unlimited potential to emit greater than two hundred fifty (250) tons per year of PM, PM₁₀, PM_{2.5}, and SO₂. However, this source will remain a minor source pursuant to 326 IAC 2-2 (PSD) because, as shown in the "Potential to Emit After Issuance" table above, the allowable emissions of PM will remain less than 250 tons per year, and the allowable emissions of PM₁₀,

PM2.5, and SO2 will each remain less than 100 tons per year after application of all federally enforceable emission limits.

The source shall limit PM emissions from the aggregate dryer/burner to 0.255 pound per ton of hot mix asphalt produced based on a maximum throughput of 1,400,000 tons of asphalt mix per consecutive twelve (12) month period. This maximum throughput was changed from 3,504,000 tons per consecutive twelve (12) month period in the existing permit due to updated emission factors.

- (b) 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))
The unlimited potential to emit of HAPs from the existing units is 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 source is not subject to the requirements of 326 IAC 2-4.1.
- (c) 326 IAC 2-6 (Emission Reporting)
Pursuant to 326 IAC 2-6-1, this source is not subject to this rule, because it is not required to have an operating permit under 326 IAC 2-7 (Part 70), it is not located in Lake, Porter, or LaPorte County, and it does not emit lead into the ambient air at levels equal to or greater than 5 tons per year. Therefore, 326 IAC 2-6 does not apply.
- (d) 326 IAC 2-8-1 (FESOP Applicability)
This source, otherwise required to have a Part 70 permit as described in 326 IAC 2-7-2(a), has applied to the Office of Air Quality (OAQ) for a Federally Enforceable State Operating Permit (FESOP), and has accepted limits, with which the source can comply. Therefore, pursuant to 326 IAC 2-8-1, the source can operate under a FESOP Renewal Permit.
- (e) 326 IAC 2-8-4 (FESOP)
This source is subject to 326 IAC 2-8-4 (FESOP). Pursuant to this rule, the following limits shall apply:
 - (1) The usage of natural gas and equivalents in the dryer/burner shall be limited to 1,010.39 million cubic feet (MMcf) per twelve (12) consecutive month period, with compliance determined at the end of each month. This usage limit was changed from 1,057 million cubic feet (MMcf) in the existing permit due to updated emission factors.

For purposes of determining compliance, the following shall apply:

- (i) every kilogallon of No. 2 fuel oil burned in the dryer/mixer burner shall be equivalent to 0.1263 MMcf of natural gas, based on NOx emissions, such that the total MMcf of natural gas and natural gas equivalent input does not exceed the limit specified;
 - (ii) every kilogallon of No. 4 fuel oil burned in the dryer/burner shall be equivalent to 0.247 MMcf of natural gas, based on NOx emissions, such that the total MMcf of natural gas and natural gas equivalent input does not exceed the limit specified.
- (2) The usage of No. 2 fuel oil, with content limits of 0.482% sulfur, and equivalents in the dryer/burner shall be limited to 2,374,036 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month.

For purposes of determining compliance, the following shall apply:

- (i) Every gallon of No. 4 fuel oil burned in the dryer/mixer burner shall be equivalent to 1.07 gallons of No. 2 fuel oil, based on SO₂ emissions, that the total gallons of No. 2 fuel oil and No. 2 fuel oil equivalent input does not exceed 2,374,036 gallons per twelve (12) consecutive month period.
- (3) The usage of No. 4 fuel oil, with a maximum sulfur content of 0.540%, and equivalents in the dryer/burner shall be limited to 2,217,936 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month.

For purposes of determining compliance, the following shall apply:

- (i) every gallon of No. 2 fuel oil burned in the dryer/mixer burner shall be equivalent to 0.93 gallons of No. 4 fuel oil, based on SO₂ emissions, that the total gallons of No. 4 fuel oil and fuel oil equivalent input does not exceed 2,217,936 gallons per twelve (12) consecutive month period.

Fuel Equivalency calculations are shown in Appendix 3 of this document.

- (4) The asphalt production rate shall not exceed 1,400,000 tons per twelve (12) consecutive month period with compliance determined at the end of each month.
- (5) PM₁₀ emissions from the dryer/mixer shall be limited to 0.108 pound PM₁₀ per ton of asphalt produced.
- (6) PM_{2.5} emissions from the dryer/mixer shall not exceed 0.125 pound per ton of asphalt produced.
- (7) CO emissions from the dryer/mixer shall not exceed 0.130 pound per ton of asphalt produced.
- (8) VOC emissions from the dryer/mixer shall not exceed 0.032 pound per ton of asphalt produced.
- (9) NO_x emissions from the natural gas combustion shall not exceed 190 pounds per million cubic feet of natural gas used.
- (10) SO₂ emissions from the fuel oil combustion shall not exceed 0.076 pound per gallon when combusting No. 2 fuel oil and shall not exceed 0.081 pound per gallon when combusting No. 4 fuel oil.
- (11) The source shall not use slag in its aggregate mix.

Compliance with these limits will render the requirements of 326 IAC 2-7 (Part 70) and 326 IAC 2-2 (PSD) not applicable.

- (f) 326 IAC 5-1 (Opacity Limitations)
Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:
 - (1) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

- (2) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.
- (g) 326 IAC 6-4 (Fugitive Dust Emissions Limitations)
The source is subject to the requirements of 326 IAC 6-4, because the Asphalt Load-Out and On-Site Yard, Hot Oil and Asphalt Heaters, Material Screening, and Conveying, Material Processing and Handling, Material Storage Piles, and Paved Roads each have the potential to emit fugitive particulate emissions. Pursuant to 326 IAC 6-4 (Fugitive Dust Emissions Limitations), the 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.
- (h) 326 IAC 6-5 (Fugitive Particulate Matter Emissions Limitations)
The source is subject to the requirements of 326 IAC 6-5, because the Asphalt Load-Out and On-Site Yard, Hot Oil and Asphalt Heaters, Material Screening, and Conveying, Material Processing and Handling, Material Storage Piles, and Paved Roads have combined potential fugitive particulate emissions greater than 25 tons per year. Pursuant to 326 IAC 6-5, fugitive particulate matter emissions shall be controlled according to the Fugitive Dust Control Plan, which has been submitted to the OAQ.

State Rule Applicability – Individual Facilities

- (a) 326 IAC 6.5-1-2 (Particulate Emissions Limitations)

This source has the potential to emit PM before controls greater than 100 tons per year and is located in Vigo County. Pursuant to 6.5-1-2(a), PM emissions from the dryer/mixer 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)). This rule replaced rule 326 IAC 6-1-2 which was repealed in August, 2005 and was referenced in the previous permit.

In order to comply with the requirements of 326 IAC 6.5-1-2, particulate from the dryer/mixer shall be controlled by the baghouse at all times that the dryer/mixer is in operation.
- (b) 326 IAC 7-1.1-2 (Sulfur Dioxide (SO₂) Emission Limitations)
Pursuant to 7-1.1-2, sulfur dioxide emissions from the dryer/mixer shall not exceed five-tenths (0.5) pound per MMBtu when using No. 2 fuel oil and No. 4 fuel oil for combustion.
- (c) 326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities)
The unlimited VOC potential emissions from the dryer/mixer are greater than twenty-five (25) tons per year. However, the source shall limit the VOC potential emissions from the dryer/mixer to less than twenty-five (25) tons per year. Therefore, the requirements of 326 IAC 8-1-6 do not apply.

In order to render the requirements of 326 IAC 8-1-6 not applicable, the dryer/mixer shall be limited as follows:
- (1) The hot-mix asphalt production rate shall not exceed 1,400,000 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

- (2) VOC emissions from the dryer/mixer shall not exceed 0.032 pounds of VOC per ton of asphalt produced.

Compliance with these limits shall limit the potential to emit VOC from the dryer/mixer to less than twenty-five (25) tons per 12 consecutive month period and shall render 326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities) not applicable.

- (d) 326 IAC 8-4-3 (Petroleum Liquid Storage Facilities)
Pursuant to 326 IAC 8-4-1 (Applicability) and 326 IAC 8-4-3 (Petroleum Liquid Storage Facilities), all petroleum liquid storage vessels with capacities greater than 39,000 gallons containing VOC whose true vapor pressure is greater than 10.5 kPa (1.52 psi) shall comply with the requirements for external fixed and floating roof tanks and the specified record keeping and reporting requirements. The four (4) above-ground storage tanks each have capacities of less than 39,000 gallons, and do not contain VOC with a true vapor pressure greater than 10.5 kPa. Therefore, the requirements of this rule are not applicable to this facility and are not included in this permit.
- (e) 326 IAC 8-5-2 (Miscellaneous operations: asphalt paving)
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:
- (1) penetrating prime coating
 - (2) stockpile storage
 - (3) application during the months of November, December, January, February and March.
- The owner or operator will not process emulsified or cutback asphalt at this source unless proper approval has been obtained from IDEM, OAQ. Therefore, this source can comply with this rule.
- (f) 326 IAC 8-9 (Volatile Organic Liquid Storage Vessels)
The VOC liquid storage tanks and the HAP storage containers are each not subject to the requirements of this rule because the source is not located in Clark, Floyd, Lake, or Porter Counties.
- (g) 326 IAC 10-3 (Nitrogen Oxide Reduction Program for Specific Source Category)
This source does not operate a Portland cement kiln or a blast furnace gas boiler with a heat input greater than two hundred fifty million (250,000,000) British thermal units per hour. The one (1) 120 million Btu dryer/mixer burner is not subject to this rule, therefore the requirements of 326 IAC 10-3 are not included in the permit for this source.
- (h) 326 IAC 12-1 (New Source Performance Standards)
The hot-mix asphalt plant is required to comply with the requirements of 40 CFR 60.90, Subpart I, Standards of Performance for Hot-mix Asphalt Facilities, as described in the "Federal Rule Applicability" section of this TSD.
- (i) 326 IAC 20 (Hazardous Air Pollutants)
There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs) (326 IAC 14, 326 IAC 20 and 40 CFR Part 63) included in the permit See Federal Rule Applicability Section of this TSD.

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.

- (a) The compliance determination and monitoring requirements applicable to this source are as follows:

Emission Unit/Control	Operating Parameters	Frequency
Dryer / Baghouse	Pressure Drop	Once per day
Stack SV1	Visual emission notation	Once per day

- (b) The testing requirements applicable to this source are as follows:

Emission Unit	Control Device	Timeframe for Testing	Pollutant	Frequency of Testing	Limit or Requirement
Dryer	Baghouse	No later than 180 days of issuance of permit. (See note 1 below)	PM	Every 5 years from date of valid compliance demonstration	0.255 lb/ton of asphalt produced
Dryer	Baghouse	Within 180 days of the publication of the new and revised condensable PM test methods. (See note 2 below)	PM10, PM2.5	Every 5 years from date of valid compliance demonstration	PM10: 0.108 lb/ton of asphalt produced; PM2.5: 0.125 lb/ton of asphalt produced

Notes:

- (1) The Permittee conducted a PM and PM10 stack test on April 31, 2007. As the result of that testing, the source requested and received a Significant Permit Revision (F167-26223-00114, issued July 14, 2008) changing its PM and PM10 limits. However, no subsequent testing was done. Based on the evaluation of this history and of the results, stack testing is required within 180 days of the issuance of this renewal permit.
- (2) The Permittee shall perform PM10 and PM2.5 testing within 180 days of the publication of the new or revised condensable PM test method(s) referenced in the U. S. EPA's Final Rule for Implementation of the New Source Review (NSR) Program for Particulate Matter Less Than 2.5 Micrometers (PM2.5), signed on May 8th, 2008.

Recommendation

The staff recommends to the Commissioner that the FESOP Renewal be approved. This recommendation is based on the following facts and conditions:

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 January 9, 2009.

Conclusion

The operation of this stationary drum mix asphalt plant shall be subject to the conditions of the attached FESOP Renewal No. 167-27351-00114.

**Appendix A.1: Emissions Calculations
Unlimited Emission Summary**

Company Name: Wabash Valley Asphalt, LLC
Source Address: 5600 East Margaret Avenue, Terre Haute, Indiana 47808
Permit Number: 167-27351-00114
Reviewer: Jack Harmon

Asphalt Plant Maximum Capacity

Maximum Hourly Asphalt Production =	400	ton/hr								
Maximum Annual Asphalt Production =	3,504,000	ton/yr								
Maximum Annual Slag Usage =	0	ton/yr	1.5	% sulfur						
Maximum Dryer Fuel Input Rate =	120.0	MMBtu/hr								
Natural Gas Usage =	1,051	MMCF/yr								
No. 2 Fuel Oil Usage =	7,508,571	gal/yr, and	0.482	% sulfur						
No. 4 Fuel Oil Usage =	7,508,571	gal/yr, and	0.540	% sulfur						
Residual (No. 5 or No. 6) Fuel Oil Usage =	0	gal/yr, and	0.500	% sulfur						
Propane Usage =	0	gal/yr, and	0.200	gr/100 ft3 sulfur						
Butane Usage =	0	gal/yr, and	0.220	gr/100 ft3 sulfur						
Used/Waste Oil Usage =	0	gal/yr, and	1.000	% sulfur	0.50	% ash	0.200	% chlorine,	0.010	% lead
Diesel Engine Oil Usage =	0	gal/yr, and								
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 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 Slag SO2 Dryer/Mixer Emission Factor =	0.00	lb/ton of slag processed								

Unlimited/Uncontrolled Emissions

Process Description	Unlimited/Uncontrolled Potential to Emit (tons/year)								
	Criteria Pollutants						Hazardous Air Pollutants		
	PM	PM10	PM2.5	SO2	NOx	VOC	CO	Total HAPs	Worst Case HAP
Ducted Emissions									
Dryer Fuel Combustion (worst case)	26.28	31.16	31.16	304.10	99.86	2.89	44.15	1.62	0.95 (hydrogen chloride)
Dryer/Mixer (Process)	49056.00	11388.00	2628.00	101.62	96.36	56.06	227.76	18.68	5.43 (formaldehyde)
Dryer/Mixer Slag Processing	0	0	0	0.00	0	0	0	0	0
Hot Oil Heater Fuel Combustion (worst case)	0.79	0.94	0.94	9.16	3.01	0.09	1.33	0.048	0.029 (hexane)
Worst Case Emissions*	49056.79	11388.94	2628.94	313.26	102.87	56.15	229.09	18.72	5.43 (hydrogen chloride)
Fugitive Emissions									
Asphalt Load-Out and On-Site Yard	0.91	0.91	0.91	0	0	8.66	2.98	0.18	0.04 (formaldehyde)
Material Storage Piles	0.13	0.05	0.05	0	0	0	0	0	0
Material Processing and Handling	46.57	16.30	2.47	0	0	0	0	0	0
Material Crushing, Screening, and Conveying	55.59	20.31	20.31	0	0	0	0	0	0
Unpaved and Paved Roads (worst case)	56.36	14.36	1.44	0	0	0	0	0	0
Cold Mix Asphalt Production	0	0	0	0	0	0.00	0	0.00	0.00 (xylenes)
Gasoline Fuel Transfer and Dispensing	0	0	0	0	0	0.00	0	0.00	0.00 (xylenes)
Volatile Organic Liquid Storage Vessels	0	0	0	0	0	negl	0	negl	0
Total Fugitive Emissions	159.57	51.93	25.17	0	0.00	8.66	2.98	0.18	0.00 (xylenes)
Totals Unlimited/Uncontrolled PTE	49216.36	11440.87	2654.11	313.26	102.87	64.81	232.07	18.90	5.43 (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

Fuel component percentages provided by the source.

Appendix A.1: Emissions Calculations
Dryer/Mixer Fuel Combustion with Maximum Capacity > 100 MMBtu/hr
Unlimited Emissions

Company Name: Wabash Valley Asphalt, LLC
Source Address: 5600 East Margaret Avenue, Terre Haute, Indiana 47808
Permit Number: 167-27351-00114
Reviewer: Jack Harmon

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 Hourly Asphalt Production =	400	ton/hr
Maximum Annual Asphalt Production =	3,504,000	ton/yr
Maximum Fuel Input Rate =	120	MMBtu/hr
Natural Gas Usage =	1,051	MMCF/yr
No. 2 Fuel Oil Usage =	7,508,571	gal/yr, and
No. 4 Fuel Oil Usage =	7,508,571	gal/yr, and
Residual (No. 5 or No. 6) Fuel Oil Usage =	0	gal/yr, and
Propane Usage =	0	gal/yr, and
Butane Usage =	0	gal/yr, and
Used/Waste Oil Usage =	0	gal/yr, and
Diesel Engine Oil Usage =	0	gal/yr, and
	0.48	% sulfur
	0.54	% sulfur
	0.50	% sulfur
	0.20	gr/100 ft3 sulfur
	0.22	gr/100 ft3 sulfur
	1.00	% sulfur
	0.50	% ash
	0.200	% chlorine
	0.010	% lead

Unlimited/Uncontrolled Emissions

Criteria Pollutant	Emission Factor (units)								Unlimited/Uncontrolled Potential to Emit (tons/yr)								Worse Case Fuel (tons/yr)
	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	No. 4 Fuel Oil* (lb/kgal)	Residual (No. 5 or No. 6) Fuel Oil (lb/kgal)	Propane (lb/kgal)	Butane (lb/kgal)	Used/Waste Oil (lb/kgal)	Diesel Engine (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)	Diesel Engine (tons/yr)	
PM	1.9	2.0	7.0	7.815	0.5	0.6	32.0	43.4	1.00	7.51	26.28	0.00	0.000	0.000	0.00	0.00	26.28
PM10/PM2.5	7.6	3.3	8.3	9.315	0.5	0.6	25.5	43.4	3.99	12.39	31.16	0.00	0.000	0.000	0.00	0.00	31.16
SO2	0.6	75.7	81.0	78.5	0.020	0.020	147.0	40.6	0.32	284.10	304.10	0.00	0.000	0.000	0.00	0.00	304.10
NOx	190	24.0	20.0	47.0	13.0	15.0	19.0	617.4	99.86	90.10	75.09	0.00	0.00	0.00	0.00	0.00	99.86
VOC	5.5	0.20	0.20	0.28	1.00	1.10	1.0	49.00	2.89	0.75	0.75	0.00	0.00	0.00	0.00	0.00	2.89
CO	84	5.0	5.0	5.0	7.5	8.4	5.0	133.0	44.1504	18.77	18.77	0.00	0.00	0.00	0.00	0.00	44.15
Hazardous Air Pollutant																	
HCl							13.2								0.00		0.00
Antimony			5.25E-03	5.25E-03			negl				1.97E-02	0.00E+00			0.00		2.0E-02
Arsenic	2.0E-04	5.6E-04	1.39E-03	1.32E-03			1.1E-01		1.1E-04	2.10E-03	4.95E-03	0.00E+00			0.00E+00		5.0E-03
Beryllium	1.2E-05	4.2E-04	2.78E-05	2.78E-05			negl		6.3E-06	1.58E-03	1.04E-04	0.00E+00			negl		1.6E-03
Cadmium	1.1E-03	4.2E-04	3.98E-04	3.98E-04			9.3E-03		5.8E-04	1.58E-03	1.49E-03	0.00E+00			0.00E+00		1.6E-03
Chromium	1.4E-03	4.2E-04	8.45E-04	8.45E-04			2.0E-02		7.4E-04	1.58E-03	3.17E-03	0.00E+00			0.00E+00		3.2E-03
Cobalt	8.4E-05		6.02E-03	6.02E-03			2.1E-04		4.4E-05		2.26E-02	0.00E+00			0.00E+00		2.3E-02
Lead	5.0E-04	1.3E-03	1.51E-03	1.51E-03			0.55		2.6E-04	4.73E-03	5.67E-03	0.00E+00			0.0E+00		0.01
Manganese	3.8E-04	8.4E-04	3.00E-03	3.00E-03			6.8E-02		2.0E-04	3.15E-03	1.13E-02	0.00E+00			0.00E+00		0.01
Mercury	2.6E-04	4.2E-04	1.13E-04	1.13E-04					1.4E-04	1.58E-03	4.24E-04	0.00E+00					1.6E-03
Nickel	2.1E-03	4.2E-04	8.45E-02	8.45E-02			1.1E-02		1.1E-03	1.58E-03	3.17E-01	0.00E+00			0.00E+00		0.317
Selenium	2.4E-05	2.1E-03	6.83E-04	6.83E-04			negl		1.3E-05	7.88E-03	2.56E-03	0.00E+00			negl		7.9E-03
1,1,1-Trichloroethane			2.36E-04	2.36E-04							8.86E-04	0.00E+00					8.9E-04
1,3-Butadiene							5.47E-03								0.00E+00		0.0E+00
Acetaldehyde							1.07E-01								0.00E+00		0.0E+00
Acrolein							1.30E-02								0.00E+00		0.0E+00
Benzene	2.1E-03		2.14E-04	2.14E-04			1.31E-01		1.1E-03		8.03E-04	0.00E+00			0.00E+00		1.1E-03
Bis(2-ethylhexyl)phthalate							2.2E-03								0.00E+00		0.0E+00
Dichlorobenzene	1.2E-03						8.0E-07		6.3E-04						0.00E+00		6.3E-04
Ethylbenzene			6.36E-05	6.36E-05							2.39E-04	0.00E+00					2.4E-04
Formaldehyde	7.5E-02	6.10E-02	3.30E-02	3.30E-02			1.65E-01		3.9E-02	2.29E-01	1.24E-01	0.00E+00			0.00E+00		0.229
Hexane	1.8E+00								0.95								0.946
Phenol							2.4E-03								0.00E+00		0.0E+00
Toluene	3.4E-03		6.20E-03	6.20E-03			5.73E-02		1.8E-03		2.33E-02	0.00E+00			0.00E+00		2.3E-02
Total PAH Haps	negl		1.13E-03	1.13E-03			3.9E-02		negl		4.24E-03	0.00E+00			0.00E+00		4.2E-03
Polycyclic Organic Matter		3.30E-03								1.24E-02							1.2E-02
Xylene			1.09E-04	1.09E-04			3.99E-02				4.09E-04	0.00E+00			0.00E+00		4.1E-04
Total HAPs	0.99	0.27	0.54	0.00	0	0	0.00	0.00	1.62								

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 9/88), 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
- Diesel Engine Oil: AP-42 Chapter 3.3 (dated 10/96), Tables 3.3-1 and 3.3-2

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: Emissions Calculations
Dryer/Mixer
Unlimited Process Emissions**

**Company Name: Wabash Valley Asphalt, LLC
Source Address: 5600 East Margaret Avenue, Terre Haute, Indiana 47808
Permit Number: 167-27351-00114
Reviewer: Jack Harmon**

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

Maximum Hourly Asphalt Production = 400 ton/hr
Maximum Annual Asphalt Production = 3,504,000 ton/yr

Criteria Pollutant	Uncontrolled Emission Factors (lb/ton)			Unlimited/Uncontrolled Potential to Emit (tons/yr)			Worse Case PTE
	Drum-Mix Plant (dryer/mixer)			Drum-Mix Plant (dryer/mixer)			
	Natural Gas	No. 2 Fuel Oil	Waste Oil**	Natural Gas	No. 2 Fuel Oil	Waste Oil**	
PM*	28	28	28	49056	49056	49056	49056
PM10*	6.5	6.5	6.5	11388	11388	11388	11388
PM2.5*	1.5	1.5	1.5	2628	2628	2628	2628
SO2**	0.0034	0.011	0.058	6.0	19.3	101.6	101.6
NOx**	0.026	0.055	0.055	45.6	96.4	96.4	96.4
VOC**	0.032	0.032	0.032	56.1	56.1	56.1	56.1
CO***	0.13	0.13	0.13	227.8	227.8	227.8	227.8
Hazardous Air Pollutant							
HCl			2.10E-04			3.68E-01	0.37
Antimony	1.80E-07	1.80E-07	1.80E-07	3.15E-04	3.15E-04	3.15E-04	3.15E-04
Arsenic	5.60E-07	5.60E-07	5.60E-07	9.81E-04	9.81E-04	9.81E-04	9.81E-04
Beryllium	negl	negl	negl	negl	negl	negl	0.00E+00
Cadmium	4.10E-07	4.10E-07	4.10E-07	7.18E-04	7.18E-04	7.18E-04	7.18E-04
Chromium	5.50E-06	5.50E-06	5.50E-06	9.64E-03	9.64E-03	9.64E-03	9.64E-03
Cobalt	2.60E-08	2.60E-08	2.60E-08	4.56E-05	4.56E-05	4.56E-05	4.56E-05
Lead	6.20E-07	1.50E-05	1.50E-05	1.09E-03	2.63E-02	2.63E-02	2.63E-02
Manganese	7.70E-06	7.70E-06	7.70E-06	1.35E-02	1.35E-02	1.35E-02	1.35E-02
Mercury	2.40E-07	2.60E-06	2.60E-06	4.20E-04	4.56E-03	4.56E-03	4.56E-03
Nickel	6.30E-05	6.30E-05	6.30E-05	0.11	0.11	0.11	0.11
Selenium	3.50E-07	3.50E-07	3.50E-07	6.13E-04	6.13E-04	6.13E-04	6.13E-04
2,2,4 Trimethylpentane	4.00E-05	4.00E-05	4.00E-05	0.07	0.07	0.07	0.07
Acetaldehyde			1.30E-03			2.28	2.28
Acrolein			2.60E-05			4.56E-02	4.56E-02
Benzene	3.90E-04	3.90E-04	3.90E-04	0.68	0.68	0.68	0.68
Ethylbenzene	2.40E-04	2.40E-04	2.40E-04	0.42	0.42	0.42	0.42
Formaldehyde	3.10E-03	3.10E-03	3.10E-03	5.43	5.43	5.43	5.43
Hexane	9.20E-04	9.20E-04	9.20E-04	1.61	1.61	1.61	1.61
Methyl chloroform	4.80E-05	4.80E-05	4.80E-05	0.08	0.08	0.08	0.08
MEK			2.00E-05			0.04	0.04
Propionaldehyde			1.30E-04			0.23	0.23
Quinone			1.60E-04			0.28	0.28
Toluene	1.50E-04	2.90E-03	2.90E-03	0.26	5.08	5.08	5.08
Total PAH Haps	1.90E-04	8.80E-04	8.80E-04	0.33	1.54	1.54	1.54
Xylene	2.00E-04	2.00E-04	2.00E-04	0.35	0.35	0.35	0.35

Total HAPs 18.68

Worst Single HAP 5.43 (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

VOC - Volatile Organic Compounds
HCl - Hydrogen Chloride
SO2 = Sulfur Dioxide

HAP = Hazardous Air Pollutant
PAH = Polyaromatic Hydrocarbon

**Appendix A.1: Emissions Calculations
 Dryer/Mixer Slag Processing
 Unlimited Emissions**

Company Name: Wabash Valley Asphalt, LLC
Source Address: 5600 East Margaret Avenue, Terre Haute, Indiana 47808
Permit Number: 167-27351-00114
Reviewer: Jack Harmon

The following calculations determine the unlimited emissions from the processing of slag in the aggregate drying/mixing

Maximum Annual Slag Usage* = ton/yr % sulfur

	Emission Factor (lb/ton)**	Unlimited Potential to Emit (tons/yr)
Criteria Pollutant	Slag Processing	Slag Processing
SO2	0.00	0.0

This source does not use slag in its aggregate mix.

Appendix A.1: Emissions Calculations
Hot Oil Heater
Fuel Combustion with Maximum Capacity < 100 MMBtu/hr
Unlimited Emissions

Company Name: Wabash Valley Asphalt, LLC
Source Location: 5600 East Margaret Avenue, Terre Haute, Indiana 47808
Permit Number: 167-27351-00114
Reviewer: Jack Harmon

Maximum Hot Oil Heater Fuel Input Rate =	3.62	MMBtu/hr	(one heater at 2.115 MMBtu/hr plus one heater at 1.5 MMBtu/hr)
Natural Gas Usage =	32	MMCF/yr	
No. 2 Fuel Oil Usage =	226.196	gal/yr, and	0.482 % sulfur
No. 4 Fuel Oil Usage =	226.196	gal/yr, and	0.540 % sulfur

Unlimited/Uncontrolled Emissions

Criteria Pollutant	Emission Factor (units)			Unlimited/Uncontrolled Potential to Emit (tons/yr)			Worse Case Fuel (tons/yr)
	Hot Oil Heater			Hot Oil Heater			
	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	No. 4 Fuel Oil (lb/kgal)	Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)	No. 4 Fuel Oil (tons/yr)	
PM	1.9	2.0	7.0	0.030	0.226	0.792	0.79
PM10/PM2.5	7.6	3.3	8.3	0.120	0.373	0.939	0.94
SO2	0.6	71.0	81.0	0.010	8.030	9.161	9.16
NOx	190	20.0	20.0	3.008	2.262	2.262	3.01
VOC	5.5	0.20	0.2	0.087	0.023	0.023	0.09
CO	84	5.0	5.0	1.330	0.565	0.565	1.33
Hazardous Air Pollutant							
Antimony			5.25E-03			5.94E-04	5.9E-04
Arsenic	2.0E-04	5.6E-04	1.32E-03	3.2E-06	6.33E-05	1.49E-04	1.5E-04
Beryllium	1.2E-05	4.2E-04	2.78E-05	1.9E-07	4.75E-05	3.14E-06	4.8E-05
Cadmium	1.1E-03	4.2E-04	3.98E-04	1.7E-05	4.75E-05	4.50E-05	4.8E-05
Chromium	1.4E-03	4.2E-04	8.45E-04	2.2E-05	4.75E-05	9.56E-05	9.6E-05
Cobalt	8.4E-05		6.02E-03	1.3E-06		6.81E-04	6.8E-04
Lead	5.0E-04	1.3E-03	1.51E-03	7.9E-06	1.43E-04	1.71E-04	1.7E-04
Manganese	3.8E-04	8.4E-04	3.00E-03	6.0E-06	9.50E-05	3.39E-04	3.4E-04
Mercury	2.6E-04	4.2E-04	1.13E-04	4.1E-06	4.75E-05	1.28E-05	4.8E-05
Nickel	2.1E-03	4.2E-04	8.45E-02	3.3E-05	4.75E-05	9.56E-03	9.6E-03
Selenium	2.4E-05	2.1E-03	6.83E-04	3.8E-07	2.38E-04	7.72E-05	2.4E-04
Benzene	2.1E-03		2.14E-04	3.3E-05		2.42E-05	3.3E-05
Trichloroethane			2.36E-04			2.67E-05	
Dichlorobenzene	1.2E-03			1.9E-05			1.9E-05
Ethylbenzene			6.36E-05				
Formaldehyde	7.5E-02	6.10E-02	3.30E-02	1.2E-03	6.90E-03	3.73E-03	6.9E-03
Hexane	1.8E+00			0.03			2.9E-02
Phenol							
Xylene			1.09E-04				
Toluene	3.4E-03		6.20E-03	5.4E-05			5.4E-05
Total PAH Haps	negl		1.13E-03	negl			0.0E+00
Polycyclic Organic Matter		3.30E-03	3.30E-03		3.73E-04	3.73E-04	3.7E-04
Total HAPs =				3.0E-02	8.0E-03	1.5E-02	4.78E-02

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 and No. 4 Fuel Oil: AP-42 Chapter 1.3 (dated 9/98), 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)
 SO2 = Sulfur Dioxide
 NOx = Nitrogen Oxides
 VOC = Volatile Organic Compounds
 CO = Carbon Monoxide
 HAP = Hazardous Air Pollutant
 HCl = Hydrogen Chloride
 PAH = Polycyclic Aromatic Hydrocarbon
 S= indicates that weight of sulfur % should be multiplied by value given.

**Appendix A.1: Emissions Calculations
Asphalt Load-Out and Yard Emissions
Unlimited Emissions**

Company Name: Wabash Valley Asphalt, LLC
Source Address: 5600 East Margaret Avenue, Terre Haute, Indiana 47808
Permit Number: 167-27351-00114
Reviewer: Jack Harmon

The following calculations determine the unlimited/uncontrolled fugitive emissions from hot asphalt mix load-out 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 =	3,504,000	tons/yr

Pollutant	Emission Factor (lb/ton asphalt)		Unlimited/Uncontrolled Potential to Emit (tons/yr)		
	Load-Out	On-Site Yard	Load-Out	On-Site Yard	Total
Total PM*	5.2E-04	NA	0.91	NA	0.91
Organic PM	3.4E-04	NA	0.60	NA	0.60
TOC	0.004	0.001	7.29	1.927	9.2
CO	0.001	3.5E-04	2.36	0.617	2.98

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

PM/HAPs	0.042	0	0.042
VOC/HAPs	0.108	0.028	0.136
non-VOC/HAPs	5.6E-04	1.5E-04	7.1E-04
non-VOC/non-HAPs	0.53	0.14	0.67

Total VOCs	6.85	1.8	8.7
Total HAPs	0.15	0.029	0.18
Worst Single HAP			0.038
			(formaldehyde)

Methodology

The asphalt temperature and volatility factor were assumed standard.
 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}

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: Emissions Calculations
Asphalt Load-Out and Yard Emissions (continued)
Unlimited Emissions

Company Name: Wabash Valley Asphalt, LLC
Source Address: 5600 East Margaret Avenue, Terre Haute, Indiana 47808
Permit Number: 167-27351-00114
Reviewer: Jack Harmon

Organic Particulate-Based Compounds (Table 11.1-15)

Pollutant	CASRN	Category	HAP Type	Source	Speciation Profile	Unlimited/Uncontrolled Potential to Emit (tons/yr)		
					Load-out and Onsite Yard (% by weight of Total Organic PM)	Load-out	Onsite Yard	Total
PAH HAPs								
Acenaphthene	83-32-9	PM/HAP	POM	Organic PM	0.26%	1.6E-03	NA	1.6E-03
Acenaphthylene	208-96-8	PM/HAP	POM	Organic PM	0.028%	1.7E-04	NA	1.7E-04
Anthracene	120-12-7	PM/HAP	POM	Organic PM	0.07%	4.2E-04	NA	4.2E-04
Benzo(a)anthracene	56-55-3	PM/HAP	POM	Organic PM	0.019%	1.1E-04	NA	1.1E-04
Benzo(b)fluoranthene	205-99-2	PM/HAP	POM	Organic PM	0.0076%	4.5E-05	NA	4.5E-05
Benzo(k)fluoranthene	207-08-9	PM/HAP	POM	Organic PM	0.0022%	1.3E-05	NA	1.3E-05
Benzo(g,h,i)perylene	191-24-2	PM/HAP	POM	Organic PM	0.0019%	1.1E-05	NA	1.1E-05
Benzo(a)pyrene	50-32-8	PM/HAP	POM	Organic PM	0.0023%	1.4E-05	NA	1.4E-05
Benzo(e)pyrene	192-97-2	PM/HAP	POM	Organic PM	0.0078%	4.7E-05	NA	4.7E-05
Chrysene	218-01-9	PM/HAP	POM	Organic PM	0.103%	6.2E-04	NA	6.2E-04
Dibenz(a,h)anthracene	53-70-3	PM/HAP	POM	Organic PM	0.00037%	2.2E-06	NA	2.2E-06
Fluoranthene	206-44-0	PM/HAP	POM	Organic PM	0.05%	3.0E-04	NA	3.0E-04
Fluorene	86-73-7	PM/HAP	POM	Organic PM	0.77%	4.6E-03	NA	4.6E-03
Indeno(1,2,3-cd)pyrene	193-39-5	PM/HAP	POM	Organic PM	0.00047%	2.8E-06	NA	2.8E-06
2-Methylnaphthalene	91-57-6	PM/HAP	POM	Organic PM	2.38%	1.4E-02	NA	0.014
Naphthalene	91-20-3	PM/HAP	POM	Organic PM	1.25%	7.5E-03	NA	7.5E-03
Perylene	198-55-0	PM/HAP	POM	Organic PM	0.022%	1.3E-04	NA	1.3E-04
Phenanthrene	85-01-8	PM/HAP	POM	Organic PM	0.81%	4.8E-03	NA	4.8E-03
Pyrene	129-00-0	PM/HAP	POM	Organic PM	0.15%	9.0E-04	NA	9.0E-04
Total PAH HAPs						0.035	NA	0.035
Other semi-volatile HAPs								
Phenol		PM/HAP	---	Organic PM	1.18%	7.0E-03	0	7.0E-03

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

Methodology

Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Speciation Profile (%)] * [Organic PM (tons/yr)]

Speciation Profiles from AP-42 Chapter 11.1 (dated 3/04), Tables 11.1-15 and 11.1-16

Abbreviations

PM = Particulate Matter

HAP = Hazardous Air Pollutant

POM = Polycyclic Organic Matter

**Appendix A.1: Emissions Calculations
Asphalt Load-Out and Yard Emissions (continued)
Unlimited Emissions**

Organic Volatile-Based Compounds (Table 11.1-16)

Pollutant	CASRN	Category	HAP Type	Source	Speciation Profile	Unlimited/Uncontrolled Potential to Emit (tons/yr)		
					Load-out and Onsite Yard (% by weight of TOC)	Load-out	Onsite Yard	Total
VOC		VOC	---	TOC	94%	6.85	1.81	8.66
non-VOC/non-HAPS								
Methane	74-82-8	non-VOC/non-HAP	---	TOC	6.50%	4.7E-01	1.3E-01	0.599
Acetone	67-64-1	non-VOC/non-HAP	---	TOC	0.046%	3.4E-03	8.9E-04	0.004
Ethylene	74-85-1	non-VOC/non-HAP	---	TOC	0.71%	5.2E-02	1.4E-02	0.065
Total non-VOC/non-HAPS					7.30%	0.532	0.141	0.67
Volatile organic HAPs								
Benzene	71-43-2	VOC/HAP	---	TOC	0.052%	3.8E-03	1.0E-03	4.8E-03
Bromomethane	74-83-9	VOC/HAP	---	TOC	0.0096%	7.0E-04	1.9E-04	8.8E-04
2-Butanone	78-93-3	VOC/HAP	---	TOC	0.049%	3.6E-03	9.4E-04	4.5E-03
Carbon Disulfide	75-15-0	VOC/HAP	---	TOC	0.013%	9.5E-04	2.5E-04	1.2E-03
Chloroethane	75-00-3	VOC/HAP	---	TOC	0.00021%	1.5E-05	4.0E-06	1.9E-05
Chloromethane	74-87-3	VOC/HAP	---	TOC	0.015%	1.1E-03	2.9E-04	1.4E-03
Cumene	92-82-8	VOC/HAP	---	TOC	0.11%	8.0E-03	2.1E-03	1.0E-02
Ethylbenzene	100-41-4	VOC/HAP	---	TOC	0.28%	2.0E-02	5.4E-03	0.026
Formaldehyde	50-00-0	VOC/HAP	---	TOC	0.088%	6.4E-03	1.7E-03	0.008
n-Hexane	100-54-3	VOC/HAP	---	TOC	0.15%	1.1E-02	2.9E-03	0.014
Isooctane	540-84-1	VOC/HAP	---	TOC	0.0018%	1.3E-04	3.5E-05	1.7E-04
Methylene Chloride	75-09-2	non-VOC/HAP	---	TOC	0	0	0	0.0E+00
MTBE	1634-04-4	VOC/HAP	---	TOC	0	0	0	0
Styrene	100-42-5	VOC/HAP	---	TOC	0.0073%	5.3E-04	1.4E-04	6.7E-04
Tetrachloroethene	127-18-4	non-VOC/HAP	---	TOC	0.0077%	5.6E-04	1.5E-04	7.1E-04
Toluene	100-88-3	VOC/HAP	---	TOC	0.21%	1.5E-02	4.0E-03	0.019
1,1,1-Trichloroethane	71-55-6	VOC/HAP	---	TOC	0	0	0	0
Trichloroethene	79-01-6	VOC/HAP	---	TOC	0	0	0	0
Trichlorofluoromethane	75-69-4	VOC/HAP	---	TOC	0.0013%	9.5E-05	2.5E-05	1.2E-04
m-/p-Xylene	1330-20-7	VOC/HAP	---	TOC	0.41%	3.0E-02	7.9E-03	0.038
o-Xylene	95-47-6	VOC/HAP	---	TOC	0.08%	5.8E-03	1.5E-03	7.4E-03
Total volatile organic HAPs					1.50%	0.109	0.029	0.138

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

**Appendix A.1: Emissions Calculations
Material Storage Piles
Unlimited Emissions**

Company Name: Wabash Valley Asphalt, LLC
Source Address: 5600 East Margaret Avenue, Terre Haute, Indiana 47808
Permit Number: 167-27351-00114
Reviewer: Jack Harmon

The following calculations determine the amount of emissions created by wind erosion of storage stockpiles, based on 8,760 hours of use and USEPA's AP-42 (Pre 1983 Edition), Section 11.2.3.

$E_f = 1.7 * (s/1.5) * (365-p) / 235 * (f/15)$ <p>where E_f = emission factor (lb/acre/day) s = silt content (wt %) p = 125 days of rain greater than or equal to 0.01 inches f = 15% of wind greater than or equal to 12 mph</p>
--

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	1.10	1.27	0.15	0.035	0.012
Stone	1.20	1.39	0.20	0.051	0.018
RAP	0.80	0.93	0.20	0.034	0.012
Gravel	1.00	1.16	0.05	0.011	0.004
Slag	0.00	0.00	1.05	0.000	0.000
Totals				0.13	0.05

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 source

**Maximum anticipated pile size (acres) provided by the source.

Abbreviations

PM = Particulate Matter

PM10 = Particulate Matter (<10 um)

PM2.5 = Particulate Matter (<2.5 um)

PM2.5 = PM10

PTE = Potential to Emit

Appendix A.1: Emissions Calculations
Material Processing, Handling, Crushing, Screening, and Conveying
Unlimited Emissions

Company Name: Wabash Valley Asphalt, LLC
Source Address: 5600 East Margaret Avenue, Terre Haute, Indiana 47808
Permit Number: 167-27351-00114
Reviewer: Jack Harmon

Batch or Continuous Drop Operations (AP-42 Section 13.2.4)

To estimate potential fugitive dust emissions from processing and handling of raw materials (batch or continuous drop operations), AP-42 emission factors for Aggregate Handling, Section 13.2.4 (fifth edition, 1/95) are utilized.

$$E_f = k \cdot (0.0032)^{1.3} \cdot (U/5)^{1.4} \cdot (M/2)^{1.4}$$

where: E_f = Emission factor (lb/ton)

k (PM) =	1.0	= 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 =	12.0	= worst case annual mean wind speed (Source: NOAA, 2006*)
M =	2.1	= material % moisture content of aggregate (Source: AP-42 Section 11.1.1.1)
E_f (PM) =	9.33E-03	lb PM/ton of material handled
E_f (PM10) =	3.26E-03	lb PM10/ton of material handled
E_f (PM2.5) =	4.94E-04	lb PM2.5/ton of material handled

Maximum Annual Asphalt Production =	3,504,000	tons/yr
Percent Asphalt Cement/Binder (weight %) =	5.0%	
Maximum Material Handling Throughput =	3,328,800	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	15.52	5.43	0.82
Front-end loader dumping of materials into feeder bins	15.52	5.43	0.82
Conveyor dropping material into dryer/mixer or batch tower	15.52	5.43	0.82
Total (tons/yr)	46.57	16.30	2.47

Methodology

The percent asphalt cement/binder provided by the source.

Maximum Material Handling Throughput (tons/yr) = [Annual Asphalt Production Limitation (tons/yr)] * [1 - Percent Asphalt Cement/Binder (weight %)]

Unlimited Potential to Emit (tons/yr) = (Maximum Material Handling Throughput (tons/yr)) * (Emission Factor (lb/ton)) * (ton/2000 lbs)

Raw materials may include limestone, sand, recycled asphalt pavement (RAP), gravel, slag, and other additives

*Worst case annual mean wind speed (Indianapolis, IN) from "Comparative Climatic Data", National Climatic Data Center, NOAA, 2006

Material Screening and Conveying (AP-42 Section 11.19.2)

To estimate potential fugitive dust emissions from raw material crushing, screening, and conveying, AP-42 emission factors for Crushed Stone Processing Operations, Section 11.19.2 (dated 8/04) are utilized.

Operation	Uncontrolled Emission Factor for PM (lbs/ton)*	Uncontrolled Emission Factor for PM10 (lbs/ton)*	Unlimited/Uncontrolled PTE of PM (tons/yr)	Unlimited/Uncontrolled PTE of PM10/PM2.5 (tons/yr)**
Crushing	0.0054	0.0024	8.99	3.99
Screening	0.025	0.0087	41.61	14.48
Conveying	0.003	0.0011	4.99	1.83
Unlimited Potential to Emit (tons/yr) =			55.59	20.31

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: Emissions Calculations

**Unpaved Roads
Unlimited Emissions**

Company Name: **Wabash Valley Asphalt, LLC**
 Source Address: **5600 East Margaret Avenue, Terre Haute, Indiana 47808**
 Permit Number: **167-27351-00114**
 Reviewer: **Jack Harmon**

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 = **3,504,000** tons/yr
 Percent Asphalt Cement/Binder (weight %) = **5.0%**
 Maximum Material Handling Throughput = **3,328,800** tons/yr
 Maximum Asphalt Cement/Binder Throughput = **175,200** tons/yr
 Maximum No. 2 Fuel Oil Usage = **7,508,571** 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)	1.0	24.0	25.0	1.4E+05	3.5E+06	420	0.080	11033.0
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	1.0	0.0	1.0	1.4E+05	1.4E+05	420	0.080	11033.0
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	1.0	24.0	25.0	7.3E+03	1.8E+05	420	0.080	580.7
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	1.0	0.0	1.0	7.3E+03	7.3E+03	420	0.080	580.7
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	1.0	24.0	25.0	1.1E+03	2.6E+04	420	0.080	84.1
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	1.0	0.0	1.0	1.1E+03	1.1E+03	420	0.080	84.1
Aggregate/RAP Loader Full	Front-end loader (3 CY)	1.0	24.0	25.0	1.4E+05	3.5E+06	420	0.080	11033.0
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	1.0	0.0	1.0	1.4E+05	1.4E+05	420	0.080	11033.0
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	1.0	24.0	25.0	1.5E+05	3.7E+06	420	0.080	11613.6
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	1.0	0.0	1.0	1.5E+05	1.5E+05	420	0.080	11613.6
Total					8.6E+05	1.1E+07			6.9E+04

Average Vehicle Weight Per Trip = **13.0** tons/trip
 Average Miles Per Trip = **0.080** miles/trip

Unmitigated Emission Factor, $E_f = k[(s/12)^a][W/3]^b$ (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 =	13.0	13.0	13.0	tons = average vehicle weight (provided by source)
b =	0.45	0.45	0.45	= constant (AP-42 Table 13.2.2-2)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, $E_{ext} = E_f * [(365 - P)/365]$

Mitigated Emission Factor, $E_{ext} = E_f * [(365 - P)/365]$

where P = **125** days of rain greater than or equal to 0.01 inches (see Fig. 13.2.2-1)

	PM	PM10	PM2.5	
Unmitigated Emission Factor, E_f =	4.99	1.27	0.13	lb/mile
Mitigated Emission Factor, E_{ext} =	3.28	0.84	0.08	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)	27.53	7.02	0.70	18.10	4.61	0.46	9.05	2.31	0.23
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	27.53	7.02	0.70	18.10	4.61	0.46	9.05	2.31	0.23
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	1.449	0.369	0.04	0.953	0.243	0.02	0.476	0.121	0.01
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	1.449	0.369	0.04	0.953	0.243	0.02	0.476	0.121	0.01
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	0.210	0.054	0.01	0.138	0.035	0.00	0.069	0.018	0.00
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	0.210	0.054	0.01	0.138	0.035	0.00	0.069	0.018	0.00
Aggregate/RAP Loader Full	Front-end loader (3 CY)	27.53	7.02	0.70	18.10	4.61	0.46	9.05	2.31	0.23
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	27.53	7.02	0.70	18.10	4.61	0.46	9.05	2.31	0.23
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	28.98	7.39	0.74	19.06	4.86	0.49	9.53	2.43	0.24
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	28.98	7.39	0.74	19.06	4.86	0.49	9.53	2.43	0.24
Totals		171.42	43.69	4.37	112.71	28.73	2.87	56.36	14.36	1.44

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)
 PM2.5 = PM10
 PTE = Potential to Emit

**Appendix A: Emissions Calculations
Paved Roads
Unlimited Emissions**

Company Name: Wabash Valley Asphalt, LLC
Source Address: 5600 East Margaret Avenue, Terre Haute, Indiana 47808
Permit Number: 167-27351-00114
Reviewer: Jack Harmon

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 = 3,504,000 tons/yr
 Percent Asphalt Cement/Binder (weight %) = 5.0%
 Maximum Material Handling Throughput = 3,328,800 tons/yr
 Maximum Asphalt Cement/Binder Throughput = 175,200 tons/yr
 Maximum No. 2 Fuel Oil Usage = 7,508,571 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	1.5E+05	5.9E+06	300	0.057	8443.6
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	17.0	0	17.00	1.5E+05	2.5E+06	300	0.057	8443.6
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	12.0	36.0	48.00	4.9E+03	2.3E+05	300	0.057	276.5
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.00	4.9E+03	5.8E+04	300	0.057	276.5
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	12.0	32.0	44.00	7.9E+02	3.5E+04	300	0.057	45.1
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.00	7.9E+02	9.5E+03	300	0.057	45.1
Aggregate/RAP Loader Full	Front-end loader (3 CY)	15.0	4.2	19.20	7.9E+05	1.5E+07	300	0.057	45032.5
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	15.0	0	15.00	7.9E+05	1.2E+07	300	0.057	45032.5
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	17.0	24.0	41.00	1.5E+05	6.0E+06	300	0.057	8295.5
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	17.0	0	17.00	1.5E+05	2.5E+06	300	0.057	8295.5
Total					2.2E+06	4.4E+07			1.2E+05

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

Unmitigated Emission Factor, $E_f = [k * (sL/2)^{0.65} * (W/3)^{1.5} - C]$ (Equation 1 from AP-42 13.2.1)

	PM	PM10	PM2.5	
where k =	0.082	0.016	0.0024	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)
C =	0.00047	0.00047	0.00036	lb/mi = emission factor for vehicle exhaust, brake wear, and tire wear (AP-42 Table 13.2.1-2)
sL =	0.6	0.6	0.6	g/m ² = Ubiquitous Baseline Silt Loading Values of paved roads (Table 13.2.1-3 for summer months)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, $E_{ext} = E * [1 - (p/4N)]$

Mitigated Emission Factor, $E_{ext} = E * [1 - (p/4N)]$
 where p = 125 days of rain greater than or equal to 0.01 inches (see Fig. 13.2.1-2)
 N = 365 days per year

	PM	PM10	PM2.5	
Unmitigated Emission Factor, E_f	0.66	0.13	0.02	lb/mile
Mitigated Emission Factor, E_{ext}	0.60	0.12	0.02	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)	2.78	0.54	0.08	2.54	0.49	0.07	1.27	0.25	0.04
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	2.78	0.54	0.08	2.54	0.49	0.07	1.27	0.25	0.04
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	0.091	0.018	2.6E-03	0.083	0.016	2.4E-03	0.042	8.1E-03	1.2E-03
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	0.091	0.018	2.6E-03	0.083	0.016	2.4E-03	0.042	8.1E-03	1.2E-03
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	1.5E-02	2.9E-03	4.3E-04	1.4E-02	2.6E-03	3.9E-04	6.8E-03	1.3E-03	1.9E-04
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	1.5E-02	2.9E-03	4.3E-04	1.4E-02	2.6E-03	3.9E-04	6.8E-03	1.3E-03	1.9E-04
Aggregate/RAP Loader Full	Front-end loader (3 CY)	14.81	2.88	0.43	13.54	2.63	0.39	6.77	1.32	0.19
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	14.81	2.88	0.43	13.54	2.63	0.39	6.77	1.32	0.19
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	2.73	0.53	0.08	2.49	0.49	0.07	1.25	0.24	0.04
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	2.73	0.53	0.08	2.49	0.49	0.07	1.25	0.24	0.04
Totals		40.84	7.95	1.17	37.34	7.27	1.07	18.67	3.63	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)
 PM2.5 = PM10
 PTE = Potential to Emit

**Appendix A.1: Emissions Calculations
Cold Mix Asphalt Production and Stockpiles
Unlimited Emissions**

Company Name: Wabash Valley Asphalt, LLC
Source Address: 5600 East Margaret Avenue, Terre Haute, Indiana 47808
Permit Number: 167-27351-00114
Reviewer: Jack Harmon

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 =	0	tons/yr
Percent Asphalt Cement/Binder (weight %) =	5.0%	
Maximum Asphalt Cement/Binder Throughput =	0	tons/yr

If source does not produce cold mix asphalt enter a value of 0.

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%	0.0	0.0
Cut back asphalt medium cure (assuming kerosene solvent)	28.6%	70.0%	0.0	0.0
Cut back asphalt slow cure (assuming fuel oil solvent)	20.0%	25.0%	0.0	0.0
Emulsified asphalt with solvent (assuming water, emulsifying agent, and 15% fuel oil solvent)	15.0%	46.4%	0.0	0.0
Other asphalt with solvent binder	25.9%	2.5%	0.0	0.0
Worst Case PTE of VOC =				0.0

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) =	0.00	
PTE of Single HAP (tons/yr) =	0.00	Xylenes

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

Volatile Organic HAP	CAS#	Hazardous Air Pollutant (HAP) Content (% by weight)* For Various Petroleum Solvents				
		Gasoline	Kerosene	Diesel (#2) Fuel Oil	No. 2 Fuel Oil	No. 6 Fuel Oil
1,3-Butadiene	106-99-0	3.70E-5%				
2,2,4-Trimethylpentane	540-84-1	2.40%				
Acenaphthene	83-32-9		4.70E-5%		1.80E-4%	
Acenaphthylene	208-96-8		4.50E-5%		6.00E-5%	
Anthracene	120-12-7		1.20E-6%	5.80E-5%	2.80E-5%	5.00E-5%
Benzene	71-43-2	1.90%		2.90E-4%		
Benzo(a)anthracene	56-55-3			9.60E-7%	4.50E-7%	5.50E-4%
Benzo(a)pyrene	50-32-8			2.20E-6%	2.10E-7%	4.40E-5%
Benzo(g,h,i)perylene	191-24-2			1.20E-7%	5.70E-8%	
Biphenyl	92-52-4			6.30E-4%	7.20E-5%	
Chrysene	218-01-9			4.50E-7%	1.40E-6%	6.90E-4%
Ethylbenzene	100-41-4	1.70%		0.07%	3.40E-4%	
Fluoranthene	206-44-0		7.10E-6%	5.90E-5%	1.40E-5%	2.40E-4%
Fluorene	86-73-7		4.20E-5%	8.60E-4%	1.90E-4%	
Indeno(1,2,3-cd)pyrene	193-39-5			1.60E-7%		1.00E-4%
Methyl-tert-butylether	1634-04-4	0.33%				
Naphthalene	91-20-3	0.25%	0.31%	0.26%	0.22%	4.20E-5%
n-Hexane	110-54-3	2.40%				
Phenanthrene	85-01-8		8.60E-6%	8.80E-4%	7.90E-4%	2.10E-4%
Pyrene	129-00-0		2.40E-6%	4.60E-5%	2.90E-5%	2.30E-5%
Toluene	108-88-3	8.10%		0.18%	6.20E-4%	
Total Xylenes	1330-20-7	9.00%		0.50%	0.23%	
Total Organic HAPs		26.08%	0.33%	1.29%	0.68%	0.19%
Worst Single HAP		9.00%	0.31%	0.50%	0.23%	0.07%
		Xylenes	Naphthalene	Xylenes	Xylenes	Chrysene

Methodology

Maximum Asphalt Cement/Binder Throughput = [Annual Asphalt Production Limitation (tons/yr)] * [Percent Asphalt Cement/Binder (weight %)]
 Maximum VOC Solvent Usage (tons/yr) = [Maximum Asphalt Cement/Binder Throughput (tons/yr)] * [Maximum Weight % of VOC Solvent in Binder]
 PTE of VOC (tons/yr) = [Weight % VOC solvent in binder that evaporates] * [Maximum VOC Solvent Usage (tons/yr)]
 PTE of Total HAPs (tons/yr) = [Worst Case Total HAP Content of VOC solvent (weight %)] * [Worst Case Limited PTE of VOC (tons/yr)]
 PTE of Single HAP (tons/yr) = [Worst Case Single HAP Content of VOC solvent (weight %)] * [Worst Case Limited PTE of VOC (tons/yr)]
 *Source: Petroleum Liquids. Potter, T.L. and K.E. Simmons. 1998. Total Petroleum Hydrocarbon Criteria Working Group Series, Volume 2. Composition of Petroleum Mixtures. The Association for Environmental Health and Science. Available on the Internet at: <http://www.aehs.com/publications/catalog/contents/tp.htm>

Abbreviations

VOC = Volatile Organic Compounds
 PTE = Potential to Emit

**Appendix A.1: Emissions Calculations
Gasoline Fuel Transfer and Dispensing Operation
Unlimited Emissions**

**Company Name: Wabash Valley Asphalt, LLC
Source Address: 5600 East Margaret Avenue, Terre Haute, Indiana 47808
Permit Number: 167-27351-00114
Reviewer: Jack Harmon**

To calculate evaporative emissions from the gasoline dispensing fuel transfer and dispensing operation handling emission factors from AP-42 Table 5.2-7 were used. The total potential emission of VOC is as follows:

$$\begin{aligned} \text{Gasoline Throughput} &= 0 \text{ gallons/day} \\ &= 0.0 \text{ kgal/yr} \end{aligned}$$

Volatile Organic Compounds

Emission Source	Emission Factor (lb/kgal of throughput)	PTE of VOC (tons/yr)*
Filling storage tank (balanced submerged filling)	0.3	0.00
Tank breathing and emptying	1.0	0.00
Vehicle refueling (displaced losses - controlled)	1.1	0.00
Spillage	0.7	0.00
Total		0.00

Hazardous Air Pollutants

Worst Case Total HAP Content of VOC solvent (weight %)* =	26.08%
Worst Case Single HAP Content of VOC solvent (weight %)* =	9.0% Xylenes
Limited PTE of Total HAPs (tons/yr) =	0.00
Limited PTE of Single HAP (tons/yr) =	0.00 Xylenes

Methodology

The gasoline throughput was provided by the source.

Gasoline Throughput (kgal/yr) = [Gasoline Throughput (lbs/day)] * [365 days/yr] * [kgal/1000 gal]

PTE of VOC (tons/yr) = [Gasoline Throughput (kgal/yr)] * [Emission Factor (lb/kgal)] * [ton/2000 lb]

PTE of Total HAPs (tons/yr) = [Worst Case Total HAP Content of VOC solvent (weight %)] * [PTE of VOC (tons/yr)]

PTE of Single HAP (tons/yr) = [Worst Case Single HAP Content of VOC solvent (weight %)] * [PTE of VOC (tons/yr)]

*Source: Petroleum Liquids. Potter, T.L. and K.E. Simmons. 1998. Total Petroleum Hydrocarbon Criteria Working Group Series, Volume 2. Composition of Petroleum Mixtures. The Association for Environmental Health and Science. Available on the Internet at: <http://www.aehs.com/publications/catalog/contents/tph.htm>

Abbreviations

VOC = Volatile Organic Compounds

PTE = Potential to Emit

**Appendix A.2: Emissions Calculations
Limited Emission Summary**

Company Name: Wabash Valley Asphalt, LLC
Source Address: 5600 East Margaret Avenue, Terre Haute, Indiana 47808
Permit Number: 167-27351-00114
Reviewer: Jack Harmon

Asphalt Plant Limitations

Maximum Hourly Asphalt Production =	400	ton/hr								
Annual Asphalt Production Limitation =	1,400,000	ton/yr								
Slag Usage Limitation =	0	ton/yr	1.50	% sulfur						
Natural Gas Limitation =	1,010.39	MMCF/yr								
No. 2 Fuel Oil Limitation =	2,374,036	gal/yr, and	0.482	% sulfur						
No. 4 Fuel Oil Limitation =	2,217,936	gal/yr, and	0.540	% sulfur						
Residual (No. 5 or No. 6) Fuel Oil Limitation =	0	gal/yr, and	0.50	% sulfur						
Propane Limitation =	0	gal/yr, and	0.20	gr/100 ft3 sulfur						
Butane Limitation =	0	gal/yr, and	0.22	gr/100 ft3 sulfur						
Used/Waste Oil Limitation =	0	gal/yr, and	1.00	% sulfur	0.50	% ash	0.200	% chlorine,	0.010	% lead
Diesel Engine Oil Limitation =	0	gal/yr, and								
PM Dryer/Mixer Limitation =	0.255	lb/ton of asphalt production								
PM10 Dryer/Mixer Limitation =	0.108	lb/ton of asphalt production								
PM2.5 Dryer/Mixer Limitation =	0.125	lb/ton of asphalt production								
CO Dryer/Mixer Limitation =	0.130	lb/ton of asphalt production								
VOC Dryer/Mixer Limitation =	0.032	lb/ton of asphalt production								
Slag SO2 Dryer/Mixer Limitation =	0.000	lb/ton of slag processed								
Cold Mix Asphalt VOC Usage Limitation =	0.0	tons/yr								

Limited/Controlled Emissions

Process Description	Limited/Controlled Potential Emissions (tons/year)								
	Criteria Pollutants						Hazardous Air Pollutants		
	PM	PM10	PM2.5	SO2	NOx	VOC	CO	Total HAPs	Worst Case HAP
Ducted Emissions									
Dryer Fuel Combustion (worst case)	7.76	9.20	9.20	89.83	95.99	2.78	42.44	1.11	0.91 (HCl)
Dryer/Mixer (Process)	178.31	75.43	87.42	7.70	38.50	22.40	91.00	7.46	2.17 (formaldehyde)
Dryer/Mixer Slag Processing	0	0	0	0.00	0	0	0	0	0
Hot Oil Heater Fuel Combustion (worst case)	0.79	0.94	0.94	9.17	3.01	0.09	1.33	0.00	0.029 (hexane)
Worst Case Emissions*	179.10	76.37	88.36	99.00	99.00	22.49	92.33	7.46	2.17 (formaldehyde)
Fugitive Emissions									
Asphalt Load-Out, Silo Filling, On-Site Yard	0.78	0.78	0.78	0	0	11.99	2.02	0.20	0.06 (formaldehyde)
Material Storage Piles	0.13	0.05	0.05	0	0	0	0	0	0
Material Processing and Handling	18.61	6.51	0.99	0	0	0	0	0	0
Material Crushing, Screening, and Conveying	22.21	8.11	8.11	0	0	0	0	0	0
Unpaved and Paved Roads (worst case)	28.17	7.18	0.72	0	0	0	0	0	0
Cold Mix Asphalt Production	0	0	0	0	0	0.00	0	0.00	0.00 (xylenes)
Gasoline Fuel Transfer and Dispensing	0	0	0	0	0	0.00	0	0.09	0.00 (xylenes)
Volatile Organic Liquid Storage Vessels	0	0	0	0	0	negl	0	negl	negl
Total Fugitive Emissions	69.90	22.63	10.64	0	0	11.99	2.02	0.29	0.00 (xylenes)
Totals Limited/Controlled Emissions	249.00	99.00	99.00	99.00	99.00	34.48	94.35	7.75	2.17 (formaldehyde)

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 Fuel component percentages provided by the source.

Appendix A.2: Emissions Calculations
Dryer/Mixer Fuel Combustion with Maximum Capacity > 100 MMBtu/hr
Limited Emissions

Company Name: **Wabash Valley Asphalt, LLC**
 Source Address: **5600 East Margaret Avenue, Terre Haute, Indiana 47808**
 Permit Number: **167-27351-00114**
 Reviewer: **Jack Harmon**

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.

Production and Fuel Limitations

Maximum Hourly Asphalt Production =	400	ton/hr
Annual Asphalt Production Limitation =	1,400,000	ton/yr
Natural Gas Limitation =	1,010	MMCF/yr
No. 2 Fuel Oil Limitation =	2,374,036	gal/yr, and
No. 4 Fuel Oil Limitation =	2,217,936	gal/yr, and
Residual (No. 5 or No. 6) Fuel Oil Limitation =	0	gal/yr, and
Propane Limitation =	0	gal/yr, and
Butane Limitation =	0	gal/yr, and
Used/Waste Oil Limitation =	0	gal/yr, and
Diesel Engine Oil Limitation =	0	gal/yr, and

	0.48	% sulfur
	0.54	% sulfur
	0.50	% sulfur
	0.20	gr/100 ft3 sulfur
	0.22	gr/100 ft3 sulfur
	1.00	% sulfur
	0.50	% ash
	0.200	% chlorine
	0.010	% lead

Limited Emissions

Criteria Pollutant	Emission Factor (units)								Limited Potential to Emit (tons/yr)								
	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	No. 4 Fuel Oil* (lb/kgal)	Residual (No. 5 or No. 6) Fuel Oil (lb/kgal)	Propane (lb/kgal)	Butane (lb/kgal)	Used/Waste Oil (lb/kgal)	Diesel Engine (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)	Diesel Engine (tons/yr)	Worse Case Fuel (tons/yr)
PM	1.9	2	7	7.815	0.5	0.6	32	43.4	0.96	2.37	7.76	0.00	0.000	0.000	0.00	0.00	7.76
PM10	7.6	3.3	8.3	9.315	0.5	0.6	25.5	43.4	3.84	3.92	9.20	0.00	0.000	0.000	0.00	0.00	9.20
SO2	0.6	75.7	81.0	78.5	0.020	0.020	147.0	40.6	0.30	89.83	89.83	0.00	0.000	0.000	0.00	0.00	89.83
NOx	190	24.0	47.0	47.0	13.0	15.0	19.0	617.4	95.99	28.49	52.12	0.00	0.00	0.00	0.00	0.00	95.99
VOC	5.5	0.20	0.20	0.28	1.00	1.10	1.0	49.00	2.78	0.24	0.22	0.00	0.00	0.00	0.00	0.00	2.78
CO	84	5.0	5.0	5.0	7.5	8.4	5.0	133.0	42.44	5.94	5.54	0.00	0.00	0.00	0.00	0.00	42.44
Hazardous Air Pollutant																	
HCl							13.2								0.00		0.00
Antimony			5.25E-03	5.25E-03			negl				5.82E-03	0.00E+00			negl		5.8E-03
Arsenic	2.0E-04	5.6E-04	1.32E-03	1.32E-03			1.1E-01		1.0E-04	6.65E-04	1.46E-03	0.00E+00			0.00E+00		1.5E-03
Beryllium	1.2E-05	4.2E-04	2.78E-05	2.78E-05			negl		6.1E-06	4.99E-04	3.08E-05	0.00E+00			negl		5.0E-04
Cadmium	1.1E-03	4.2E-04	3.98E-04	3.98E-04			9.3E-03		5.6E-04	4.99E-04	4.41E-04	0.00E+00			0.00E+00		5.6E-04
Chromium	1.4E-03	4.2E-04	8.45E-04	8.45E-04			2.0E-02		7.1E-04	4.99E-04	9.37E-04	0.00E+00			0.00E+00		9.4E-04
Cobalt	8.4E-05		6.02E-03	6.02E-03			2.1E-04		4.2E-05		6.68E-03	0.00E+00			0.00E+00		6.7E-03
Lead	5.0E-04	1.3E-03	1.51E-03	1.51E-03		0.55			2.5E-04	1.50E-03	1.67E-03	0.00E+00			0.0E+00		0.00
Manganese	3.8E-04	8.4E-04	3.00E-03	3.00E-03			6.8E-02		1.9E-04	9.97E-04	3.33E-03	0.00E+00			0.00E+00		0.00
Mercury	2.6E-04	4.2E-04	1.13E-04	1.13E-04					1.3E-04	4.99E-04	1.25E-04	0.00E+00					5.0E-04
Nickel	2.1E-03	4.2E-04	8.45E-02	8.45E-02			1.1E-02		1.1E-03	4.99E-04	9.37E-02	0.00E+00			0.00E+00		0.094
Selenium	2.4E-05	2.1E-03	6.83E-04	6.83E-04			negl		1.2E-05	2.49E-03	7.57E-04	0.00E+00			negl		2.5E-03
1,1,1-Trichloroethane			2.36E-04	2.36E-04							2.62E-04	0.00E+00					2.6E-04
1,3-Butadiene							5.47E-03								0.00E+00		0.0E+00
Acetaldehyde							1.07E-01								0.00E+00		0.0E+00
Acrolein							1.30E-02								0.00E+00		0.0E+00
Benzene	2.1E-03		2.14E-04	2.14E-04			1.31E-01		1.1E-03		2.37E-04	0.00E+00			0.00E+00		1.1E-03
Bis(2-ethylhexyl)phthalate							2.2E-03								0.00E+00		0.0E+00
Dichlorobenzene	1.2E-03						8.0E-07		6.1E-04						0.00E+00		6.1E-04
Ethylbenzene			6.36E-05	6.36E-05							7.05E-05	0.00E+00					7.1E-05
Formaldehyde	7.5E-02	6.10E-02	3.30E-02	3.30E-02			1.65E-01		3.8E-02	7.24E-02	3.66E-02	0.00E+00			0.00E+00		0.072
Hexane	1.8E+00								0.91								0.909
Phenol							2.4E-03								0.00E+00		0.0E+00
Toluene	3.4E-03		6.20E-03	6.20E-03			5.73E-02		1.7E-03		6.88E-03	0.00E+00			0.00E+00		6.9E-03
Total PAH Haps	negl		1.13E-03	1.13E-03			3.9E-02	2.35E-02	negl		1.25E-03	0.00E+00			0.00E+00	0.00E+00	1.3E-03
Polycyclic Organic Matter		3.30E-03								3.92E-03							3.9E-03
Xylene			1.09E-04	1.09E-04							1.21E-04	0.00E+00			0.00E+00		1.2E-04
Total HAPs									0.95	0.08	0.16	0.00	0	0	0.00	0.00	1.11

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)) * (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 9/98), 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
 Diesel Engine Oil: AP-42 Chapter 3.3 (dated 10/96), Tables 3.3-1 and 3.3-2

Abbreviations

PM = Particulate Matter
 PM10 = Particulate Matter (<10 um)
 SO2 = Sulfur Dioxide
 NOx = Nitrogen Oxides
 VOC = Volatile Organic Compounds
 CO = Carbon Monoxide
 HAP = Hazardous Air Pollutant
 HCl = Hydrogen Chloride
 PAH = Polycyclic Aromatic Hydrocarbon

*Since there are no specific AP-42 HAP emission factors for combustion of No. 4 fuel oil, it was assumed that HAP emissions from combustion of No. 4 fuel oil were equal to combustion of residual or No. 6 fuel oil.

**Appendix A.2: Emissions Calculations
Dryer/Mixer
Limited Process Emissions**

Company Name: Wabash Valley Asphalt, LLC
Source Address: 5600 East Margaret Avenue, Terre Haute, Indiana 47808
Permit Number: 167-27351-00114
Reviewer: Jack Harmon

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

Maximum Hourly Asphalt Production =	400	ton/hr
Annual Asphalt Production Limitation =	1,400,000	ton/yr
PM Dryer/Mixer Limitation =	0.255	lb/ton of asphalt production
PM10 Dryer/Mixer Limitation =	0.108	lb/ton of asphalt production
PM2.5 Dryer/Mixer Limitation =	0.125	lb/ton of asphalt production
CO Dryer/Mixer Limitation =	0.130	lb/ton of asphalt production
VOC Dryer/Mixer Limitation =	0.032	lb/ton of asphalt production

Criteria Pollutant	Emission Factor or Limitation (lb/ton)			Limited/Controlled Potential to Emit (tons/yr)			Worse Case PTE
	Drum-Mix Plant (dryer/mixer, controlled by fabric filter)			Drum-Mix Plant (dryer/mixer, controlled by fabric filter)			
	Natural Gas	No. 2 Fuel Oil	Waste Oil**	Natural Gas	No. 2 Fuel Oil	Waste Oil**	
PM*	0.255	0.255	0.255	178.3	178.3	178.3	178.3
PM10*	0.108	0.108	0.108	75.4	75.4	75.4	75.4
PM2.5*	0.125	0.125	0.125	87.4	87.4	87.4	87.4
SO2**	0.003	0.011	0.011	2.4	7.7	7.7	7.7
NOx**	0.026	0.055	0.055	18.2	38.5	38.5	38.5
VOC**	0.032	0.032	0.032	22.4	22.4	22.4	22.4
CO***	0.130	0.130	0.130	91.0	91.0	91.0	91.0
Hazardous Air Pollutant							
HCl			2.10E-04			0.15	0.15
Antimony	1.80E-07	1.80E-07	1.80E-07	1.26E-04	1.26E-04	1.26E-04	1.26E-04
Arsenic	5.60E-07	5.60E-07	5.60E-07	3.92E-04	3.92E-04	3.92E-04	3.92E-04
Beryllium	negl	negl	negl	negl	negl	negl	0.00E+00
Cadmium	4.10E-07	4.10E-07	4.10E-07	2.87E-04	2.87E-04	2.87E-04	2.87E-04
Chromium	5.50E-06	5.50E-06	5.50E-06	3.85E-03	3.85E-03	3.85E-03	3.85E-03
Cobalt	2.60E-08	2.60E-08	2.60E-08	1.82E-05	1.82E-05	1.82E-05	1.82E-05
Lead	6.20E-07	1.50E-05	1.50E-05	4.34E-04	1.05E-02	1.05E-02	1.05E-02
Manganese	7.70E-06	7.70E-06	7.70E-06	5.39E-03	5.39E-03	5.39E-03	5.39E-03
Mercury	2.40E-07	2.60E-06	2.60E-06	1.68E-04	1.82E-03	1.82E-03	1.82E-03
Nickel	6.30E-05	6.30E-05	6.30E-05	4.41E-02	4.41E-02	4.41E-02	4.41E-02
Selenium	3.50E-07	3.50E-07	3.50E-07	2.45E-04	2.45E-04	2.45E-04	2.45E-04
2,2,4 Trimethylpentane	4.00E-05	4.00E-05	4.00E-05	2.80E-02	2.80E-02	2.80E-02	2.80E-02
Acetaldehyde			1.30E-03			0.91	0.91
Acrolein			2.60E-05			1.82E-02	1.82E-02
Benzene	3.90E-04	3.90E-04	3.90E-04	0.27	0.27	0.27	0.27
Ethylbenzene	2.40E-04	2.40E-04	2.40E-04	0.17	0.17	0.17	0.17
Formaldehyde	3.10E-03	3.10E-03	3.10E-03	2.17	2.17	2.17	2.17
Hexane	9.20E-04	9.20E-04	9.20E-04	0.64	0.64	0.64	0.64
Methyl chloroform	4.80E-05	4.80E-05	4.80E-05	0.03	0.03	0.03	0.03
MEK			2.00E-05			0.01	0.01
Propionaldehyde			1.30E-04			0.09	0.09
Quinone			1.60E-04			0.11	0.11
Toluene	1.50E-04	2.90E-03	2.90E-03	0.11	2.03	2.03	2.03
Total PAH Haps	1.90E-04	8.80E-04	8.80E-04	0.13	0.62	0.62	0.62
Xylene	2.00E-04	2.00E-04	2.00E-04	0.14	0.14	0.14	0.14
				Total HAPs			7.46
				Worst Single HAP			2.17 (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

VOC - Volatile Organic Compounds HAP = Hazardous Air Pollutant
 HCl = Hydrogen Chloride PAH = Polyaromatic Hydrocarbon
 SO2 = Sulfur Dioxide

**Appendix A.2: Emissions Calculations
 Dryer/Mixer Slag Processing
 Limited Emissions**

Company Name: Wabash Valley Asphalt, LLC
Source Address: 5600 East Margaret Avenue, Terre Haute, Indiana 47808
Permit Number: 167-27351-00114
Reviewer: Jack Harmon

If slag not used enter value of 0, do not delete limited-dryer-mixer-slag worksheet.

The following calculations determine the limited emissions from the processing of slag in the aggregate drying/mixing

Slag Usage Limitation = ton/yr
 SO2 Slag Limitation = lb/ton of slag processed % sulfur

	Emission Factor or Limitation (lb/ton)*	Limited Potential to Emit (tons/yr)
Criteria Pollutant	Slag Processing	Slag Processing
SO2	0.000	0.0

This source does not use slag in its aggregate mix.

Appendix A.2: Emissions Calculations
Hot Oil Heater
Fuel Combustion with Maximum Capacity < 100 MMBtu/hr
Limited Emissions

Company Name: Wabash Valley Asphalt, LLC
Source Location: 5600 East Margaret Avenue, Terre Haute, Indiana 47808
Permit Number: 167-27351-00114
Reviewer: Jack Harmon

Maximum Hot Oil Heater Fuel Input Rate =	3.62	MMBtu/hr	(one heater at 2.115 MMBtu/hr plus one heater at 1.5 MMBtu/hr)
Natural Gas Usage =	32	MMCF/yr	
No. 2 Fuel Oil Usage =	226,509	gal/yr, and	0.482 % sulfur
No. 4 Fuel Oil Usage =	226,509	gal/yr, and	0.540 % sulfur

Unlimited/Uncontrolled Emissions

Criteria Pollutant	Emission Factor (units)			Limited/controlled Potential to Emit (tons/yr)			Worse Case Fuel (tons/yr)
	Hot Oil Heater			Hot Oil Heater			
	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	No. 4 Fuel Oil (lb/kgal)	Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)	No. 4 Fuel Oil (tons/yr)	
PM	1.9	2.0	7.0	0.030	0.227	0.793	0.79
PM10/PM2.5	7.6	3.3	8.3	0.121	0.374	0.940	0.94
SO2	0.6	71.0	81.0	0.010	8.041	9.174	9.17
NOx	190	20.0	20.0	3.013	2.265	2.265	3.01
VOC	5.5	0.20	0.2	0.087	0.023	0.023	0.09
CO	84	5.0	5.0	1.332	0.566	0.566	1.33
Hazardous Air Pollutant							
Antimony			5.25E-03			5.94E-04	5.9E-04
Arsenic	2.0E-04	5.6E-04	1.32E-03	0.000	0.000	0.000	1.5E-04
Beryllium	1.2E-05	4.2E-04	2.78E-05	0.000	0.000	0.000	4.8E-05
Cadmium	1.1E-03	4.2E-04	3.98E-04	0.000	0.000	0.000	4.8E-05
Chromium	1.4E-03	4.2E-04	8.45E-04	0.000	0.000	0.000	9.6E-05
Cobalt	8.4E-05		6.02E-03	0.000		0.001	6.8E-04
Lead	5.0E-04	1.3E-03	1.51E-03	0.000	0.000	0.000	1.7E-04
Manganese	3.8E-04	8.4E-04	3.00E-03	0.000	0.000	0.000	3.4E-04
Mercury	2.6E-04	4.2E-04	1.13E-04	0.000	0.000	0.000	4.8E-05
Nickel	2.1E-03	4.2E-04	8.45E-02	0.000	0.000	0.010	9.6E-03
Selenium	2.4E-05	2.1E-03	6.83E-04	0.000	0.000	0.000	2.4E-04
Benzene	2.1E-03		2.14E-04	0.000		0.000	3.3E-05
Trichloroethane			2.36E-04			0.000	
Dichlorobenzene	1.2E-03			0.000			1.9E-05
Ethylbenzene			6.36E-05			0.000	
Formaldehyde	7.5E-02	6.10E-02	3.30E-02	0.001	0.007	0.004	6.9E-03
Hexane	1.8E+00			0.029			2.9E-02
Phenol							
Xylene			1.09E-04			0.000	
Toluene	3.4E-03		6.20E-03	0.000		0.001	7.0E-04
Total PAH Haps	negl		1.13E-03	negl			0.0E+00
Polycyclic Organic Matter		3.30E-03	3.30E-03		0.00E+00	0.00E+00	0.0E+00
Total HAPs =				3.0E-02	7.7E-03	1.6E-02	4.82E-02

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, No. 4 Fuel Oil: AP-42 Chapter 1.3 (dated 9/98), 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	CO = Carbon Monoxide
PM10 = Particulate Matter (<10 um)	HAP = Hazardous Air Pollutant
SO2 = Sulfur Dioxide	HCl = Hydrogen Chloride
NOx = Nitrous Oxides	PAH = Polyaromatic Hydrocarbon
VOC = Volatile Organic Compounds	

Appendix A.2: Emissions Calculations
Asphalt Load-Out, Silo Filling, and Yard Emissions
Limited Emissions

Company Name: Wabash Valley Asphalt, LLC
Source Address: 5600 East Margaret Avenue, Terre Haute, Indiana 47808
Permit Number: 167-27351-00114
Reviewer: Jack Harmon

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 =	1,400,000	tons/yr

Pollutant	Emission Factor (lb/ton asphalt)			Limited Potential to Emit (tons/yr)			
	Load-Out	Silo Filling	On-Site Yard	Load-Out	Silo Filling	On-Site Yard	Total
Total PM*	5.2E-04	5.9E-04	NA	0.37	0.41	NA	0.78
Organic PM	3.4E-04	2.5E-04	NA	0.24	0.178	NA	0.42
TOC	0.004	0.012	0.001	2.91	8.53	0.770	12.2
CO	0.001	0.001	3.5E-04	0.94	0.826	0.246	2.02

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

PM/HAPs	0.017	0.020	0	0.037
VOC/HAPs	0.043	0.108	0.011	0.163
non-VOC/HAPs	2.2E-04	2.3E-05	5.9E-05	3.1E-04
non-VOC/non-HAPs	0.21	0.12	0.06	0.39

Total VOCs	2.74	8.53	0.7	12.0
Total HAPs	0.06	0.13	0.011	0.20
Worst Single HAP				0.062
				(formaldehyde)

Methodology

The asphalt temperature and volatility factor were provided by the source.

Limited Potential to Emit (tons/yr) = (Annual Asphalt Production Limitation (tons/yr)) * (Emission Factor (lb/ton)) * (ton/2000 lbs)

Emission Factors from AP-42 Chapter 11.1 (dated 3/04), Tables 11.1-14, 11.1-15, and 11.1-16

Plant Load-Out Emission Factor Equations (AP-42 Table 11.1-14)::

$$\text{Total PM/PM10 Ef} = 0.000181 + 0.00141(-V)e^{((0.0251)(T+460)-20.43)}$$

$$\text{Organic PM Ef} = 0.00141(-V)e^{((0.0251)(T+460)-20.43)}$$

$$\text{TOC Ef} = 0.0172(-V)e^{((0.0251)(T+460)-20.43)}$$

$$\text{CO Ef} = 0.00558(-V)e^{((0.0251)(T+460)-20.43)}$$

Silo Filling Emission Factor Equations (AP-42 Table 11.1-14):

$$\text{PM/PM10 Ef} = 0.000332 + 0.00105(-V)e^{((0.0251)(T+460)-20.43)}$$

$$\text{Organic PM Ef} = 0.00105(-V)e^{((0.0251)(T+460)-20.43)}$$

$$\text{TOC Ef} = 0.0504(-V)e^{((0.0251)(T+460)-20.43)}$$

$$\text{CO Ef} = 0.00488(-V)e^{((0.0251)(T+460)-20.43)}$$

On Site Yard CO emissions estimated by multiplying the TOC emissions by 0.32

*No emission factors available for PM10 or PM2.5, therefore IDEM assumes PM10 and PM2.5 are equivalent to Total PM.

Abbreviations

TOC = Total Organic Compounds

CO = Carbon Monoxide

PM = Particulate

Matter

PM10 = Particulate Matter (<10 um)

PM2.5 = Particulate Matter (<2.5 um)

HAP = Hazardous Air Pollutant

VOC = Volatile Organic Compound

Appendix A.2: Emissions Calculations
Asphalt Load-Out, Silo Filling, and Yard Emissions (continued)
Limited Emissions

Company Name: Wabash Valley Asphalt, LLC
Source Address: 5600 East Margaret Avenue, Terre Haute, Indiana 47808
Permit Number: 167-27351-00114
Reviewer: Jack Harmon

Organic Particulate-Based Compounds (Table 11.1-15)

Pollutant	CASRN	Category	HAP Type	Source	Speciation Profile		Limited Potential to Emit (tons/yr)			
					Load-out and Onsite Yard (% by weight of Total Organic PM)	Silo Filling and Asphalt Storage Tank (% by weight of Total Organic PM)	Load-out	Silo Filling	Onsite Yard	Total
PAH HAPs										
Acenaphthene	83-32-9	PM/HAP	POM	Organic PM	0.26%	0.47%	6.2E-04	8.4E-04	NA	1.5E-03
Acenaphthylene	208-96-8	PM/HAP	POM	Organic PM	0.028%	0.014%	6.7E-05	2.5E-05	NA	9.2E-05
Anthracene	120-12-7	PM/HAP	POM	Organic PM	0.07%	0.13%	1.7E-04	2.3E-04	NA	4.0E-04
Benzo(a)anthracene	56-55-3	PM/HAP	POM	Organic PM	0.019%	0.056%	4.5E-05	1.0E-04	NA	1.4E-04
Benzo(b)fluoranthene	205-99-2	PM/HAP	POM	Organic PM	0.0076%	0	1.8E-05	0	NA	1.8E-05
Benzo(k)fluoranthene	207-08-9	PM/HAP	POM	Organic PM	0.0022%	0	5.3E-06	0	NA	5.3E-06
Benzo(g,h,i)perylene	191-24-2	PM/HAP	POM	Organic PM	0.0019%	0	4.5E-06	0	NA	4.5E-06
Benzo(a)pyrene	50-32-8	PM/HAP	POM	Organic PM	0.0023%	0	5.5E-06	0	NA	5.5E-06
Benzo(e)pyrene	192-97-2	PM/HAP	POM	Organic PM	0.0078%	0.0095%	1.9E-05	1.7E-05	NA	3.5E-05
Chrysene	218-01-9	PM/HAP	POM	Organic PM	0.103%	0.21%	2.5E-04	3.7E-04	NA	6.2E-04
Dibenz(a,h)anthracene	53-70-3	PM/HAP	POM	Organic PM	0.00037%	0	8.8E-07	0	NA	8.8E-07
Fluoranthene	206-44-0	PM/HAP	POM	Organic PM	0.05%	0.15%	1.2E-04	2.7E-04	NA	3.9E-04
Fluorene	86-73-7	PM/HAP	POM	Organic PM	0.77%	1.01%	1.8E-03	1.8E-03	NA	3.6E-03
Indeno(1,2,3-cd)pyrene	193-39-5	PM/HAP	POM	Organic PM	0.00047%	0	1.1E-06	0	NA	1.1E-06
2-Methylnaphthalene	91-57-6	PM/HAP	POM	Organic PM	2.38%	5.27%	5.7E-03	9.4E-03	NA	0.015
Naphthalene	91-20-3	PM/HAP	POM	Organic PM	1.25%	1.82%	3.0E-03	3.2E-03	NA	6.2E-03
Perylene	198-55-0	PM/HAP	POM	Organic PM	0.022%	0.03%	5.3E-05	5.3E-05	NA	1.1E-04
Phenanthrene	85-01-8	PM/HAP	POM	Organic PM	0.81%	1.80%	1.9E-03	3.2E-03	NA	5.1E-03
Pyrene	129-00-0	PM/HAP	POM	Organic PM	0.15%	0.44%	3.6E-04	7.8E-04	NA	1.1E-03
Total PAH HAPs							0.014	0.020	NA	0.034
Other semi-volatile HAPs										
Phenol		PM/HAP	---	Organic PM	1.18%	0	2.8E-03	0	0	2.8E-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: Emissions Calculations
Asphalt Load-Out, Silo Filling, and Yard Emissions (continued)
Limited Emissions

Organic Volatile-Based Compounds (Table 11.1-16)

Pollutant	CASRN	Category	HAP Type	Source	Speciation Profile		Limited Potential to Emit (tons/yr)			
					Load-out and Onsite Yard (% by weight of TOC)	Silo Filling and Asphalt Storage Tank (% by weight of TOC)	Load-out	Silo Filling	Onsite Yard	Total
VOC		VOC	---	TOC	94%	100%	2.74	8.53	0.72	11.99
non-VOC/non-HAPS										
Methane	74-82-8	non-VOC/non-HAP	---	TOC	6.50%	0.26%	1.9E-01	2.2E-02	5.0E-02	0.261
Acetone	67-64-1	non-VOC/non-HAP	---	TOC	0.046%	0.055%	1.3E-03	4.7E-03	3.5E-04	0.006
Ethylene	74-85-1	non-VOC/non-HAP	---	TOC	0.71%	1.10%	2.1E-02	9.4E-02	5.5E-03	0.120
Total non-VOC/non-HAPS					7.30%	1.40%	0.213	0.119	0.056	0.39
Volatile organic HAPs										
Benzene	71-43-2	VOC/HAP	---	TOC	0.052%	0.032%	1.5E-03	2.7E-03	4.0E-04	4.6E-03
Bromomethane	74-83-9	VOC/HAP	---	TOC	0.0096%	0.0049%	2.8E-04	4.2E-04	7.4E-05	7.7E-04
2-Butanone	78-93-3	VOC/HAP	---	TOC	0.049%	0.039%	1.4E-03	3.3E-03	3.8E-04	5.1E-03
Carbon Disulfide	75-15-0	VOC/HAP	---	TOC	0.013%	0.016%	3.8E-04	1.4E-03	1.0E-04	1.8E-03
Chloroethane	75-00-3	VOC/HAP	---	TOC	0.00021%	0.004%	6.1E-06	3.4E-04	1.6E-06	3.5E-04
Chloromethane	74-87-3	VOC/HAP	---	TOC	0.015%	0.023%	4.4E-04	2.0E-03	1.2E-04	2.5E-03
Cumene	92-82-8	VOC/HAP	---	TOC	0.11%	0	3.2E-03	0	8.5E-04	4.0E-03
Ethylbenzene	100-41-4	VOC/HAP	---	TOC	0.28%	0.038%	8.2E-03	3.2E-03	2.2E-03	0.014
Formaldehyde	50-00-0	VOC/HAP	---	TOC	0.088%	0.69%	2.6E-03	5.9E-02	6.8E-04	0.062
n-Hexane	100-54-3	VOC/HAP	---	TOC	0.15%	0.10%	4.4E-03	8.5E-03	1.2E-03	0.014
Isooctane	540-84-1	VOC/HAP	---	TOC	0.0018%	0.00031%	5.2E-05	2.6E-05	1.4E-05	9.3E-05
Methylene Chloride	75-09-2	non-VOC/HAP	---	TOC	0	0.00027%	0	2.3E-05	0	2.3E-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%	2.1E-04	4.6E-04	5.6E-05	7.3E-04
Tetrachloroethene	127-18-4	non-VOC/HAP	---	TOC	0.0077%	0	2.2E-04	0	5.9E-05	2.8E-04
Toluene	100-88-3	VOC/HAP	---	TOC	0.21%	0.062%	6.1E-03	5.3E-03	1.6E-03	0.013
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	3.8E-05	0	1.0E-05	4.8E-05
m-/p-Xylene	1330-20-7	VOC/HAP	---	TOC	0.41%	0.20%	1.2E-02	1.7E-02	3.2E-03	0.032
o-Xylene	95-47-6	VOC/HAP	---	TOC	0.08%	0.057%	2.3E-03	4.9E-03	6.2E-04	7.8E-03
Total volatile organic HAPs					1.50%	1.30%	0.044	0.111	0.012	0.166

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

**Appendix A.2: Emissions Calculations
Material Storage Piles
Limited Emissions**

Company Name: Wabash Valley Asphalt, LLC
Source Address: 5600 East Margaret Avenue, Terre Haute, Indiana 47808
Permit Number: 167-27351-00114
Reviewer: Jack Harmon

Note: Since the emissions from the storage piles are minimal, the limited emissions are equal to the unlimited emissions.

The following calculations determine the amount of emissions created by wind erosion of storage stockpiles, based on 8,760 hours of use and USEPA's AP-42 (Pre 1983 Edition), Section 11.2.3.

$E_f = 1.7 \cdot (s/1.5) \cdot (365-p)/235 \cdot (f/15)$ <p>where E_f = emission factor (lb/acre/day) s = silt content (wt %) p = 125 days of rain greater than or equal to 0.01 inches f = 15% of wind greater than or equal to 12 mph</p>
--

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	1.1	1.27	0.15	0.035	0.012
Stone	1.2	1.39	0.20	0.051	0.018
RAP	0.8	0.93	0.20	0.034	0.012
Gravel	1.0	1.16	0.05	0.011	0.004
Slag	0.0	0.00	1.05	0.000	0.000
Totals				0.13	0.05

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.

Abbreviations

PM = Particulate Matter

PM10 = Particulate Matter (<10 um)

PM2.5 = Particulate Matter (<2.5 um)

PM2.5 = PM10

PTE = Potential to Emit

Appendix A.2: Emissions Calculations
Material Processing, Handling, Crushing, Screening, and Conveying
Limited Emissions

Company Name: Wabash Valley Asphalt, LLC
Source Address: 5600 East Margaret Avenue, Terre Haute, Indiana 47808
Permit Number: 167-27351-00114
Reviewer: Jack Harmon

Batch or Continuous Drop Operations (AP-42 Section 13.2.4)

To estimate potential fugitive dust emissions from processing and handling of raw materials (batch or continuous drop operations), AP-42 emission factors for Aggregate Handling, Section 13.2.4 (fifth edition, 1/95) are utilized.

$$E_f = k \cdot (0.0032)^k \cdot [(U/5)^{1.3} / (M/2)^{1.4}]$$

where: E_f = Emission factor (lb/ton)

k (PM) = 1.0 = 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 = 12 = worst case annual mean wind speed (Source: NOAA, 2006*)
M = 2.1 = material % moisture content of aggregate (Source: AP-42 Section 11.1.1.1)

E_f (PM) = 9.33E-03 lb PM/ton of material handled
 E_f (PM10) = 3.26E-03 lb PM10/ton of material handled
 E_f (PM2.5) = 4.94E-04 lb PM2.5/ton of material handled

Annual Asphalt Production Limitation = 1,400,000 tons/yr
Percent Asphalt Cement/Binder (weight %) = 5.0%
Maximum Material Handling Throughput = 1,330,000 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	6.20	2.17	0.33
Front-end loader dumping of materials into feeder bins	6.20	2.17	0.33
Conveyor dropping material into dryer/mixer or batch tower	6.20	2.17	0.33
Total (tons/yr)	18.61	6.51	0.99

Methodology

The percent asphalt cement/binder provided by the source.
Maximum Material Handling Throughput (tons/yr) = [Annual Asphalt Production Limitation (tons/yr)] * [1 - Percent Asphalt Cement/Binder (weight %)]
Limited Potential to Emit (tons/yr) = (Maximum Material Handling Throughput (tons/yr)) * (Emission Factor (lb/ton)) * (ton/2000 lbs)
Raw materials may include limestone, sand, recycled asphalt pavement (RAP), gravel, slag, and other additives
*Worst case annual mean wind speed (Indianapolis, IN) from "Comparative Climatic Data", National Climatic Data Center, NOAA, 2006

Material Screening and Conveying (AP-42 Section 19.2.2)

To estimate potential fugitive dust emissions from raw material crushing, screening, and conveying, AP-42 emission factors for Crushed Stone Processing Operations, Section 19.2.2 (dated 8/04) are utilized.

Operation	Uncontrolled Emission Factor for PM (lbs/ton)*	Uncontrolled Emission Factor for PM10 (lbs/ton)*	Limited PTE of PM (tons/yr)	Limited PTE of PM10/PM2.5 (tons/yr)**
Crushing	0.0054	0.0024	3.59	1.60
Screening	0.025	0.0087	16.63	5.79
Conveying	0.003	0.0011	2.00	0.73
Limited Potential to Emit (tons/yr) =			22.21	8.11

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: Emissions Calculations
Unpaved Roads
Limited Emissions**

Company Name: Wabash Valley Asphalt, LLC
Source Address: 5600 East Margaret Avenue, Terre Haute, Indiana 47808
Permit Number: 167-27351-00114
Reviewer: Jack Harmon

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 = 1,400,000 tons/yr
 Percent Asphalt Cement/Binder (weight %) = 5.0%
 Maximum Material Handling Throughput = 1,330,000 tons/yr
 Maximum Asphalt Cement/Binder Throughput = 70,000 tons/yr
 No. 2 Fuel Oil Limitation = 2,374,036 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)	1.0	22.4	23.4	5.9E+04	1.4E+06	300	0.057	3373.6
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	1.0	0	1.0	5.9E+04	5.9E+04	300	0.057	3373.6
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	1.0	36.0	37.0	1.9E+03	7.2E+04	300	0.057	110.5
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	1.0	0	1.0	1.9E+03	1.9E+03	300	0.057	110.5
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	1.0	32.0	33.0	2.5E+02	8.3E+03	300	0.057	14.2
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	1.0	0	1.0	2.5E+02	2.5E+02	300	0.057	14.2
Aggregate/RAP Loader Full	Front-end loader (3 CY)	1.0	4.2	5.2	3.2E+05	1.6E+06	300	0.057	17992.4
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	1.0	0	1.0	3.2E+05	3.2E+05	300	0.057	17992.4
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	1.0	24.0	25.0	5.8E+04	1.5E+06	300	0.057	3314.4
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	1.0	0	1.0	5.8E+04	5.8E+04	300	0.057	3314.4
Total					8.7E+05	5.0E+06			5.0E+04

Average Vehicle Weight Per Trip = 5.7 tons/trip
 Average Miles Per Trip = 0.057 miles/trip

Unmitigated Emission Factor, $E_f = k \cdot [(s/12)^a] \cdot [(W/3)^b]$ (Equation 1a from AP-42 13.2.2)

	PM	PM10	PM2.5	
where k =	4.9	1.5	0.15	lb/mi = particle size multiplier (AP-42 Table 13.2.2-2 for Industrial Roads)
s =	4.8	4.8	4.8	% = mean % silt content of unpaved roads (AP-42 Table 13.2.2-3 Sand/Gravel Processing Plant Road)
a =	0.7	0.9	0.9	= constant (AP-42 Table 13.2.2-2)
W =	5.7	5.7	5.7	tons = average vehicle weight (provided by source)
b =	0.45	0.45	0.45	= constant (AP-42 Table 13.2.2-2)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, $E_{ext} = E_f \cdot [(365 - P)/365]$

Mitigated Emission Factor, $E_{ext} = E_f \cdot [(365 - P)/365]$
 where P = 125 days of rain greater than or equal to 0.01 inches (see Fig. 13.2.2-1)

	PM	PM10	PM2.5	
Unmitigated Emission Factor, E_f =	3.45	0.88	0.09	lb/mile
Mitigated Emission Factor, E_{ext} =	2.27	0.58	0.06	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)	5.83	1.49	0.15	3.83	0.98	0.10	1.92	0.49	0.05
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	5.83	1.49	0.15	3.83	0.98	0.10	1.92	0.49	0.05
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	0.191	0.049	0.00	0.125	0.032	3.2E-03	0.063	0.016	1.6E-03
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	0.191	0.049	0.00	0.125	0.032	3.2E-03	0.063	0.016	1.6E-03
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	0.025	0.006	6.3E-04	0.016	0.004	4.1E-04	0.008	0.002	2.1E-04
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	0.025	0.006	6.3E-04	0.016	0.004	4.1E-04	0.008	0.002	2.1E-04
Aggregate/RAP Loader Full	Front-end loader (3 CY)	31.08	7.92	0.79	20.44	5.21	0.52	10.22	2.60	0.26
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	31.08	7.92	0.79	20.44	5.21	0.52	10.22	2.60	0.26
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	5.73	1.46	0.15	3.76	0.96	0.10	1.88	0.48	0.05
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	5.73	1.46	0.15	3.76	0.96	0.10	1.88	0.48	0.05
Totals		85.70	21.84	2.18	56.35	14.36	1.44	28.17	7.18	0.72

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)
 PM2.5 = PM10
 PTE = Potential to Emit

**Appendix A.2: Emissions Calculations
Paved Roads
Limited Emissions**

**Company Name: Wabash Valley Asphalt, LLC
Source Address: 5600 East Margaret Avenue, Terre Haute, Indiana 47808
Permit Number: 167-27351-00114
Reviewer: Jack Harmon**

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 =	1,400,000	tons/yr
Percent Asphalt Cement/Binder (weight %) =	5.0%	
Maximum Material Handling Throughput =	1,330,000	tons/yr
Maximum Asphalt Cement/Binder Throughput =	70,000	tons/yr
No. 2 Fuel Oil Limitation =	2,374,036	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)	1.0	22.4	23.40	5.9E+04	1.4E+06	300	0.057	3373.6
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	1.0	0	1.00	5.9E+04	5.9E+04	300	0.057	3373.6
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	1.0	36.0	37.00	1.9E+03	7.2E+04	300	0.057	110.5
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	1.0	0	1.00	1.9E+03	1.9E+03	300	0.057	110.5
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	1.0	32.0	33.00	2.5E+02	8.3E+03	300	0.057	14.2
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	1.0	0	1.00	2.5E+02	2.5E+02	300	0.057	14.2
Aggregate/RAP Loader Full	Front-end loader (3 CY)	1.0	4.2	5.20	3.2E+05	1.6E+06	300	0.057	17992.4
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	1.0	0	1.00	3.2E+05	3.2E+05	300	0.057	17992.4
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	1.0	24.0	25.00	5.8E+04	1.5E+06	300	0.057	3314.4
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	1.0	0	1.00	5.8E+04	5.8E+04	300	0.057	3314.4
Total					8.7E+05	5.0E+06			5.0E+04

Average Vehicle Weight Per Trip = 5.7 tons/trip
Average Miles Per Trip = 0.057 miles/trip

Unmitigated Emission Factor, Ef = [k * (sL/2)^0.65 * (W/3)^1.5 - C] (Equation 1 from AP-42 13.2.1)

	PM	PM10	PM2.5	
where k =	0.082	0.016	0.0024	lb/mi = particle size multiplier (AP-42 Table 13.2.1-1)
W =	5.7	5.7	5.7	tons = average vehicle weight (provided by source)
C =	0.00047	0.00047	0.00036	lb/mi = emission factor for vehicle exhaust, brake wear, and tire wear (AP-42 Table 13.2.1-2)
sL =	0.6	0.6	0.6	g/m ² = Ubiquitous Baseline Silt Loading Values of paved roads (Table 13.2.1-3 for summer months)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, 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 =	0.10	0.02	0.00	lb/mile
Mitigated Emission Factor, Eext =	0.09	0.02	0.00	lb/mile
Dust Control Efficiency =	50%	50%	50%	(pursuant to control measures outlined in fugitive dust control plan)

Process	Vehicle Type	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	0.17	0.03	0.00	0.15	0.03	0.00	0.08	0.01	0.00
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	0.17	0.03	0.00	0.15	0.03	0.00	0.08	0.01	0.00
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	0.005	0.001	1.4E-04	0.005	0.001	1.3E-04	0.002	4.8E-04	6.4E-05
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	0.005	0.001	1.4E-04	0.005	0.001	1.3E-04	0.002	4.8E-04	6.4E-05
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	7.0E-04	1.3E-04	1.8E-05	6.4E-04	1.2E-04	1.7E-05	3.2E-04	6.2E-05	8.3E-06
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	7.0E-04	1.3E-04	1.8E-05	6.4E-04	1.2E-04	1.7E-05	3.2E-04	6.2E-05	8.3E-06
Aggregate/RAP Loader Full	Front-end loader (3 CY)	0.89	0.17	0.02	0.81	0.16	0.02	0.41	0.08	0.01
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	0.89	0.17	0.02	0.81	0.16	0.02	0.41	0.08	0.01
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	0.16	0.03	0.00	0.15	0.03	0.00	0.07	0.01	0.00
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	0.16	0.03	0.00	0.15	0.03	0.00	0.07	0.01	0.00
Totals		2.45	0.47	0.06	2.24	0.43	0.06	1.12	0.21	0.03

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)
 PM2.5 = PM10
 PTE = Potential to Emit

Appendix A.2: Emissions Calculations
Cold Mix Asphalt Production and Stockpiles
Limited Emissions

Company Name: Wabash Valley Asphalt, LLC
Source Address: 5600 East Margaret Avenue, Terre Haute, Indiana 47808
Permit Number: 167-27351-00114
Reviewer: Jack Harmon

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

Cold Mix Asphalt VOC Usage Limitation = **0.0** 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)
Cut back asphalt rapid cure (assuming gasoline or naphtha solvent)	25.3%	95.0%	0.0	0.0
Cut back asphalt medium cure (assuming kerosene solvent)	28.6%	70.0%	0.0	0.0
Cut back asphalt slow cure (assuming fuel oil solvent)	20.0%	25.0%	0.0	0.0
Emulsified asphalt with solvent (assuming water, emulsifying agent, and 15% fuel oil solvent)	15.0%	46.4%	0.0	0.0
Other asphalt with solvent binder	25.9%	2.5%	0.0	0.0
Worst Case Limited PTE of VOC =				0.0

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

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

Volatile Organic HAP	CAS#	Hazardous Air Pollutant (HAP) Content (% by weight)* For Various Petroleum Solvents				
		Gasoline	Kerosene	Diesel (#2) Fuel Oil	No. 2 Fuel Oil	No. 6 Fuel Oil
1,3-Butadiene	106-99-0	3.70E-5%				
2,2,4-Trimethylpentane	540-84-1	2.40%				
Acenaphthene	83-32-9		4.70E-5%		1.80E-4%	
Acenaphthylene	208-96-8		4.50E-5%		6.00E-5%	
Anthracene	120-12-7		1.20E-6%	5.80E-5%	2.80E-5%	5.00E-5%
Benzene	71-43-2	1.90%		2.90E-4%		
Benzo(a)anthracene	56-55-3			9.60E-7%	4.50E-7%	5.50E-4%
Benzo(a)pyrene	50-32-8			2.20E-6%	2.10E-7%	4.40E-5%
Benzo(g,h,i)perylene	191-24-2			1.20E-7%	5.70E-8%	
Biphenyl	92-52-4			6.30E-4%	7.20E-5%	
Chrysene	218-01-9			4.50E-7%	1.40E-6%	6.90E-4%
Ethylbenzene	100-41-4	1.70%		0.07%	3.40E-4%	
Fluoranthene	206-44-0		7.10E-6%	5.90E-5%	1.40E-5%	2.40E-4%
Fluorene	86-73-7		4.20E-5%	8.60E-4%	1.90E-4%	
Indeno(1,2,3-cd)pyrene	193-39-5			1.60E-7%		1.00E-4%
Methyl-tert-butylether	1634-04-4	0.33%				
Naphthalene	91-20-3	0.25%	0.31%	0.26%	0.22%	4.20E-5%
n-Hexane	110-54-3	2.40%				
Phenanthrene	85-01-8		8.60E-6%	8.80E-4%	7.90E-4%	2.10E-4%
Pyrene	129-00-0		2.40E-6%	4.60E-5%	2.90E-5%	2.30E-5%
Toluene	108-88-3	8.10%		0.18%	6.20E-4%	
Total Xylenes	1330-20-7	9.00%		0.50%	0.23%	
Total Organic HAPs		26.08%	0.33%	1.29%	0.68%	0.19%
Worst Single HAP		9.00%	0.31%	0.50%	0.23%	0.07%
		Xylenes	Naphthalene	Xylenes	Xylenes	Chrysene

Methodology

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. Available on the Internet at:

<http://www.aehs.com/publications/catalog/contents/tph.htm>

Abbreviations

VOC = Volatile Organic Compounds

PTE = Potential to Emit

**Appendix A.2: Emissions Calculations
Gasoline Fuel Transfer and Dispensing Operation
Limited Emissions**

Company Name: Wabash Valley Asphalt, LLC
Source Address: 5600 East Margaret Avenue, Terre Haute, Indiana 47808
Permit Number: 167-27351-00114
Reviewer: Jack Harmon

Note: Since the emissions from the gasoline fuel transfer and dispensing operation are minimal, the limited emissions are equal to the unlimited emissions.

To calculate evaporative emissions from the gasoline dispensing fuel transfer and dispensing operation handling emission factors from AP-42 Table 5.2-7 were used. The total potential emission of VOC is as follows:

$$\begin{aligned} \text{Gasoline Throughput} &= 0 \text{ gallons/day} \\ &= 0.0 \text{ kgal/yr} \end{aligned}$$

Volatile Organic Compounds

Emission Source	Emission Factor (lb/kgal of throughput)	PTE of VOC (tons/yr)*
Filling storage tank (balanced submerged filling)	0.3	0.00
Tank breathing and emptying	1.0	0.00
Vehicle refueling (displaced losses - controlled)	1.1	0.00
Spillage	0.7	0.00
Total		0.00

Hazardous Air Pollutants

Worst Case Total HAP Content of VOC solvent (weight %)* =	26.08%	
Worst Case Single HAP Content of VOC solvent (weight %)* =	9.0%	Xylenes
Limited PTE of Total HAPs (tons/yr) =	0.00	
Limited PTE of Single HAP (tons/yr) =	0.00	Xylenes

Methodology

The gasoline throughput was provided by the source.

Gasoline Throughput (kgal/yr) = [Gasoline Throughput (lbs/day)] * [365 days/yr] * [kgal/1000 gal]

PTE of VOC (tons/yr) = [Gasoline Throughput (kgal/yr)] * [Emission Factor (lb/kgal)] * [ton/2000 lb]

PTE of Total HAPs (tons/yr) = [Worst Case Total HAP Content of VOC solvent (weight %)] * [PTE of VOC (tons/yr)]

PTE of Single HAP (tons/yr) = [Worst Case Single HAP Content of VOC solvent (weight %)] * [PTE of VOC (tons/yr)]

*Source: Petroleum Liquids. Potter, T.L. and K.E. Simmons. 1998. Total Petroleum Hydrocarbon Criteria Working Group Series, Volume 2.

Composition of Petroleum Mixtures. The Association for Environmental Health and Science. Available on the Internet at:

<http://www.aehs.com/publications/catalog/contents/tph.htm>

Abbreviations

VOC = Volatile Organic Compounds

PTE = Potential to Emit

Appendix A: Emissions Calculations
Fuel Equivalency Calculations
Fuel Combustion Units with Maximum Capacity > 100 MMBtu/hr

Company Name: Wabash Valley Asphalt, LLC
Address City IN Zip: 5600 East Margaret Avenue, Terre Haute, Indiana 47808
Permit Number: 167-27351-00114
Pit ID: 167-00114
Reviewer: Jack Harmon

*Note: these equivalencies are related back to natural gas (assumed to be the predominant fuel used at this source).

Fuel Type	SO2 Equivalency					NOx Equivalency				
	Limited Sulfur Content	Limited Sulfur Content Units	AP-42 Emission Factor	Emission Factor Units	Fuel Equivalency	Fuel Equivalency Units	AP-42 Emission Factor	Emission Factor Units	Fuel Equivalency	Fuel Equivalency Units
Natural Gas	NA	NA	0.6	lb/MMCF	1.0	MMCF natural gas / MMCF natural gas	190	lb/MMCF	1.0	MMCF natural gas / MMCF natural gas
No. 2 Fuel Oil	0.482	% by weight	75.67	lb/kgal	126.1	MMCF natural gas / 1000 gal No. 2 fuel oil	24.0	lb/kgal	0.1263	MMCF natural gas / 1000 gal No. 2 fuel oil
No. 4 Fuel Oil	0.540	% by weight	81.00	lb/kgal	135.0	MMCF natural gas / 1000 gal No. 4 fuel oil	47.0	lb/kgal	0.247	MMCF natural gas / 1000 gal No. 4 fuel oil
Residual (No. 5 or No. 6) Fuel Oil	0.00	% by weight	0.00	lb/kgal	0.0	MMCF natural gas / 1000 gal residual (No. 5 or No. 6) fuel oil	47.0	lb/kgal	0.247	MMCF natural gas / 1000 gal residual (No. 5 or No. 6) fuel oil
Propane	0.00	gr/100 ft3 sulfur	0.000	lb/kgal	0.0000	MMCF natural gas / 1000 gal propane	19.0	lb/kgal	0.1000	MMCF natural gas / 1000 gal propane
Butane	0.00	gr/100 ft3 sulfur	0.0000	lb/kgal	0.0000	MMCF natural gas / 1000 gal butane	21.0	lb/kgal	0.1105	MMCF natural gas / 1000 gal butane
Waste Oil	0.0	% by weight	0.00	lb/kgal	0.0	MMCF natural gas / 1000 gal waste oil	19.0	lb/kgal	0.1000	MMCF natural gas / 1000 gal waste oil
Diesel Engine Oil	NA	NA	40.6	lb/kgal	67.7	MMCF natural gas / 1000 gal diesel engine oil	617.4	lb/kgal	3.249	MMCF natural gas / 1000 gal diesel engine oil

Methodology

Fuel Equivalency = [AP-42 Emission Factor for any fuel type (lb/kgal)] / [AP-42 Emission Factor for Natural Gas (lb/MMCF)]

Sources of AP-42 Emission Factors for fuel combustion:

- Natural Gas (boiler > 100 MMBtu/hr): AP-42 Chapter 1.4 (dated 7/98), Tables 1.4-1 and 1.4-2
- No. 2, No. 4, and residual fuel oil (industrial boiler > 100 MMBtu/hr): AP-42 Chapter 1.3 (dated 9/98), Table 1.3-1
- Propane and Butane (industrial boiler 10 to 100 MMBtu/hr): AP-42 Chapter 1.5 (dated 10/96), Table 1.5-1
- Waste Oil (small boiler): AP-42 Chapter 1.11 (dated 10/96), Table 1.11-2
- Diesel Engine Oil: AP-42 Chapter 3.3 (dated 10/96), Table 3.3-1

Appendix A: Emissions Calculations
Fuel Equivalency Calculations
Fuel Combustion Units with Maximum Capacity > 100 MMBtu/hr

Company Name: Wabash Valley Asphalt, LLC
Address City IN Zip: 5600 East Margaret Avenue, Terre Haute, Indiana 47808
Permit Number: 167-27351-00114
Plt ID: 167-00114
Reviewer: Jack Harmon

*Note: these equivalencies are related back to the No. 2 Fuel Oil (assumed to be the predominant fuel used at this source).

Fuel Type	SO2 Equivalency						NOx Equivalency			
	Limited Sulfur Content	Limited Sulfur Content Units	AP-42 Emission Factor	Emission Factor Units	Fuel Equivalency	Fuel Equivalency Units	AP-42 Emission Factor	Emission Factor Units	Fuel Equivalency	Fuel Equivalency Units
Natural Gas	NA	NA	0.6	lb/MMCF	126.1	MMCF natural gas / 1000 gal No. 2 fuel oil	190	lb/MMCF	0.126	MMCF natural gas / 1000 gal No. 2 fuel oil
No. 2 Fuel Oil	0.482	% by weight	75.67	lb/kgal	1.00	gal No. 2 fuel oil / gal No. 2 fuel oil	24.0	lb/kgal	1.00	gal No. 2 fuel oil / gal No. 2 fuel oil
No. 4 Fuel Oil	0.540	% by weight	81.00	lb/kgal	0.93	gal No. 4 fuel oil / gal No. 2 fuel oil	47.0	lb/kgal	0.51	gal No. 4 fuel oil / gal No. 2 fuel oil
Residual (No. 5 or No. 6) Fuel Oil	0.00	% by weight	0.00	lb/kgal	#DIV/0!	gal residual (No. 5 or No. 6) fuel oil / gal No. 2 fuel oil	47.0	lb/kgal	0.51	gal residual (No. 5 or No. 6) fuel oil / gal No. 2 fuel oil
Propane	0.00	gr/100 ft3 sulfur	0.000	lb/kgal	#DIV/0!	gal propane / gal No. 2 fuel oil	19.0	lb/kgal	1.26	gal propane / gal No. 2 fuel oil
Butane	0.00	gr/100 ft3 sulfur	0.0000	lb/kgal	#DIV/0!	gal butane / gal No. 2 fuel oil	21.0	lb/kgal	1.14	gal butane / gal No. 2 fuel oil
Waste Oil	0.0	% by weight	0.00	lb/kgal	#DIV/0!	gal waste oil / gal No. 2 fuel oil	19.0	lb/kgal	1.26	gal waste oil / gal No. 2 fuel oil
Diesel Engine Oil	NA	NA	40.6	lb/kgal	1.86	gal diesel engine oil / gal No. 2 fuel oil	617.4	lb/kgal	0.039	gal diesel engine oil / gal No. 2 fuel oil

Methodology

Fuel Equivalency = [AP-42 Emission Factor for No. 2 fuel oil (lb/kgal)] / [AP-42 Emission Factor for any fuel type (lb/kgal or lb/MMCF)]

Sources of AP-42 Emission Factors for fuel combustion:

Natural Gas (boiler > 100 MMBtu/hr): AP-42 Chapter 1.4 (dated 7/98), Tables 1.4-1 and 1.4-2

No. 2, No.4, and residual fuel oil (industrial boiler > 100 MMBtu/hr): AP-42 Chapter 1.3 (dated 9/98), Table 1.3-1

Propane and Butane (industrial boiler 10 to 100 MMBtu/hr): AP-42 Chapter 1.5 (dated 10/96), Table 1.5-1

Waste Oil (small boiler): AP-42 Chapter 1.11 (dated 10/96), Table 1.11-2

Diesel Engine Oil: AP-42 Chapter 3.3 (dated 10/96), Table 3.3-1

Appendix A: Emissions Calculations
Fuel Equivalency Calculations
Fuel Combustion Units with Maximum Capacity > 100 MMBtu/hr

Company Name: Wabash Valley Asphalt, LLC
Address City IN Zip: 5600 East Margaret Avenue, Terre Haute, Indiana 47808
Permit Number: 167-27351-00114
Plt ID: 167-00114
Reviewer: Jack Harmon

*Note: these equivalencies are related back to the No. 4 Fuel Oil (assumed to be the predominant fuel used at this source).

Fuel Type	SO2 Equivalency						NOx Equivalency			
	Limited Sulfur Content	Limited Sulfur Content Units	AP-42 Emission Factor	Emission Factor Units	Fuel Equivalency	Fuel Equivalency Units	AP-42 Emission Factor	Emission Factor Units	Fuel Equivalency	Fuel Equivalency Units
Natural Gas	NA	NA	0.6	lb/MMCF	135.0	MMCF natural gas / 1000 gal No. 4 fuel oil	190	lb/MMCF	0.25	MMCF natural gas / 1000 gal No. 4 fuel oil
No. 2 Fuel Oil	0.482	% by weight	75.67	lb/kgal	1.07	gal No. 2 fuel oil / gal No. 4 fuel oil	24.0	lb/kgal	1.96	gal No. 2 fuel oil / gal No. 4 fuel oil
No. 4 Fuel Oil	0.540	% by weight	81.00	lb/kgal	1.00	gal No. 4 fuel oil / gal No. 4 fuel oil	47.0	lb/kgal	1.00	gal No. 4 fuel oil / gal No. 4 fuel oil
Residual (No. 5 or No. 6) Fuel Oil	0.00	% by weight	0.00	lb/kgal	#DIV/0!	gal residual (No. 5 or No. 6) fuel oil / gal No. 4 fuel oil	47.0	lb/kgal	1.00	gal residual (No. 5 or No. 6) fuel oil / gal No. 4 fuel oil
Propane	0.00	gr/100 ft3 sulfur	0.000	lb/kgal	#DIV/0!	gal propane / gal No. 4 fuel oil	19.0	lb/kgal	2.47	gal propane / gal No. 4 fuel oil
Butane	0.00	gr/100 ft3 sulfur	0.0000	lb/kgal	#DIV/0!	gal butane / gal No. 4 fuel oil	21.0	lb/kgal	2.24	gal butane / gal No. 4 fuel oil
Waste Oil	0.0	% by weight	0.00	lb/kgal	#DIV/0!	gal waste oil / gal No. 4 fuel oil	19.0	lb/kgal	2.47	gal waste oil / gal No. 4 fuel oil
Diesel Engine Oil	NA	NA	40.6	lb/kgal	2.00	gal diesel engine oil / gal No. 4 fuel oil	617.4	lb/kgal	0.076	gal diesel engine oil / gal No. 4 fuel oil

Methodology

Fuel Equivalency = [AP-42 Emission Factor for No. 4 fuel oil (lb/kgal)] / [AP-42 Emission Factor for any fuel type (lb/kgal or lb/MMCF)]

Sources of AP-42 Emission Factors for fuel combustion:

- Natural Gas (boiler > 100 MMBtu/hr): AP-42 Chapter 1.4 (dated 7/98), Tables 1.4-1 and 1.4-2
- No. 2, No.4, and residual fuel oil (industrial boiler > 100 MMBtu/hr): AP-42 Chapter 1.3 (dated 9/98), Table 1.3-1
- Propane and Butane (industrial boiler 10 to 100 MMBtu/hr): AP-42 Chapter 1.5 (dated 10/96), Table 1.5-1
- Waste Oil (small boiler): AP-42 Chapter 1.11 (dated 10/96), Table 1.11-2
- Diesel Engine Oil: AP-42 Chapter 3.3 (dated 10/96), Table 3.3-1



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 Conley
Wabash Valley Asphalt Company, LLC.
POB 8297
Terre Haute, IN 47808

DATE: August 7, 2009

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

SUBJECT: Final Decision
FESOP
167-27351-00114

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:
James Burdick, Responsible Official
OAQ Permits Branch Interested Parties List

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178, or toll-free at 1-800-451-6027 (ext. 3-0178), and ask to speak to the permit reviewer who prepared the permit. If you think you have received this document in error, please contact Joanne Smiddie-Brush of my staff at 1-800-451-6027 (ext 3-0185), or via e-mail at jbrush@idem.IN.gov.

Final Applicant Cover letter.dot 11/30/07



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

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

August 7, 2009

TO: Vigo 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: Wabash Valley Asphalt Company
Permit Number: 167-27351-00114

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	DPABST 8/7/2009 Wabash Valley Asphalt Company, LLC 167-27351-00114 (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	Handling 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 Conley Wabash Valley Asphalt Company, LLC PO Box 8297 Terre Haute IN 47808 (Source CAATS) (CONFIRM DELIVERY)									
2		James L Burdick President Wabash Valley Asphalt Company, LLC PO Box 8297 Terre Haute IN 47808 (RO CAATS)									
3		Mr. Charles L. Berger Berger & Berger, Attorneys at Law 313 Main Street Evansville IN 47700 (Affected Party)									
4		Vigo County Board of Commissioners County Annex, 121 Oak Street Terre Haute IN 47807 (Local Official)									
5		Terre Haute City Council and Mayors Office 17 Harding Ave Terre Haute IN 47807 (Local Official)									
6		Vigo County Health Department 147 Oak Street Terre Haute IN 47807 (Health Department)									
7		Vigo Co Public Library 1 Library Square Terre Haute IN 47807-3609 (Library)									
8		Mr. James Burdick Wabash Valley Asphalt P.O. Box 8297 Terre Haute IN 47808 (Affected Party)									
9		J.P. Roehm PO Box 303 Clinton IN 47842 (Affected Party)									
10		George Needham Vigo County Air Pollution Control 103 South Third St. Terre Haute IN 47807 (Local Official)									
11											
12											
13											
14											
15											

Total number of pieces Listed by Sender	Total number of Pieces Received at Post Office	Postmaster, Per (Name of Receiving employee)	The full declaration of value is required on all domestic and international registered mail. The maximum indemnity payable for the reconstruction of nonnegotiable documents under Express Mail document reconstructing insurance is \$50,000 per piece subject to a limit of \$50, 000 per occurrence. The maximum indemnity payable on Express mil merchandise insurance is \$500. The maximum indemnity payable is \$25,000 for registered mail, sent with optional postal insurance. See Domestic Mail Manual R900, S913, and S921 for limitations of coverage on inured and COD mail. See International Mail Manual for limitations o coverage on international mail. Special handling charges apply only to Standard Mail (A) and Standard Mail (B) parcels.
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