



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: March 31, 2008

RE: Brooks Construction Company / 141-25539-00549

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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Steve Koble
Brooks Construction Company
727 S. Beiger Street
Mishawaka, IN 46544

March 31, 2008

Re: F141-25539-00549
First Significant Revision to
F141-17410-00549

Dear Mr. Koble:

Brooks Construction Company was issued a Federally Enforceable State Operating Permit (FESOP) No. F141-17410-00549 on September 22, 2003, for a stationary drum hot mix asphalt plant located at 727 S. Beiger Street, Mishawaka. On November 14, 2007, the Office of Air Quality (OAQ) received an application from the source requesting to use waste oil as a backup fuel in the aggregate dryer burner. The attached Technical Support Document (TSD) provides additional explanation of the changes to the source/permit. Pursuant to the provisions of 326 IAC 2-8-11.1, these changes to the permit are required to be reviewed in accordance with the Significant Permit Revision (SPR) procedures of 326 IAC 2-8-11.1(f). Pursuant to the provisions of 326 IAC 2-8-11.1, a significant permit revision to this permit is hereby approved as described in the attached Technical Support Document (TSD).

Pursuant to 326 IAC 2-8-11.1, this permit shall be revised by incorporating the significant permit revision into the permit. All other conditions of the permit shall remain unchanged and in effect. Attached please find the entire revised permit.

This decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21.5-3-5. If you have any questions on this matter, please contact Rebecca Jacobs, of my staff, at 317-234-5378 or 1-800-451-6027, and ask for extension 4-5378.

Sincerely/Original Signed By:

Matthew Stuckey, Chief
Permits Branch
Office of Air Quality

Attachments: Technical Support Document and revised permit

MS/rjj

cc: File – St. Joseph County
St. Joseph County Health Department
U.S. EPA, Region V
Air Compliance Section
IDEM Northern Regional Office
Compliance Data Section
Technical Support and Modeling
Permits Administrative and Development
Billing, Licensing and Training Section



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FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP) OFFICE OF AIR QUALITY

Brooks Construction Co., Inc.
727 S. Beiger Street
Mishawaka, Indiana 46544

(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.

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.

Operation Permit No.: F 141-17410-00549	
Issued by: Original signed by Paul Dubenetzky Paul Dubenetzky, Branch Chief Office of Air Quality	Issuance Date: September 22, 2003 Expiration Date: September 22, 2008

First Administrative Amendment Permit Revision No. F 141-19934-00549, issued on September 27, 2004

Operation Permit No.: F 141-25539-00549	
Issued by/Original Signed By: Matthew Stuckey, Chief Permits Branch Office of Air Quality	Issuance Date: March 31, 2008 Expiration Date: September 22, 2008



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Effective Date of the Permit

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Effective Date of the Permit

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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 hot mix asphalt plant.

Source Address: 727 S. Beiger Street, Mishawaka, Indiana 46544
Mailing Address: P.O. Box 9560, Fort Wayne, Indiana 46899
General Source Phone: (260) 478-1990
SIC Code: 2951
Source Location Status: St. Joseph
Attainment for all criteria pollutants
Source Status: Federally Enforceable State Operating Permit (FESOP)
Minor Source, under PSD Rules;
Minor Source, Section 112 of the Clean Air Act

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

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

- (a) One (1) drum dryer/mixer, constructed after June 11, 1973, identified as Emissions Unit No. 2, with a maximum capacity of 300 tons per hour, equipped with one (1) 92.5 MMBtu/hr natural gas-fired burner, using No. 2 distillate fuel oil, and refinery blend fuel oil, and waste oil as back-up fuels, controlled by one (1) baghouse with a knockout box, exhausting to Stack SV1.
- (b) One (1) drum mixer, exhausting through the knockout box and baghouse and stack SV1, capacity: 300 tons of hot mix asphalt per hour.
- (c) Two (2) liquid asphalt storage tanks, identified as 11A and 11B, heated by an insignificant 1.5 million British thermal units per hour oil heater, capacity: 20,000 gallons, each.

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, as defined in 326 IAC 2-7-1(21):

- (a) Natural gas-fired combustion sources with heat input equal to or less than ten million (10,000,000) British thermal units per hour (1.5 million British thermal units per hour oil heater).
- (b) Paved and unpaved roads and parking lots with public access.

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) for a Federally Enforceable State Operating Permit (FESOP).

A.5 Prior Permits Superseded [326 IAC 2-1.1-9.5]

- (a) All terms and conditions of previous permits issued pursuant to permitting programs approved into the state implementation plan have been either
 - (1) incorporated as originally stated,

(2) revised, or

(3) deleted

by this permit.

(b) All previous registrations and permits are superseded by this permit.

SECTION B GENERAL CONDITIONS

B.1 Permit No Defense [IC 13]

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.

B.2 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.3 Permit Term [326 IAC 2-8-4(2)] [326 IAC 2-1.1-9.5]

This permit is issued for a fixed term of five (5) 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.

B.4 Enforceability [326 IAC 2-8-6]

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 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.6 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.7 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.8 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 the "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.9 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.10 Compliance with Permit Conditions [326 IAC 2-8-4(5)(A)] [326 IAC 2-8-4(5)(B)]

(a) The Permittee must comply with all conditions of this permit. Noncompliance with any

provisions of this permit is grounds for:

- (1) Enforcement action;
 - (2) Permit termination, revocation and reissuance, or modification; and
 - (3) Denial of a permit renewal application.
- (b) 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.
- (c) 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.

B.11 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.
- (c) An authorized individual is defined at 326 IAC 2-1.1-1(1).

B.12 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. The initial certification shall cover the time period from the date of final permit issuance through December 31 of the same year. All subsequent certifications shall cover the time period from January 1 to December 31 of the previous year, and shall be submitted in letter form no later than April 15 of each year to:
- Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015
- (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, IDEM, OAQ, may require to determine the compliance status of the source.

The notification which shall be submitted by the Permittee does require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).

B.13 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 prepare and maintain Preventive Maintenance Plans (PMPs) within ninety (90) days after issuance of this permit, including the following information on each facility:
 - (1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;
 - (2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and
 - (3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

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

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

The PMP extension notification does not require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).

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

B.14 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 limita-

tion if the affirmative defense of an emergency is demonstrated through properly signed, contemporaneous operating logs or other relevant evidence that describes 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 Northern 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 No.: 1-800-451-6027 (ask for Office of Air Quality, Compliance Section)
or,
Telephone No.: 317-233-5674 (ask for Compliance Section)
Facsimile No.: 317-233-5967
Northern Regional Office: 574-245-4870, facsimile 574-245-4877

- (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 Branch, Office of Air Quality
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

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 the "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) 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) Permittee shall include all emergencies in the Quarterly Deviation and Compliance Monitoring Report.

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 Provision), the probable cause of such deviations, and any response steps or preventive measures taken shall be reported to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

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 need to be included in this report.

The Quarterly Deviation and Compliance Monitoring Report does require the certification by the "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]

~~As of 11/19/2019, the following information is no longer applicable to this permit: 326 IAC 2-8-4(5)(C), 326 IAC 2-8-7(a), and 326 IAC 2-8-8.~~

- (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 the "authorized individual" as defined by 326 IAC 2-1.1-1(1).

Request for renewal shall be submitted to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue, P.O. Box 6015
Indianapolis, IN 46206-6015

- (b) Timely Submittal of Permit Renewal [326 IAC 2-8-3]
 - (1) A timely renewal application is one that is:
 - (A) Submitted at least nine (9) months prior to the date of the expiration of this permit; and
 - (B) 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.
 - (2) If IDEM, OAQ, upon receiving a timely and complete 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.
- (c) Right to Operate After Application for Renewal [326 IAC 2-8-9]

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 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
Permits Branch, Office of Air Quality
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

Any such application shall be certified by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (c) The Permittee may implement the administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-8-10(b)(3)]
- (d) No permit amendment or modification is required for the addition, operation or removal of a nonroad engine, as defined in 40 CFR 89.2.

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 this source that are described in 326 IAC 2-8-15(b) through (d), without 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 emissions allowable under 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
Permits Branch, Office of Air Quality
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

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 which document, on a rolling five (5) year basis, all such changes and emissions trading that are subject to 326 IAC 2-8-15(b) through (d) and makes such records available, upon reasonable request, to 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 increases and decreases in emissions in 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.

B.20 Permit Revision Requirement [326 IAC 2-8-11.1]

A modification, construction, or reconstruction is governed by the requirements of 326 IAC 2 and 326 IAC 2-8-11.1.

B.21 Inspection and Entry [326 IAC 2-8-5(a)(2)] [IC 13-14-2-2] [IC 13-30-3-1] [IC 13-17-3-2]

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
Permits Branch, Office of Air Quality
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

The application which shall be submitted by the Permittee does require the certification by the

"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 317-233-4320 (ask for OAQ, I/M & Billing Section), to determine the appropriate permit fee.

SECTION C

SOURCE OPERATION CONDITIONS

Entire Source

Emissions 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. This limitation shall also make the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable;
 - (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 (Prevention of Significant Deterioration (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.
- (e) The Permittee shall not operate this source concurrently with any other Brooks Construction Co., Inc., asphalt plant at the same location. The Permittee shall request a permit revision and obtain IDEM, OAQ, approval prior to any Brooks Construction Co., Inc., plant co-locating with this source.

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 thirty percent (30%) 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(3)]

The Permittee shall not operate an incinerator or incinerate any waste or refuse except as provided in 326 IAC 4-2 and in 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 plan submitted on July 8, 2003. The plan is included as Attachment A.

C.7 Operation of Equipment [326 IAC 2-8-5(a)(4)]

Except as otherwise provided by statute, rule or in this permit, all air pollution control equipment listed in this permit and used to comply with an applicable requirement shall be operated at all times that the emission units vented to the control equipment are in operation.

C.8 Stack Height [326 IAC 1-7]

The Permittee shall comply with the applicable provisions of 326 IAC 1-7 (Stack Height Provisions), for all exhaust stacks through which a potential (before controls) of twenty-five (25) tons per year or more of particulate matter or sulfur dioxide is emitted.

C.9 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
Asbestos Section, Office of Air Quality
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

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 the "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 Accredited 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 Accredited Asbestos Inspector to thoroughly inspect the affected portion of the facility for the presence of asbestos. The requirement to use an Indiana Accredited Asbestos inspector is not federally enforceable.

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

C.10 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 Data Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

no later than thirty-five (35) days prior to the intended test date. The protocol submitted by the Permittee does not require certification by the "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 the "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 source 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.11 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.12 Compliance Monitoring [326 IAC 2-8-4(3)] [326 IAC 2-8-5(a)(1)]

Unless otherwise specified in this permit, all monitoring and recordkeeping requirements not already legally required shall be implemented within ninety (90) days of permit issuance. 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 Branch, Office of Air Quality
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

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

The notification which shall be submitted by the Permittee does require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).

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

C.13 Monitoring Methods [326 IAC 3] [40 CFR 60] [40 CFR 63]

Any monitoring or testing performed 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.14 Pressure Gauge and Other Instrument Specifications [326 IAC 2-1.1-11] [326 IAC 2-8-4(3)] [326 IAC 2-8-5(1)]

- (a) Whenever a condition in this permit requires the measurement of pressure drop across any part of the unit or its control device, the gauge employed shall have a scale such that the expected normal reading shall be no less than twenty percent (20%) of full scale and be accurate within plus or minus two percent ($\pm 2\%$) of full scale reading.
- (b) Whenever a condition in this permit requires the measurement of a temperature, flow rate, or pH level, the instrument employed shall have a scale such that the expected normal reading shall be no less than twenty percent (20%) of full scale and be accurate within plus or minus two percent ($\pm 2\%$) of full scale reading.
- (c) The Preventive Maintenance Plan for the pH meter shall include calibration using known standards. The frequency of calibration shall be adjusted such that the typical error found at calibration is less than one pH point.
- (d) The Permittee may request the IDEM, OAQ approve the use of a pressure gauge or other

instrument that does not meet the above specifications provided the Permittee can demonstrate an alternative pressure gauge or other instrument specification will adequately ensure compliance with permit conditions requiring the measurement of pressure drop or other parameters.

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

C.15 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 prepare written emergency reduction plans (ERPs) consistent with safe operating procedures.

(b) These ERPs shall be submitted for approval to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

within 180 days from the date on which this source commences operation).

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

(c) If the ERP is disapproved by IDEM, OAQ, the Permittee shall have an additional thirty (30) days to resolve the differences and submit an approvable ERP.

(d) These ERPs shall state those actions that will be taken, when each episode level is declared, to reduce or eliminate emissions of the appropriate air pollutants.

(e) Said ERPs shall also identify the sources of air pollutants, the approximate amount of reduction of the pollutants, and a brief description of the manner in which the reduction will be achieved.

(f) 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.16 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 source must comply with the applicable requirements of 40 CFR 68.

C.17 Compliance Response Plan - Preparation, Implementation, Records, and Reports [326 IAC 2-8-4] [326 IAC 2-8-5]

(a) The Permittee is required to prepare a Compliance Response Plan (CRP) for each compliance monitoring condition of this permit. A CRP shall be submitted to IDEM, OAQ upon request. The CRP shall be prepared within ninety (90) days after issuance of this permit by the Permittee, supplemented from time to time by the Permittee, maintained on site, and is comprised of:

(1) Reasonable response steps that may be implemented in the event that a response step is needed pursuant to the requirements of Section D of this permit; and an expected time frame for taking reasonable response steps.

(2) If, at any time, the Permittee takes reasonable response steps that are not set forth in the Permittee's current Compliance Response Plan and the Permittee documents

such response in accordance with subsection (e) below, the Permittee shall amend its Compliance Response Plan to include such response steps taken.

- (b) For each compliance monitoring condition of this permit, reasonable response steps shall be taken when indicated by the provisions of that compliance monitoring condition as follows:
 - (1) Reasonable response steps shall be taken as set forth in the Permittee's current Compliance Response Plan; or
 - (2) If none of the reasonable response steps listed in the Compliance Response Plan is applicable or responsive to the excursion, the Permittee shall devise and implement additional response steps as expeditiously as practical. Taking such additional response steps shall not be considered a deviation from this permit so long as the Permittee documents such response steps in accordance with this condition.
 - (3) If the Permittee determines that additional response steps would necessitate that the emissions unit or control device be shut down, and it will be 10 days or more until the unit or device will be shut down, then the permittee shall promptly notify the IDEM, OAQ of the expected date of the shut down, the status of the applicable compliance monitoring parameter with respect to normal, and the results of the actions taken up to the time of notification.
 - (4) Failure to take reasonable response steps shall be considered a deviation from the permit.
- (c) The Permittee is not required to take any further response steps for any of the following reasons:
 - (1) A false reading occurs due to the malfunction of the monitoring equipment and prompt action was taken to correct the monitoring equipment.
 - (2) The Permittee has determined that the compliance monitoring parameters established in the permit conditions are technically inappropriate, has previously submitted a request for an administrative amendment to the permit, and such request has not been denied.
 - (3) An automatic measurement was taken when the process was not operating.
 - (4) The process has already returned or is returning to operating within "normal" parameters and no response steps are required.
- (d) When implementing reasonable steps in response to a compliance monitoring condition, if the Permittee determines that an exceedance of an emission limitation has occurred, the Permittee shall report such deviations pursuant to Section B-Deviations from Permit Requirements and Conditions.
- (e) The Permittee shall record all instances when, in accordance with Section D, response steps are taken. In the event of an emergency, the provisions of 326 IAC 2-8-12 (Emergency Provisions) requiring prompt corrective action to mitigate emissions shall prevail.
- (f) Except as otherwise provided by a rule or provided specifically in Section D, all monitoring as required in Section D shall be performed when the emission unit is operating, except for time necessary to perform quality assurance and maintenance activities.

C.18 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 and 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 the "authorized individual" as defined by 326 IAC 2-1.1-1(1).

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

C.19 General Recordkeeping 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 recordkeeping requirements not already legally required shall be implemented within ninety (90) days of permit issuance.

C.20 General Reporting Requirements [326 IAC 2-8-4(3)(C)] [326 IAC 2-1.1-11]

- (a) The source 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 the "authorized individual" as defined by 326 IAC2-1.1-1(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 Branch, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015
- (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 the "authorized individual" as defined by 326 IAC 2-1.1-1(1).

- (e) The first report covered the period commencing on the date of issuance of the original FESOP and ended on the last day of the reporting period. All subsequent reporting periods shall be based on calendar years.

Stratospheric Ozone Protection

C.21 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

FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-8-4(10)]:

- (a) One (1) drum dryer/mixer, constructed after June 11, 1973, identified as Emissions Unit No. 2, with a maximum capacity of 300 tons per hour, equipped with one (1) 92.5 MMBtu/hr natural gas-fired burner, using No. 2 distillate fuel oil, refinery blend fuel oil, and waste oil as back-up fuels, controlled by one (1) baghouse with a knockout box, exhausting to Stack SV1.
- (b) One (1) drum mixer, exhausting through the knockout box and baghouse and stack SV1, capacity: 300 tons of hot mix asphalt per hour.
- (c) Two (2) liquid asphalt storage tanks, identified as 11A and 11B, heated by an insignificant 1.5 million British thermal units per hour oil heater, capacity: 20,000 gallons, each.

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

THIS SECTION OF THE PERMIT IS BEING ISSUED UNDER THE PROVISIONS OF 326 IAC 2-5.1 AND 326 IAC 2-8-11.1, WITH CONDITIONS LISTED BELOW.

Construction Conditions

General Construction Conditions

D.1.1 Permit No Defense

This permit to construct does not relieve the Permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.

Effective Date of the Permit

D.1.2 Effective Date of the Permit [IC13-15-5-3]

Pursuant to IC 13-15-5-3, this section of this permit becomes effective upon its issuance.

D.1.3 Modification to Construction Conditions [326 IAC 2]

All requirements of these construction conditions shall remain in effect unless modified in a manner consistent with procedures established for revisions pursuant to 326 IAC 2.

Operation Conditions

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

D.1.4 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 facilities described in this section except when otherwise specified in 40 CFR 60 Subpart I and 40 CFR 60 Subpart Kb.

D.1.5 Volatile Organic Compounds (VOC) [326 IAC 2-2] [326 IAC 2-8-4] [326 IAC 8-5-2]

- (a) The VOC solvent used as diluent in the liquid binder used in cold mix asphalt production from the plant shall be limited such that less than 50.0 tons of VOC is emitted per twelve (12) consecutive month period, with compliance determined at the end of each month. This shall be achieved by limiting the total VOC solvent of any one selected binder as follows (when more than one (1) type of binder is used, the formula in paragraph 6 shall be applied):

- (1) Cutback asphalt rapid cure liquid binder usage shall be limited to less than 52.63 tons of VOC solvent per twelve (12) consecutive month period rolled on a monthly basis.
- (2) Cutback asphalt medium cure liquid binder usage shall be limited to less than 71.43 tons of VOC solvent per twelve (12) consecutive month period rolled on a monthly basis.
- (3) Cutback asphalt slow cure liquid binder usage shall be limited to less than 200.0 tons of VOC solvent per twelve (12) consecutive month period rolled on a monthly basis.
- (4) Emulsified asphalt with solvent liquid binder usage shall be limited to less than 107.76 tons of VOC solvent per twelve (12) consecutive month period rolled on a monthly basis.
- (5) Other asphalt with solvent liquid binder shall be limited to less than 2000.0 tons of VOC solvent per twelve (12) consecutive month period rolled on a monthly basis.
- (6) The VOC solvent allotments in shall be adjusted when more than one (1) type of binder is used per twelve (12) month consecutive period, with compliance determined at the end of each month. In order to determine the tons of VOC emitted per each type of binder, use the following formula and divide the tons of VOC solvent used for each type of binder by the corresponding adjustment ratio listed in the table that follows.

$$\frac{\text{Tons of solvent contained in binder}}{\text{Adjustment ratio}} = \text{tons of VOC emitted}$$

Type of binder	adjustment ratio
cutback asphalt rapid cure	1.05
cutback asphalt medium cure	1.42
cutback asphalt slow cure	4.0
emulsified asphalt	2.16
other asphalt	40

- (7) Liquid binders used in the production of cold mix asphalt shall be defined as follows:
 - (A) Cut back asphalt rapid cure, containing a maximum of 25.3% VOC solvent by weight in the liquid binder, with 95% by weight of the VOC solvent evaporating.
 - (B) Cut back asphalt medium cure, containing a maximum of 28.6% VOC solvent by weight in the liquid binder, with 70% by weight of the VOC solvent evaporating.
 - (C) Cut back asphalt slow cure, containing a maximum of 20% VOC solvent by

weight in the liquid binder, with 25% by weight of the VOC solvent evaporating.

- (D) Emulsified asphalt with solvent, containing a maximum of 15% VOC solvent by weight in the liquid binder, with 46.4% by weight of the VOC solvent in the liquid blend evaporating. The percent oil distillate in emulsified asphalt with solvent liquid, as determined by ASTM, must be 7% or less of the total emulsion by volume.
- (E) Other asphalt with solvent binder, containing a maximum 25.9% VOC solvent by weight in the liquid binder, with 2.5% by weight of the VOC solvent evaporating.

This will limit the potential to emit VOC to 50.0 tons per year from VOC usage, and the total source potential to emit VOC to less than 100 tons per year, including combustion. Thus, this limit will satisfy the requirements of 326 IAC 2-8-4, FESOP, and ensure that the source is a minor source pursuant to 326 IAC 2-2, PSD.

- (b) Pursuant to 326 IAC 8-5-2, the Permittee shall not allow the use of asphalt emulsion containing more than seven percent (7%) oil distillate by volume of emulsion, except as used for the following purposes:
 - (1) penetrating prime coating;
 - (2) stockpile storage mix; and
 - (3) application during the months of November, December, January, February, and March.

D.1.6 Sulfur Dioxide (SO₂) [326 IAC 2-8-4] [326 IAC 7-1.1-1] [326 IAC 7-2-1]

Pursuant to 326 IAC 2-8-4, the SO₂ emissions from the dryer/mixer burner shall be limited as follows:

- (a) The total usage of refinery blend fuel oil and refinery blend fuel oil equivalents for the dryer/mixer burner and all other fuel combustion equipment shall be limited to less than 1,320,000 gallons or equivalent per twelve (12) consecutive month period, with compliance determined at the end of each month.

For the purpose of determining compliance with this limit:

- (1) Every 250 million cubic feet of natural gas shall be equivalent to one thousand (1000) gallons of refinery blend fuel oil. However, the natural gas usage shall in no case exceed 810.30 million cubic feet per twelve (12) consecutive month period.
 - (2) Every 2.11 gallons of No. 2 fuel oil shall be equivalent to one (1) gallon of refinery blend fuel oil. However, the No. 2 fuel oil usage shall in no case exceed 2,530,000 gallons per twelve (12) consecutive month period.
 - (3) Every 1.02 gallons of waste oil shall be equivalent to one (1) gallon of refinery blend fuel oil. However, the waste oil usage shall in no case exceed 750,000 gallons per twelve (12) consecutive month period.
- (b) The sulfur content of the No. 2 fuel oil shall not exceed 0.5% by weight.
 - (c) The sulfur content of the refinery blend fuel oil and waste oil each shall not exceed 1.0% by weight.

- (d) Pursuant to 326 IAC 7-1.1 (SO₂ Emissions Limitations), the SO₂ emissions from the dryer/mixer burner at the asphalt plant shall not exceed five-tenths (0.5) pound per million Btu heat input while combusting distillate oil (including No. 2 fuel oil).
- (e) Pursuant to 326 IAC 7-1.1 (Sulfur Dioxide Emission Limitations), sulfur dioxide emissions from the dryer/mixer burner shall be limited to 1.6 pounds per million Btu heat input or a sulfur content of less than or equal to 1.5% when using residual oil (including refinery blend fuel oil and waste oil).
- (f) Pursuant to 326 IAC 7-2-1, compliance shall be demonstrated on a calendar month average.

D.1.7 Particulate Matter (PM₁₀) [326 IAC 2-8-4] [326 IAC 2-2]

Pursuant to 326 IAC 2-8-4, the emissions of PM₁₀, CO, and VOC from the dryer/mixer shall be limited as follows:

- (a) The asphalt production rate shall be limited to less than 1,500,000 tons per twelve (12) consecutive month period with compliance determined at the end of each month.
- (b) PM₁₀ emissions from the dryer/mixer shall be limited to less than 0.05 pounds of PM₁₀ per ton of asphalt produced.
- (c) CO emissions from the dryer/mixer shall be limited to less than 0.130 pounds of CO per ton of asphalt produced.
- (d) VOC emissions from the dryer/mixer shall be limited to less than 0.032 pounds of VOC per ton of asphalt produced.

Compliance with these limits, combined with the potential to emit PM₁₀, CO, and VOC from all other emission units at this source, will render 326 IAC 2-7 (Part 70 Permit Program), and 326 IAC 2-2 (PSD), and 326 IAC 2-3 (Emission Offset) not applicable.

D.1.8 Particulate Matter (PM) [326 IAC 2-2] [40 CFR 60.92] [326 IAC 12-1] [326 IAC 6-1-2(a)]

In order to render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable, the source shall comply with the following:

- (a) The asphalt production rate shall be limited to less than 1,500,000 tons per twelve (12) consecutive month period with compliance determined at the end of each month.
- (b) PM emissions from the dryer/mixer shall be limited to less than 0.15 pounds of PM per ton of asphalt produced.
- (c) Pursuant to 40 CFR 60.92 and 326 IAC 12-1, the opacity of emissions from the aggregate dryer/ mixer stack (SV1) shall be less than twenty percent (20%).
- (d) Pursuant to 326 IAC 6-1-2(a), the PM emissions from the aggregate dryer/mixer shall not exceed 0.07 gram per dry standard cubic meter (0.03 grain per dry standard cubic foot). Compliance with this limit will also ensure that the plant is in compliance with the emission limitation of 90 milligrams per dry standard cubic meter (0.04 grains per dry standard cubic foot) pursuant to 40 CFR 60.92 and 326 IAC 12-1.

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

D.1.9 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 aggregate dryer and drum mixer and any control devices.

D.1.10 Hazardous Air Pollutants (HAP) [326 IAC 2-8-4][326 IAC 2-4.1]

Pursuant to 326 IAC 2-8-4, the following additional limits shall apply to the source:

- (a) The chlorine content of the waste oil used in the dryer/mixer burner all other fuel combustion equipment shall not exceed four tenths of a percent (0.40%) by weight.
- (b) The usage of waste oil used in the dryer/mixer burner all other fuel combustion equipment shall be limited to less than 750,000 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month.
- (c) The HCl emissions from the dryer/mixer burner shall be limited to less than 26.4 pounds of HCl per 1,000 gallons of waste oil burned.

Compliance with these limits, combined with the potential to emit HAP from all other emission units at this source, will limit the source-wide potential to emit HCl to less than 10 tons per year and combined HAPs to less than 25 tons per year and render 326 IAC 2-7 (Part 70) and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP)) not applicable.

Compliance Determination Requirements

D.1.11 Hydrogen Chloride (HCl) Emissions and Chlorine Content

In order to comply with Conditions D.1.9(a) and D.1.9(c), the Permittee shall demonstrate that the chlorine content of the fuel used for the dryer burner all other fuel combustion equipment does not exceed four tenths of a percent (0.40%) by weight, when operating on waste oil, by providing a vendor analysis of fuel delivered accompanied by a vendor certification.

D.1.12 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11] [40 CFR 60.93] [326 IAC 12]

- (a) Within 60 days after achieving the maximum production rate at which the aggregate dryer and mixer will be operated, but not later than 180 days after initial startup, in order to demonstrate compliance with Conditions D.1.7 and D.1.8, the Permittee shall perform PM and PM₁₀ testing of the aggregate 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. PM₁₀ includes filterable and condensable PM₁₀. Testing shall be conducted in accordance with Section C- Performance Testing.
- (b) Pursuant to 40 CFR 60.93, compliance with the PM standards in 40 CFR 60.92 shall be determined by using Method 5 to determine particulate concentration and Method 9 to determine opacity. When determining the particulate concentration, the sampling time and sampling volume for each run shall be at least 60 minutes and 0.90 dry standard cubic meter (31.8 dry standard cubic feet).

D.1.13 Sulfur Dioxide Emissions and Sulfur Content

Compliance shall be determined utilizing one of the following options.

- (a) Pursuant to 326 IAC 3-7-4, the Permittee shall demonstrate that the sulfur dioxide emissions do not exceed five-tenths (0.5) pounds per million British thermal unit heat input when operating on No. 2 distillate oil and that the sulfur dioxide emissions do not exceed 1.6 pounds per million Btu heat input when burning refinery blend fuel oil or waste oil by:
 - (1) Providing vendor analysis of fuel delivered, if accompanied by a vendor certification; or
 - (2) Analyzing the oil sample to determine the sulfur content of the oil via the procedures in 40 CFR 60, Appendix A, Method 19.
 - (A) Oil samples may be collected from the fuel tank immediately after the fuel tank is filled and before any oil is combusted; and
 - (B) If a partially empty fuel tank is refilled, a new sample and analysis would be required upon filling.
- (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.
- (c) In order to demonstrate compliance with Condition D.1.6, the Permittee shall demonstrate that weight percent sulfur dioxide in the fuels used does not exceed one half of a percent (0.5%) by weight when operating on No. 2 distillate oil and one percent (1.0%) by weight when operating on refinery blend distillate oil or waste oil using methods described in (a) or (b) of this condition.

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.

D.1.14 Particulate Matter (PM and PM₁₀)

In order to comply with Conditions D.1.7 and D.1.8, the knockout box and baghouse for the aggregate dryer/mixer shall be in operation and control emissions from the aggregate dryer/mixer at all times when the aggregate dryer/mixer is in operation.

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

D.1.15 Visible Emissions Notations

- (a) Visible emission notations of the conveyors, material transfer points and aggregate dryer/mixer stack (SV1) exhaust shall be performed once per shift during normal daylight operations when exhausting to the atmosphere. 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) The Compliance Response Plan for these units shall contain troubleshooting contingency and response steps for when an abnormal emission is observed. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports, shall be considered a violation of this permit.

D.1.16 Parametric Monitoring

- (a) The Permittee shall record the total static pressure drop across the baghouse used in conjunction with the aggregate dryer and drum mixer, at least once per shift when the aggregate dryer and drum mixer are in operation when venting to the atmosphere. When for any one reading, the pressure drop across the baghouse is outside the normal range of 2.0 and 10.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C- Compliance Response Plan - Preparation, Implementation, Records, and Reports. 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 - Compliance Response Plan -Preparation, Implementation, Records, and Reports, shall be considered a violation of this permit.
- (b) The Permittee shall record the inlet temperature to the baghouse used in conjunction with the aggregate dryer and drum mixer, at least once per shift when the aggregate dryer and drum mixer are in operation when venting to the atmosphere. When for any one reading, the inlet temperature to the baghouse is outside the normal range of 250 and 350 degrees Fahrenheit or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C- Compliance Response Plan -Preparation, Implementation, Records, and Reports. This is required to prevent overheating of the bags and to prevent low temperatures from mudding up the bags. A temperature 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 - Compliance Response Plan -Preparation, Implementation, Records, and Reports, shall be considered a violation of this permit.

The instruments used for determining the pressure and temperature shall comply with Section C - Pressure Gauge and Other Instruments Specifications, of this permit, shall be subject to approval by

IDEM, OAQ, and shall be calibrated at least once every six (6) months.

D.1.17 Baghouse Inspections

An inspection shall be performed each calendar quarter of all bags controlling the aggregate dryer and drum mixer when venting to the atmosphere. A baghouse inspection shall be performed within three (3) months of redirecting vents to the atmosphere and every three (3) months thereafter. Inspections are optional when venting to the indoors. Inspections required by this condition shall not be performed in consecutive months. All defective bags shall be replaced.

D.1.18 Broken or Failed Bag Detection

In the event that bag failure has been observed:

- (a) For multi-compartment units, the affected compartments will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if there are no visible emissions or if the event qualifies as an emergency and the Permittee satisfies the emergency provisions of this permit (Section B- Emergency Provisions). Within eight (8) business hours of the determination of failure, response steps according to the timetable described in the Compliance Response Plan shall be initiated. For any failure with corresponding response steps and timetable not described in the Compliance Response Plan, response steps shall be devised within eight (8) business hours of discovery of the failure and shall include a timetable for completion. Failure to take response steps in accordance with Section C - Compliance Response Plan -Preparation, Implementation, Records, and Reports, shall be considered a violation of this permit.
- (b) For single compartment baghouses, if failure is indicated by a significant drop in the baghouse's pressure readings with abnormal visible emissions or the failure is indicated by an opacity violation, or if bag failure is determined by other means, such as gas temperatures, flow rates, air infiltration, leaks, dust traces or triboflows, then failed units and the associated process will be shut down immediately until the failed units have 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).

D.1.19 Knockout Box Inspections

An inspection shall be performed each calendar quarter of the knockout box controlling the aggregate dryer/mixer when venting to the atmosphere. A knockout box inspection shall be performed within three months of redirecting vents to the atmosphere and every three months thereafter. Inspections are optional when venting to the indoors.

D.1.20 Knockout Box Failure Detection

In the event that knockout box failure has been observed:

Failed units and the associated process will be shut down immediately until the failed units have 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). Failure to take response steps in accordance with Section C - Compliance Response Plan -Preparation, Implementation, Records, and Reports, shall be considered a violation of this permit.

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

D.1.21 Record Keeping Requirements

- (a) To document compliance with Condition D.1.6, the Permittee shall maintain records in accordance with (1) through (4) below.
 - (1) Calendar dates covered in the compliance determination period;

- (2) 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, the natural gas fired boiler certification does require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1(1); and

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

- (3) The name of the fuel supplier; and
 - (4) A statement from the fuel supplier that certifies the sulfur content of the fuel oil, refinery blend fuel oil, and waste oil, and a statement from the fuel supplier that certifies the chlorine content of the waste oil.
- (b) To document compliance with Condition D.1.6, the Permittee shall keep records of the amount of each fuel used at the aggregate dryer burner. Records necessary to demonstrate compliance shall be available within 30 days of the end of each compliance period.
 - (c) To document compliance with Condition D.1.5, the Permittee shall maintain monthly records the amount and VOC content of each solvent used for emulsified asphalt. Records shall include purchase orders, invoices, and material safety data sheets (MSDS) necessary to verify the type and amount used.
 - (d) To document compliance with Condition D.1.15, the Permittee shall maintain records of visible emission notations of the conveyors, material transfer points and aggregate dryer and drum mixer stack (SV1) exhaust once per shift.
 - (e) To document compliance with Condition D.1.16, the Permittee shall maintain the following:
 - (1) Records of the total static pressure drop during normal operation once per shift when venting to the atmosphere.
 - (2) Records of the inlet temperature during normal operation once per shift when venting to the atmosphere.
 - (f) To document compliance with Conditions D.1.17 and D.1.19, the Permittee shall maintain records of the results of the inspections required under Conditions D.1.17 and D.1.19 and the dates the vents are redirected.
 - (g) The Permittee shall maintain records of any additional inspections prescribed by the Preventive Maintenance Plan.
 - (h) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.1.22 Record Keeping Requirements [40 CFR 60.116b][326 IAC 12-1]

The two (2) liquid asphalt storage tanks, identified as 11A and 11B, shall comply with the New Source Performance Standards (NSPS), 326 IAC 12 (40 CFR Part 60.116b only, Subpart Kb). 40 CFR Part 60.116b requires the Permittee to maintain accessible records showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel. Records shall be kept for the life of the storage tanks.

D.1.23 Reporting Requirements

A quarterly summary of the information to document compliance with Conditions D.1.5 and D.1.6(a) shall be submitted to the address 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 the “authorized individual” as defined by 326 IAC 2-1.1-1(1).

SECTION D.2

FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-8-4(10)]: Insignificant Activities

- (a) Natural gas-fired combustion sources with heat input equal to or less than ten million (10,000,000) British thermal units per hour (1.5 million British thermal units per hour oil heater).
- (b) Paved and unpaved roads and parking lots with public access.

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

THIS SECTION OF THE PERMIT IS BEING ISSUED UNDER THE PROVISIONS OF 326 IAC 2-5.1 AND 326 IAC 2-8-11.1, WITH CONDITIONS LISTED BELOW.

Construction Conditions

General Construction Conditions

D.2.1 Permit No Defense

This permit to construct does not relieve the Permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.

Effective Date of the Permit

D.2.2 Effective Date of the Permit [IC13-15-5-3]

Pursuant to IC 13-15-5-3, this section of this permit becomes effective upon its issuance.

D.2.3 Modification to Construction Conditions [326 IAC 2]

All requirements of these construction conditions shall remain in effect unless modified in a manner consistent with procedures established for revisions pursuant to 326 IAC 2.

Operation Conditions

There are no Operation Conditions specifically applicable to these activities.

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

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

Source Name: Brooks Construction Co., Inc.
Source Address: 727 S. Beiger Street, Mishawaka, Indiana 46544
Mailing Address: P.O. Box 9560, Fort Wayne, Indiana 46899
FESOP No.: 141-17410-00549

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:

Phone:

Date:

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE BRANCH
100 North Senate Avenue
MC 61-53 IGC-N 1003
Indianapolis, Indiana 46206-6015
Phone: 317-233-0178
Fax: 317-233-6865

**FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)
EMERGENCY OCCURRENCE REPORT**

Source Name: Brooks Construction Co., Inc.
Source Address: 727 S. Beiger Street, Mishawaka, Indiana 46544
Mailing Address: P.O. Box 9560, Fort Wayne, Indiana 46899
FESOP No.: 141-17410-00549

This form consists of 2 pages

Page 1 of 2

- This is an emergency as defined in 326 IAC 2-7-1(12)
- The Permittee must notify the Office of Air Quality (OAQ), within four (4) business hours (1-800-451-6027 or 317-233-0178, ask for Compliance Section); and
 - The Permittee must submit notice in writing or by facsimile within two (2) working days (Facsimile Number: 317-233-6865, and follow the other requirements of 326 IAC 2-7-16

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

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

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

Page 2 of 2

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

Form Completed by: _____

Title / Position: _____

Date: _____

Phone: _____

A certification is not required for this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF AIR QUALITY
 COMPLIANCE DATA SECTION**

FESOP Quarterly Report

Source Name: Brooks Construction Co., Inc.
 Source Address: 727 S. Beiger Street, Mishawaka, Indiana 46544
 Mailing Address: P.O. Box 9560, Fort Wayne, Indiana 46899
 FESOP No.: 141-17410-00549
 Facility: One (1) aggregate dryer burner
 Parameter: Fuel usage (SO₂ emissions)
 Limit: The total usage of refinery blend fuel oil and refinery blend fuel oil equivalents for the dryer/mixer burner all other fuel combustion equipment shall be limited to less than 1,320,000 gallons or equivalent per twelve (12) consecutive month period, with compliance determined at the end of each month.

- For the purpose of determining compliance with this limit:
- (1) Every 250 million cubic feet of natural gas shall be equivalent to one thousand (1000) gallons of refinery blend fuel oil.
 - (2) Every 2.11 gallons of No. 2 fuel oil shall be equivalent to one (1) gallon of refinery blend fuel oil
 - (3) Every 1.02 gallons of waste oil shall be equivalent to one (1) gallon of refinery blend fuel oil.

The sulfur content of the No. 2 fuel oil shall not exceed 0.5% by weight and the sulfur content of the refinery blend fuel oil and waste oil each shall not exceed 1.0% by weight.

YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	Refinery Blend Fuel Oil & Equivalent Usage This Month (gallons)	Refinery Blend Fuel Oil & Equivalent Usage Previous 11 Months (gallons)	12 Month Total Refinery Blend Fuel Oil & Equivalent Usage (gallons)
Month 1			
Month 2			
Month 3			

YEAR: _____

- 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 DATA SECTION**

FESOP Quarterly Report

Use this form only if only one (1) type of binder is used, or no binder is used in the past 12 months

Source Name: Brooks Construction Co., Inc.
 Source Address: 727 S. Beiger Street, Mishawaka, Indiana 46544
 Mailing Address: P.O. Box 9560, Fort Wayne, Indiana 46899
 FESOP No.: 141-17410-00549
 Facility: Asphalt Plant
 Parameter: VOC solvent usage per twelve (12) consecutive month period, with compliance determined at the end of each month
 Limit: Cutback asphalt rapid cure liquid binder, less than 52.63 tons VOC solvent usage
 Cutback asphalt medium cure liquid binder, less than 71.43 tons VOC solvent usage
 Cutback asphalt slow cure liquid binder, less than 200.0 tons VOC solvent usage
 Emulsified asphalt with solvent liquid binder usage, less than 107.76 tons VOC solvent usage (Based on 46.4% volatilization)
 Other asphalt with solvent liquid binder, less than 2000.0 tons VOC solvent usage (Based on 2.5% volatilization)
 Equivalent to VOC emissions of less than 50.0 tons per twelve (12) consecutive month period, excluding combustion

YEAR: _____

TYPE of Binder: _____

Month	VOC Solvent Usage (tons)	VOC Solvent Usage (tons)	VOC Solvent Usage (tons)
	This Month	Previous 11 Months	12 Month Total

- 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 DATA SECTION**

FESOP Quarterly Report

Use this form only if more than one (1) type of binder is used in the past 12 months

Source Name: Brooks Construction Co., Inc.
 Source Address: 727 S. Beiger Street, Mishawaka, Indiana 46544
 Mailing Address: P.O. Box 9560, Fort Wayne, Indiana 46899
 FESOP No.: 141-17410-00549
 Facility: Asphalt Plant
 Parameter: VOC emissions, excluding combustion, based on solvent usage
 Limit: Less than 50.0 tons per twelve (12) consecutive month period, with compliance determined at the end of each month, using the following equation:

$$\frac{\text{Tons of solvent contained in binder}}{\text{Adjustment ratio}} = \text{tons of VOC emitted}$$

Year: _____

Month	Type of Liquid binder	Solvent Usage This Month (tons)	Adjustment Ratio	VOC emitted from each binder This Month (tons)	VOC emitted from all binders This Month (tons)	VOC emitted Previous 11 Months (tons)	VOC emitted 12 Month Total (tons)
	Cutback asphalt rapid cure		1.05				
	Cutback asphalt medium cure		1.43				
	Cutback asphalt slow cure		4.0				
	Emulsified asphalt		2.12				
	Other asphalt		40				
	Cutback asphalt rapid cure		1.05				
	Cutback asphalt medium cure		1.43				
	Cutback asphalt slow cure		4.0				
	Emulsified asphalt		2.12				
	Other asphalt		40				
	Cutback asphalt rapid cure		1.05				
	Cutback asphalt medium cure		1.43				
	Cutback asphalt slow cure		4.0				
	Emulsified asphalt		2.12				
	Other asphalt		40				

- 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 DATA SECTION
MC-61-53 IGCN 1003**

FESOP Quarterly Report

Source Name: Brooks Construction Company, Inc.
Source Address: 727 South Beiger Street, Mishawaka, Indiana, 46544
Mailing Address: P.O. Box 9560, Fort Wayne, Indiana 46899
FESOP No.: F039-17410-03325
Facility: One (1) drum dryer/mixer
Parameter: Hot mix asphalt production
Limit: 1,500,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month

QUARTER: _____ YEAR: _____

Month	Asphalt Produced (tons)	Asphalt Produced (tons)	Asphalt Produced (tons)
	This Month	Previous 11 Months	12 Month Total

- 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 DATA SECTION**

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

Source Name: Brooks Construction Co., Inc.
Source Address: 727 S. Beiger Street, Mishawaka, Indiana 46544
Mailing Address: P.O. Box 9560, Fort Wayne, Indiana 46899
FESOP No.: 141-17410-00549

Months: _____ to _____ Year: _____

Page 1 of 2

<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. Deviations that are required to be reported by an applicable requirement shall be reported according to the schedule stated in the applicable requirement and do 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:	

- No deviation occurred in this quarter.
 - Deviation/s occurred in this quarter.
Deviation has been reported on: _____
- Form Completed By: _____
- Title/Position: _____
- Date: _____
- Phone: _____

Attach a signed certification to complete this report.

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

Addendum to the Technical Support Document (ATSD) for a
Significant Permit Revision to a Federally Enforceable State Operating
Permit (FESOP)

Source Background and Description

Source Name:	Brooks Construction
Source Location:	727 S. Beiger Street, Mishawaka, IN 46544
County:	St. Joseph
SIC Code:	2951
Operation Permit No.:	F 141-17410-00549
Operation Permit Issuance Date:	September 22, 2003
Significant Permit Revision No.:	F 141-25539-00549
Permit Reviewer:	Rebecca Jacobs

On February 21, 2008, the Office of Air Quality (OAQ) had a notice published in South Bend Tribune, South Bend, Indiana, stating that Brooks Construction Company had applied for a Significant Permit Revision to burn waste oil in the aggregate drum dryer/mixer. The notice also stated that the OAQ proposed to issue a Significant Permit Revision for this operation and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

Comments and Responses

On February 25, 2008, Bruce Carter Associates, L.L.C., on behalf of Brooks Construction Company submitted comments to IDEM, OAQ on the draft Significant Permit Revision.

The Technical Support Document (TSD) is used by IDEM, OAQ for historical purposes. IDEM, OAQ does not make any changes to the original TSD, but the Permit will have the updated changes. The comments and revised permit language are provided below with deleted language as ~~strikeouts~~ and new language **bolded**.

Comment 1:

Brooks Construction Company would like the sulfur limit for the waste oil to be changed from 0.5% to 1.0%.

Response to Comment 1:

IDEM agrees with the recommended changes. No change to the waste oil usage limit is necessary since the limited potential to emit SO₂ will still be less than the major source threshold of 100 tons per year. The fuel equivalencies have been updated based on the 1.0% sulfur content. (See attached updated calculations.) The permit has been revised as follows:

D.1.6 Sulfur Dioxide (SO₂) [326 IAC 2-8-4] [326 IAC 7-1.1-1] [326 IAC 7-2-1]

Pursuant to 326 IAC 2-8-4, the SO₂ emissions from the dryer/mixer burner shall be limited as follows:

...

- (3) Every ~~2-04~~ **1.02** gallons of waste oil shall be equivalent to one (1) gallon of refinery blend fuel oil. However, the waste oil usage shall in no case exceed 750,000 gallons per twelve (12) consecutive month period.
- (b) The sulfur content of the No. 2 fuel oil ~~and waste oil each~~ shall not exceed 0.5% by weight.
- (c) The sulfur content of the refinery blend fuel oil **and waste oil each** shall not exceed 1.0% by weight.

...
D.1.13 Sulfur Dioxide Emissions and Sulfur Content

Compliance shall be determined utilizing one of the following options.

- ...
- (c) In order to demonstrate compliance with Condition D.1.6(a), the Permittee shall demonstrate that weight percent sulfur dioxide in the fuels used does not exceed one half of a percent (0.5%) by weight when operating on No. 2 distillate oil, ~~refinery blend distillate oil or waste oil~~ **and one percent (1.0%) by weight when operating on refinery blend distillate oil or waste oil** using methods described in (a) or (b) of this condition.
- ...

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION**

FESOP Quarterly Report

Source Name: Brooks Construction Co., Inc.
Source Address: 727 S. Beiger Street, Mishawaka, Indiana 46544
Mailing Address: P.O. Box 9560, Fort Wayne, Indiana 46899
FESOP No.: 141-17410-00549
Facility: One (1) aggregate dryer burner
Parameter: Fuel usage (SO₂ emissions)
Limit: The total usage of refinery blend fuel oil and refinery blend fuel oil equivalents for the dryer/mixer burner all other fuel combustion equipment shall be limited to less than 1,320,000 gallons or equivalent per twelve (12) consecutive month period, with compliance determined at the end of each month.

For the purpose of determining compliance with this limit:

- (1) Every 250 million cubic feet of natural gas shall be equivalent to one thousand (1000) gallons of refinery blend fuel oil.
- (2) Every 2.11 gallons of No. 2 fuel oil shall be equivalent to one (1) gallon of refinery blend fuel oil
- (3) Every ~~2-04~~ **1.02** gallons of waste oil shall be equivalent to one (1) gallon of refinery blend fuel oil.

The sulfur content of the No. 2 fuel oil ~~and waste oil~~ shall not exceed 0.5% by weight and the sulfur content of the refinery blend fuel oil **and waste oil each** shall not exceed 1.0% by weight.

...

Additional Changes

IDEM, OAQ has decided to make additional revisions to the permit as described below, with deleted

language as ~~strikeouts~~ and new language **bolded**.

- (a) The signature block has been updated as follows:

Operation Permit No.: F 141-25539-00549	
Issued by: Matthew Stuckey, Deputy Branch Chief Permits Branch Office of Air Quality	Issuance Date: Expiration Date: September 22, 2008

IDEM Contact

- (a) Questions regarding this proposed Significant Permit Revision can be directed to Rebecca Jacobs at the Indiana Department Environmental Management, Office of Air Quality, Permits Branch, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana 46204-2251 or by telephone at (317) 234-5378 or toll free at 1-800-451-6027 extension 4-5378.
- (b) A copy of the permit is available on the Internet at: <http://www.in.gov/ai/appfiles/idem-caats/>
- (c) For additional information about air permits and how the public and interested parties can participate, refer to the IDEM's Guide for Citizen Participation and Permit Guide on the Internet at: www.idem.in.gov

Indiana Department of Environmental Management Office of Air Quality

Technical Support Document (TSD) for a Significant Permit Revision to a Federally Enforceable State Operating Permit (FESOP)

Source Description and Location

Source Name:	Brooks Construction Company, Inc.
Source Location:	727 South Beiger Street, Mishawaka, IN 46544
County:	St. Joseph
SIC Code:	2951
Operation Permit No.:	F 141-17410-00549
Operation Permit Issuance Date:	September 22, 2003
Significant Permit Revision No.:	F 141-25539-00549
Permit Reviewer:	Rebecca Jacobs

On November 14, 2007, the Office of Air Quality (OAQ) received an application from Brooks Construction related to a modification to an existing stationary drum hot mix asphalt plant.

Existing Approvals

The source was issued FESOP No. F141-17410-00549 on September 22, 2003. The source has since received Administrative Amendment No. F141-19934-00549, issued on September 27, 2004.

County Attainment Status

The source is located in St. Joseph County.

Pollutant	Status
PM10	Attainment
PM2.5	Attainment
SO ₂	Attainment
NO ₂	Attainment
8-hour Ozone	Attainment
CO	Attainment
Lead	Attainment

(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, 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. St. Joseph 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) St. Joseph County has been classified as attainment for PM2.5. U.S. EPA has not yet established the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 for PM2.5 emissions. Therefore, until the U.S. EPA adopts specific provisions for PSD review for PM2.5 emissions, it has directed states to regulate PM10 emissions as a surrogate for PM2.5 emissions.
- (c) Other Criteria Pollutants
- St. Joseph County has been classified as attainment or unclassifiable in Indiana for all criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

Fugitive Emissions

This type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2, 326 IAC 2-3, or 326 IAC 2-7, however, there is an applicable New Source Performance Standard that was in effect on August 7, 1980, therefore fugitive emissions are counted toward the determination of PSD, Emission Offset, and Part 70 Permit applicability.

Status of the Existing Source

The table below summarizes the potential to emit of the entire source, prior to the proposed revision, after consideration of all enforceable limits established in the effective permits:

Process/Emission Unit	Potential To Emit of the Entire Source (tons/year)							
	PM	PM10	SO ₂	NOx	VOC	CO	Total HAPs	Worst Single HAP
Dryer/mixer and cold mix asphalt production	<204	≤66.5	99.0 (oil) 0.247 (natural gas)	57.9	<97.7 (cutback and emulsified asphalt) 2.23 (combustion)	34.0	<25.0	9.99
Conveying/ Handling, Screening and Storage	45.2	4.53	0	0	0	0	0	0
Insignificant Activities	.012	.050	Included in aggregate dryer limit	0.657	0.036	0.552	negl.	negligible
Paved and Unpaved Roads	128	28.9	0	0	0	0	0	0
Total PTE of Entire Source	377 (<250 without unpaved roads)	<100	<100	58	<100	34.6	<25.0	<10.0

Process/Emission Unit	Potential To Emit of the Entire Source (tons/year)							
	PM	PM10	SO ₂	NO _x	VOC	CO	Total HAPs	Worst Single HAP
Title V Major Source Thresholds	NA	100	100	100	100	100	25	10
PSD Major Source Thresholds	250	250	250	250	250	250	NA	NA
Emission Offset Major Source Thresholds	NA	NA	NA	NA	NA	NA	NA	NA
negl. = negligible These emissions are based upon the FESOP No.:141-17410-00549, issued on September 22, 2003.								

- (a) This existing source is not a major stationary source, under PSD (326 IAC 2-2), because no attainment regulated pollutant is emitted at a rate of 250 tons per year or more, and it is not one of the twenty-eight (28) listed source categories, as specified in 326 IAC 2-2-1(gg)(1).
- (b) This existing source is not a major source of HAPs, as defined in 40 CFR 63.41, because the Permittee has accepted limits on HAPs emissions to less than ten (10) tons per year for any single HAP and less than twenty-five (25) tons per year of a combination of HAPs. Therefore, this source is an area source under Section 112 of the Clean Air Act (CAA).

Description of Proposed Revision

The Office of Air Quality (OAQ) has reviewed an application, submitted by Brooks Construction Company, Inc., on November 14, 2007, relating to the use of waste oil as a backup fuel in the dryer/mixer burner.

The following is the modified emission unit and pollution control device:

One (1) drum dryer/mixer with a maximum capacity of 300 tons per hour, equipped with one (1) 92.5 MMBtu/hr natural gas-fired burner, using No. 2 distillate fuel oil, refinery blend fuel oil, and waste oil as back-up fuels, controlled by one (1) baghouse with a knockout box, exhausting to Stack SV1.

This permit was revised as follows to incorporate this revision:

- (a) A hot mix asphalt production limit was added as a result of adding the option to burn waste oil as a backup fuel to keep the Carbon Monoxide (CO) emissions below the Title V major source threshold of 100 tons per year.
- (b) Upon further review of the permit, OAQ determined that the permit required revising for the following reasons:
 - (1) VOC and CO emissions for hot mix asphalt plants were overlooked from the previous review and needed to be included in the source's potential to emit (PTE) which resulted in VOC and CO emission limitations being added to the permit to maintain their FESOP status.
 - (2) Fugitive volatile organic compound (VOC), hazardous air pollutant (HAP), and particulate matter (PM) emissions from Silo Filling/Storage, Load Out, On-Site Yard, and Storage Tanks were overlooked from the previous review and needed to be included in the source's potential to emit (PTE).

- (3) Fugitive PM emissions for both paved and unpaved roads have been included in the PTE calculations.
- (4) The cold mix asphalt VOC limit was also lowered to offset the VOC emissions from burning waste oil at the asphalt plant.

Enforcement Issues

There are no pending enforcement actions related to this revision.

Emission Calculations

See Appendix A of this TSD for detailed emission calculations.

Permit Level Determination – FESOP Revision

The following table is used to determine the appropriate permit level under 326 IAC 2-8.11.1. This table reflects the PTE before controls of the proposed revision. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit.

Process/Emission Unit	PTE of Proposed Revision (tons/year)							
	PM	PM10*	SO ₂	NO _x	VOC	CO	Total HAPs	Worst Single HAP
Waste Oil Combustion in Dryer/Mixer Burner	120.39	95.93	212.70	54.98	2.89	14.47	78.75	76.40 hydrogen chloride
* 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.								

- (a) This FESOP is being revised through a FESOP Significant Permit Revision pursuant to 326 IAC 2-8-11.1 (f)(1)(G), because the revision has the potential to emit (PTE) at greater than or equal to ten tons per year of hydrogen chloride (HAP) and twenty-five tons per year of any combination of hazardous air pollutants.
- (b) This FESOP is being revised through a FESOP Significant Permit Revision pursuant to 326 IAC 2-8-11.1(f)(1)(E)(ii) and (iii), because the revision has the potential to emit (PTE) greater than or equal to twenty-five (25) tons per year each of PM, PM₁₀, sulfur dioxide (SO₂), and nitrogen oxides (NO_x).
- (c) This FESOP is being revised through a FESOP Significant Permit Revision pursuant to 326 IAC 2-8-11.1(g)(2) because it involves adjustment to the existing source-wide emissions limitations to maintain the FESOP status of the source (see PTE of the Entire Source After The Issuance of the FESOP Revision Section).

PTE of the Entire Source After Issuance of the FESOP Revision

The table below summarizes the potential to emit of the entire source reflecting adjustment of existing limits, with updated emissions shown as **bold** values and previous emissions shown as ~~strike through~~ values.

Process/Emission Unit	Potential To Emit of the Entire Source to accommodate the Proposed Revision (tons/year)							
	PM	PM10 *	SO ₂	NO _x	VOC	CO	Total HAPs	Worst Single HAP
Dryer/Mixer and Fuel Combustion	<204 112.50	≤66.5 37.50	99.0	57.9 41.25	2.23 24.00	34.0 97.50	<25.0 11.08	9.99 9.90 hydrogen chloride
Asphalt Load-Out, Silo Filling, On-Site Yard	0.83	0.83	0	0	12.85	2.16	0.21	0.07 formaldehyde
Hot Oil and Asphalt Heaters	0	0	0	0	1.2E-03	0.06	1.3E-03	8.0E-04 naphthalene
Material Storage Piles	2.38	0.83	0	0	0	0	0	0
Material Processing and Handling	4.85	2.29	0	0	0	0	0	0
Material Screening and Conveying	19.95	6.98	0	0	0	0	0	0
Conveying/ Handling, Screening and Storage	45.2	4.53	0	0	0	0	0	0
Insignificant Activities	.012	.050	.004	0.657	0.036	0.552	negl.	negligible
Paved and Unpaved Roads	128 88.76	28.9 22.62	0	0	0	0	0	0
Cold Mix Asphalt Production	0	0	0	0	<97.7 50.00	0	0 13.04	0 4.50 xylenes
Volatile Organic Liquid Storage Vessels	0	0	0	0	negl.	0	negl.	negl.
Total Fugitive Emissions	116.76	33.56	0	0	62.85	2.22	13.26	4.50 xylenes
Total PTE of Entire Source	<250 229.26	<100 71.06	99.0	41.25	86.85	99.72	<25.0 24.34	9.90 hydrogen chloride
Title V Major Source Thresholds	NA	100	100	100	100	100	25	10
PSD Major Source Thresholds	250	250	250	250	250	250	NA	NA
Emission Offset Major Source Thresholds	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.								

The table below summarizes the potential to emit of the entire source after issuance of this revision, reflecting all limits, of the emission units. Any control equipment is considered federally enforceable only after issuance of this FESOP permit revision, and only to the extent that the effect of the control equipment is made practically enforceable in the permit. (Note: the table below was generated from the above table, with bold text un-bolded and strikethrough text deleted)

Process/Emission Unit	Potential To Emit of the Entire Source After Issuance of Revision (tons/year)							
	PM	PM10*	SO ₂	NO _x	VOC	CO	Total HAPs	Worst Single HAP
Dryer/Mixer and Fuel Combustion	112.50	37.50	99.00	41.25	24.00	97.50	11.15	9.90 hydrogen chloride
Asphalt Load-Out, Silo Filling, On-Site Yard	0.83	0.83	0	0	12.85	2.16	0.21	0.07 formaldehyde
Hot Oil and Asphalt Heaters	0	0	0	0	1.2E-03	0.06	1.3E-03	8.0E-04 naphthalene
Material Storage Piles	2.38	0.83	0	0	0	0	0	0
Material Processing and Handling	4.85	2.29	0	0	0	0	0	0
Material Screening and Conveying	19.95	6.98	0	0	0	0	0	0
Paved and Unpaved Roads	88.76	22.62	0	0	0	0	0	0
Cold Mix Asphalt Production	0	0	0	0	50.00	0	13.04	4.50 xylenes
Volatile Organic Liquid Storage Vessels	0	0	0	0	negl.	0	negl.	negl.
Total Fugitive Emissions	116.76	33.56	0	0	62.85	2.22	13.26	4.50 xylenes
Total PTE of Entire Source	229.26	71.06	99.0	41.25	86.85	99.72	24.34	9.90 hydrogen chloride
Title V Major Source Thresholds	NA	100	100	100	100	100	25	10
PSD Major Source Thresholds	250	250	250	250	250	250	NA	NA
Emission Offset Major Source Thresholds	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.								

(a) FESOP Status

This revision to an existing Title V minor stationary source will not change the minor status, because the potential to emit criteria pollutants from the entire source will still be limited to less than the Title V major source threshold levels. Therefore, the source will still be subject to the provisions of 326 IAC 2-8 (FESOP).

In order to comply with the requirements of 326 IAC 2-8-4 (FESOP), the source shall comply with the following:

- (1) Pursuant to 326 IAC 2-8-4, the SO₂ emissions from the dryer/mixer burner shall be limited as follows:

- (A) The total usage of refinery blend fuel oil and refinery blend fuel oil equivalents for the dryer/mixer burner and all other fuel combustion equipment shall be limited to less than 1,320,000 gallons or equivalent per twelve (12) consecutive month period, with compliance determined at the end of each month. The refinery blend fuel oil usage was previously limited to 2,640,000 gallons or equivalent per twelve (12) consecutive month period based on the sulfur content limit of 0.5%.

For the purpose of determining compliance with this limit:

- (i) Every 250 million cubic feet of natural gas shall be equivalent to one thousand (1000) gallons of refinery blend fuel oil. However, the natural gas usage shall in no case exceed 810.3 million cubic feet per twelve (12) consecutive month period.
- (ii) Every 2.11 gallons of No. 2 fuel oil shall be equivalent to one (1) gallon of refinery blend fuel oil. However, the No. 2 fuel oil usage shall in no case exceed 2,530,000 gallons per twelve (12) consecutive month period.
- (iii) Every 2.04 gallons of waste oil shall be equivalent to one (1) gallon of refinery blend fuel oil. However, the waste oil usage shall in no case exceed 750,000 gallons per twelve (12) consecutive month period.
- (B) The sulfur content of the No. 2 fuel oil and waste oil each shall not exceed 0.5% by weight.
- (C) The sulfur content of the refinery blend fuel oil shall not exceed 1.0% by weight.

Compliance with these limits, combined with the potential to emit SO₂ from all other units at this source, will limit the source-wide SO₂ to less than 100 tons per twelve (12) consecutive month period and render 326 IAC 2-7 (Part 70 Permit Program) and 326 IAC 2-2 (PSD) not applicable.

See Appendix A for the detailed calculations.

- (2) Pursuant to 326 IAC 2-8-4, the emissions of PM₁₀, CO, and VOC from the dryer/mixer shall be limited as follows:
- (A) The asphalt production rate shall be limited to less than 1,500,000 tons per twelve (12) consecutive month period with compliance determined at the end of each month.
- (B) PM₁₀ emissions from the dryer/mixer shall be limited to less than 0.050 pounds of PM₁₀ per ton of asphalt produced.
- (C) CO emissions from the dryer/mixer shall be limited to less than 0.130 pounds of CO per ton of asphalt produced.
- (D) VOC emissions from the dryer/mixer shall be limited to less than 0.032 pounds of VOC per ton of asphalt produced.

Compliance with these limits, combined with the potential to emit PM₁₀, CO, and VOC from all other emission units at this source, will limit the source-wide potential to emit PM₁₀, CO, and VOC, each to less than 100 tons per 12 consecutive month period, and render 326 IAC 2-7 (Part 70 Permit Program) and 326 IAC 2-2 (PSD) not applicable.

See Appendix A for the detailed calculations.

- (3) Pursuant to 326 IAC 2-8-4, the following additional limits shall apply to the source:
- (A) The chlorine content of the waste oil used in the dryer/mixer burner and all other fuel combustion equipment shall not exceed four tenths of a percent (0.40%) by weight.
 - (B) The usage of waste oil used in the dryer/mixer burner and all other fuel combustion equipment shall be limited to less than 750,000 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month.
 - (C) The HCl emissions from the dryer/mixer burner shall be limited to less than 26.4 pounds of HCl per 1,000 gallons of waste oil burned.

Compliance with these limits, combined with the potential to emit HAP from all other emission units at this source, will limit the source-wide potential to emit HCl to less than 10 tons per year and combined HAPs to less than 25 tons per year and render 326 IAC 2-7 (Part 70) and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP)) not applicable.

See Appendix A for the detailed calculations.

- (4) The VOC emissions from any liquid binder used in asphalt production shall not exceed 50.0 tons per year. The liquid binder used in asphalt production shall be limited as follows:
- (1) Cutback asphalt rapid cure liquid binder usage shall not exceed 52.63 tons of VOC solvent per twelve (12) consecutive month period with compliance determined at the end of each month. (Based on 95% volatilization)
 - (2) Cutback asphalt medium cure liquid binder usage shall not exceed 71.43 tons of VOC solvent per twelve (12) consecutive month period with compliance determined at the end of each month. (Based on 70% volatilization)
 - (3) Cutback asphalt slow cure liquid binder usage shall not exceed 200.0 tons of VOC solvent per twelve (12) consecutive month period with compliance determined at the end of each month. (Based on 25% volatilization)
 - (4) Emulsified asphalt with solvent liquid binder usage shall not exceed 107.76 tons of VOC solvent per twelve (12) consecutive month period with compliance determined at the end of each month. (Based on 46.4% volatilization)
 - (5) Emulsified asphalt with fuel oil liquid binder usage shall not exceed 2000.0 tons of VOC solvent per twelve (12) consecutive month period with compliance determined at the end of each month. The fuel oil diluent shall be limited to 1.5% of the total weight of the emulsified asphalt mix. (Based on 2.5% volatilization)
 - (6) The VOC solvent allotments in (1) through (5) above shall be adjusted when more than one type of binder is used per twelve (12) month consecutive period with compliance determined at the end of each month. In order to determine the tons of VOC emitted per each type of binder (or for a type of binder not listed above), the Permittee shall use the following formula and divide the tons of VOC solvent used for each type of binder by the corresponding adjustment ratio listed in the table that follows. [The adjustment ratio is equal to $1/(\text{percent of initial VOC in solvent that volatilizes or is emitted from the final product})$]

Tons of solvent contained in binder/ Adjustment ratio = tons of VOC emitted

Or

Tons of solvent contained in binder x Percent volatilization = tons of VOC emitted

Type of binder	Adjustment ratio
Cutback Asphalt Rapid Cure (95% volatilization)	1.05
Cutback Asphalt Medium Cure (70% volatilization)	1.43
Cutback Asphalt Slow Cure (25% volatilization)	4.00
Emulsified Asphalt (49% volatilization)	2.16
Emulsified Asphalt (7% volatilization)	40

The equivalent total tons of VOC emitted from the combined liquid binders shall be less than 50.0 tons per twelve consecutive month period with compliance determined at the end of each month.

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

See Appendix A for detailed calculations.

(b) PSD Minor Source

This modification to an existing PSD minor stationary source will not change the PSD minor status, because the potential to emit of all attainment regulated pollutants from the entire source will continue to be limited to less than the PSD major source threshold levels. Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply.

In order to render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable, the source shall comply with the following:

- (1) The asphalt production rate shall be limited to less than 1,500,000 tons per twelve (12) consecutive month period with compliance determined at the end of each month.
- (2) PM emissions from the dryer/mixer shall be limited to less than 0.150 pounds of PM per ton of asphalt produced.

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

See Appendix A for detailed calculations.

Federal Rule Applicability Determination

New Source Performance Standards (NSPS)

There are no New Source Performance Standards (NSPS)(40 CFR Part 60) included for this proposed revision. The source shall continue to comply with the applicable federal requirements and permit conditions contained in FESOP Renewal No. 039-17738-03325.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs) (326 IAC 14, 326 IAC 20 and 40 CFR Part 63) included for this proposed revision. The source shall continue to comply with the applicable federal requirements and permit conditions contained in FESOP Renewal No. 039-17738-03325.

Compliance Assurance Monitoring (CAM)

Pursuant to 40 CFR 64.2, Compliance Assurance Monitoring (CAM) is not included in the permit, because the potential to emit of the source is limited to less than the Title V major source thresholds and the source is not required to obtain a Part 70 or Part 71 permit.

State Rule Applicability Determination

The following state rules are applicable to the proposed revision:

- (a) 326 IAC 2-8-4 (FESOP)
This revision to an existing Title V minor stationary source will not change the minor status, because the potential to emit criteria pollutants from the entire source will still be limited to less than the Title V major source threshold levels. Therefore, the source will still be subject to the provisions of 326 IAC 2-8 (FESOP). See PTE of the Entire Source After Issuance of the FESOP Revision Section above.
- (b) 326 IAC 2-2 (Prevention of Significant Deterioration(PSD))
This modification to an existing PSD minor stationary source will not change the PSD minor status, because the potential to emit of all attainment regulated pollutants from the entire source will still be less than the PSD major source threshold levels. Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply. See PTE of the Entire Source After Issuance of the FESOP Revision Section above.
- (c) 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))
The unlimited potential to emit of HCl from burning waste oil in the dryer/mixer burner is greater than ten (10) tons per year. However, the source shall limit the potential to emit of HCl from the dryer/mixer to less than ten (10) tons per year. Therefore, the proposed revision is not subject to the requirements of 326 IAC 2-4.1. See PTE of the Entire Source After Issuance of the FESOP Revision Section above.
- (d) 326 IAC 7-1.1 (Sulfur Dioxide Emissions Limitations)
The dryer/mixer burner is subject to 326 IAC 7-1.1, because it has potential SO₂ emissions of greater than 25 tons per year (limited potential emissions are 99.0 tons per year). Pursuant to this rule, sulfur dioxide emissions from the dryer/mixer burner shall be limited to five-tenths (0.5) pounds per million Btu for distillate oil combustion (including No. 2 fuel oil) and one and six-tenths (1.6) pounds per million Btu heat input for residual oil (including refinery blend fuel oil and waste oil) combustion.
- (e) 326 IAC 8-1-6 (BACT)
The dryer/mixer has a limited potential to emit of 24.0 tons per year of VOC, based on a limited throughput of 1,500,000 tons per twelve (12) consecutive month period and a VOC limit of 0.032

pound of VOC per ton of hot mix asphalt produced. Compliance with these limits will render the requirements of 326 IAC 8-1-6 not applicable to the dryer/mixer.

Compliance Determination, Monitoring and Testing Requirements

The following compliance determination and compliance monitoring requirements are being added to the FESOP as a result of this modification:

The Permittee shall demonstrate that the chlorine content of the fuel used does not exceed four tenths of a percent (0.40%) by weight when operating on waste oil, by providing vendor analysis of fuel delivered accompanied by a vendor certification.

Proposed Changes

The following changes listed below are due to the proposed revision. Deleted language appears as ~~strike through~~ text and new language appears as **bold text**:

- (a) IDEM has begun implementing a new procedure and will no longer list the name or title of the Authorized Individual (A.I.) in the permit document.
- (b) In Sections A.1 and D.1, the emission unit and pollution control device description has been revised to include waste oil as a back-up fuel.
- (c) Section D.1.5 has been revised to limit the VOC emissions from the cold mix asphalt production to less than 50.0 tons/year and with corresponding binder usage limits.
- (d) Section D.1.6 has been revised to include waste oil as a back-up fuel.
- (e) Section D.1.7 has been revised to limit the asphalt production rate and the PM10, CO and VOC emissions from the dryer/mixer per ton of asphalt produced to maintain the FESOP status of the source.
- (f) Section D.1.8 has been revised to limit the PM emissions based on the limited asphalt production rate to maintain the FESOP status of the source.
- (g) Section D.1.10 has been added to limit the chlorine content of waste oil, the usage of waste oil in the dryer/mixer, and the HCl emissions from the dryer/mixer to maintain the FESOP status of the source.
- (h) Section D.1.11 has been added to provide compliance determination requirements for HCl emissions and the chlorine content of waste oil.
- (i) Section D.1.13 has been revised to provide compliance determination requirements for the SO₂ emissions from burning refinery blend fuel oil or waste oil.
- (j) Section D. 1.21 has been revised to include certification documentation for the sulfur content of refinery blend fuel oil and waste oil as well as the chlorine content of waste oil.
- (k) All sections after D.1.9 have been re-numbered.
- (l) All sections which have references to re-numbered sections have been updated.
- (m) All forms have been updated to reflect the new limits.
- (n) A new form for asphalt production quarterly reporting has been added.

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

The Permittee owns and operates a stationary drum hot mix asphalt plant.

Authorized individual: ~~Plant Operations Supervisor~~

...

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) 92.5 million British thermal units per hour aggregate dryer, exhausting through the knockout box and baghouse and stack SV1, fired by natural gas or No. 2 or No. 4 distillate fuel oil.~~

(a) **One (1) drum dryer/mixer, constructed after June 11, 1973, identified as Emissions Unit No. 2, with a maximum capacity of 300 tons per hour, equipped with one (1) 92.5 MMBtu/hr natural gas-fired burner, using No. 2 distillate fuel oil, and refinery blend fuel oil, and waste oil as back-up fuels, controlled by one (1) baghouse with a knockout box, exhausting to Stack SV1.**

...

SECTION D.1

FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-8-4(10)]:

~~(a) One (1) 92.5 million British thermal units per hour aggregate dryer, exhausting through the knockout box and baghouse and stack SV1, fired by natural gas or No. 2 or No. 4 distillate fuel oil.~~

(a) **One (1) drum dryer/mixer, constructed after June 11, 1973, identified as Emissions Unit No. 2, with a maximum capacity of 300 tons per hour, equipped with one (1) 92.5 MMBtu/hr natural gas-fired burner, using No. 2 distillate fuel oil, refinery blend fuel oil, and waste oil as back-up fuels, controlled by one (1) baghouse with a knockout box, exhausting to Stack SV1.**

(b) One (1) drum mixer, exhausting through the knockout box and baghouse and stack SV1, capacity: 300 tons of hot mix asphalt per hour.

(c) Two (2) liquid asphalt storage tanks, identified as 11A and 11B, heated by an insignificant 1.5 million British thermal units per hour oil heater, capacity: 20,000 gallons, each.

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

...

D.1.5 Volatile Organic Compounds (VOC) [326 IAC 2-2] [326 IAC 2-8-4] [326 IAC 8-5-2]

(a) The VOC solvent used as diluent in the liquid binder used in cold mix asphalt production from the plant shall be limited such that less than ~~97.7~~ **50.0** tons of VOC is emitted per twelve (12) consecutive month period, with compliance determined at the end of each month. This shall be achieved by limiting the total VOC solvent of any one selected binder as follows (when more than one (1) type of binder is used, the formula in paragraph 6 shall be applied):

(1) Cutback asphalt rapid cure liquid binder usage shall be limited to less than ~~97.7~~ **52.63** tons of VOC solvent per twelve (12) consecutive month period rolled on a monthly basis.

(2) Cutback asphalt medium cure liquid binder usage shall be limited to less than ~~133~~ **71.43** tons of VOC solvent per twelve (12) consecutive month period rolled on a

monthly basis.

- (3) Cutback asphalt slow cure liquid binder usage shall be limited to less than ~~374~~ **200.0** tons of VOC solvent per twelve (12) consecutive month period rolled on a monthly basis.
- (4) Emulsified asphalt with solvent liquid binder usage shall be limited to less than ~~499~~ **107.76** tons of VOC solvent per twelve (12) consecutive month period rolled on a monthly basis.
- (5) Other asphalt with solvent liquid binder shall be limited to less than ~~3,712~~ **2000.0** tons of VOC solvent per twelve (12) consecutive month period rolled on a monthly basis.
- (6) The VOC solvent allotments in shall be adjusted when more than one (1) type of binder is used per twelve (12) month consecutive period, with compliance determined at the end of each month. In order to determine the tons of VOC emitted per each type of binder, use the following formula and divide the tons of VOC solvent used for each type of binder by the corresponding adjustment ratio listed in the table that follows.

$$\frac{\text{Tons of solvent contained in binder}}{\text{Adjustment ratio}} = \text{tons of VOC emitted}$$

Type of binder	tons VOC solvent	adjustment ratio	tons VOC emitted
cutback asphalt rapid cure		4 1.05	
cutback asphalt medium cure		1.36 1.42	
cutback asphalt slow cure		3.8 4.0	
emulsified asphalt		2.04 2.16	
other asphalt		38 40	

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

...

This will limit the potential to emit VOC to ~~97.7~~ **50.0** tons per year from VOC usage, and the total source potential to emit VOC to less than 100 tons per year, including combustion. Thus, this limit will satisfy the requirements of 326 IAC 2-8-4, FESOP, and ensure that the source is a minor source pursuant to 326 IAC 2-2, PSD.

...

D.1.6 Sulfur Dioxide (SO₂) [326 IAC 2-8-4] [326 IAC 7-1.1-1] [326 IAC 7-2-1]

(a) Pursuant to 326 IAC 2-8-4, the total use of No. 4 distillate fuel oil by the dryer burner shall be

~~limited to no more than 2,640,000 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month. Each gallon of No. 2 distillate fuel oil used at the dryer burner or shall be considered equal to using 0.947 gallons of No. 4 distillate fuel oil. The sulfur content of the No. 2 and No. 4 distillate oils shall not exceed one half of a percent (0.5%) by weight, based on a monthly weighted average. This will limit SO₂ emissions from the use of distillate fuel oils to 99.0 tons per year and the potential to emit SO₂ from the entire source to less than 100 tons per year. Thus, the requirements of 326 IAC 2-7, Part 70, do not apply.~~

Pursuant to 326 IAC 2-8-4, the SO₂ emissions from the dryer/mixer burner shall be limited as follows:

- (a) The total usage of refinery blend fuel oil and refinery blend fuel oil equivalents for the dryer/mixer burner and all other fuel combustion equipment shall be limited to less than 1,320,000 gallons or equivalent per twelve (12) consecutive month period, with compliance determined at the end of each month.**

For the purpose of determining compliance with this limit:

- (1) Every 250 million cubic feet of natural gas shall be equivalent to one thousand (1000) gallons of refinery blend fuel oil. However, the natural gas usage shall in no case exceed 810.30 million cubic feet per twelve (12) consecutive month period.**
 - (2) Every 2.11 gallons of No. 2 fuel oil shall be equivalent to one (1) gallon of refinery blend fuel oil. However, the No. 2 fuel oil usage shall in no case exceed 2,530,000 gallons per twelve (12) consecutive month period.**
 - (3) Every 2.04 gallons of waste oil shall be equivalent to one (1) gallon of refinery blend fuel oil. However, the waste oil usage shall in no case exceed 750,000 gallons per twelve (12) consecutive month period.**
- (b) The sulfur content of the No. 2 fuel oil and waste oil each shall not exceed 0.5% by weight.**
- (c) The sulfur content of the refinery blend fuel oil shall not exceed 1.0% by weight.**
- ~~(b) Pursuant to 326 IAC 7-1.1 (SO₂ Emissions Limitations), the SO₂ emissions from the aggregate dryer shall not exceed five tenths (0.5) pounds per million British thermal unit heat input when operating on No. 2 distillate oil or No. 4 distillate oil. Pursuant to 326 IAC 7-2-1, compliance shall be demonstrated on a thirty (30) day rolling weighted average.~~
- (d) Pursuant to 326 IAC 7-1.1 (SO₂ Emissions Limitations), the SO₂ emissions from the dryer/mixer burner at the asphalt plant shall not exceed five-tenths (0.5) pound per million Btu heat input while combusting distillate oil (including No. 2 fuel oil).**
- (e) Pursuant to 326 IAC 7-1.1 (Sulfur Dioxide Emission Limitations), sulfur dioxide emissions from the dryer/mixer burner shall be limited to 1.6 pounds per million Btu heat input or a sulfur content of less than or equal to 1.5% when using residual oil (including refinery blend fuel oil and waste oil).**
- (f) Pursuant to 326 IAC 7-2-1, compliance shall be demonstrated on a calendar month average.**

D.1.7 Particulate Matter (PM₁₀) [326 IAC 2-8-4] [326 IAC 2-2]

Pursuant to 326 IAC 2-8-4, the PM₁₀ emissions from the aggregate dryer/mixer shall not exceed 0.05 pound per ton of asphalt processed, equivalent to no more than 66.5 tons per year when operating at

~~the maximum rate of 300 tons per hour for every hour of the year. This will limit the total source potential to emit PM₁₀ to less than 100 tons per year. Therefore, the requirements of 326 IAC 2-7, Part 70, do not apply. Compliance with this limit shall also ensure that the requirements of 326 IAC 2-2, Prevention of Significant Deterioration (PSD) are not applicable.~~

Pursuant to 326 IAC 2-8-4, the emissions of PM₁₀, CO, and VOC from the dryer/mixer shall be limited as follows:

- (a) The asphalt production rate shall be limited to less than 1,500,000 tons per twelve (12) consecutive month period with compliance determined at the end of each month.**
- (b) PM₁₀ emissions from the dryer/mixer shall be limited to less than 0.05 pounds of PM₁₀ per ton of asphalt produced.**
- (c) CO emissions from the dryer/mixer shall be limited to less than 0.130 pounds of CO per ton of asphalt produced.**
- (d) VOC emissions from the dryer/mixer shall be limited to less than 0.032 pounds of VOC per ton of asphalt produced.**

Compliance with these limits, combined with the potential to emit PM₁₀, CO, and VOC from all other emission units at this source, will render 326 IAC 2-7 (Part 70 Permit Program), and 326 IAC 2-2 (PSD), and 326 IAC 2-3 (Emission Offset) not applicable.

D.1.8 Particulate Matter (PM) [326 IAC 2-2] [40 CFR 60.92] [326 IAC 12-1] [326 IAC 6-1-2(a)]

~~(a) The potential to emit PM from the aggregate dryer/mixer shall not exceed 0.15 pound per ton of asphalt processed, equivalent to less than 204 tons per year when operating at the maximum rate of 300 tons of asphalt per hour for every hour of the year. This will limit the potential to emit PM from the entire source to less than 100 tons per year. Thus, the requirements of 326 IAC 2-2, PSD, are not applicable.~~

In order to render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable, the source shall comply with the following:

- (a) The asphalt production rate shall be limited to less than 1,500,000 tons per twelve (12) consecutive month period with compliance determined at the end of each month.**
- (b) PM emissions from the dryer/mixer shall be limited to less than 0.15 pounds of PM per ton of asphalt produced.**
- (bc) Pursuant to 40 CFR 60.92 and 326 IAC 12-1, the opacity of emissions from the aggregate dryer/ mixer stack (SV1) shall be less than twenty percent (20%).**
- (ed) Pursuant to 326 IAC 6-1-2(a), the PM emissions from the aggregate dryer/mixer shall not exceed 0.07 gram per dry standard cubic meter (0.03 grain per dry standard cubic foot). Compliance with this limit will also ensure that the plant is in compliance with the emission limitation of 90 milligrams per dry standard cubic meter (0.04 grains per dry standard cubic foot) pursuant to 40 CFR 60.92 and 326 IAC 12-1.**

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

D.1.10 Hazardous Air Pollutants (HAP) [326 IAC 2-8-4][326 IAC 2-4.1]

Pursuant to 326 IAC 2-8-4, the following additional limits shall apply to the source:

- (a) **The chlorine content of the waste oil used in the dryer/mixer burner all other fuel combustion equipment shall not exceed four tenths of a percent (0.40%) by weight.**
- (b) **The usage of waste oil used in the dryer/mixer burner all other fuel combustion equipment shall be limited to less than 750,000 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month.**
- (c) **The HCl emissions from the dryer/mixer burner shall be limited to less than 26.4 pounds of HCl per 1,000 gallons of waste oil burned.**

Compliance with these limits, combined with the potential to emit HAP from all other emission units at this source, will limit the source-wide potential to emit HCl to less than 10 tons per year and combined HAPs to less than 25 tons per year and render 326 IAC 2-7 (Part 70) and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP)) not applicable.

Compliance Determination Requirements

D.1.11 Hydrogen Chloride (HCl) Emissions and Chlorine Content

In order to comply with Conditions D.1.9(a) and D.1.9(c), the Permittee shall demonstrate that the chlorine content of the fuel used for the dryer burner all other fuel combustion equipment does not exceed four tenths of a percent (0.40%) by weight, when operating on waste oil, by providing a vendor analysis of fuel delivered accompanied by a vendor certification.

D.1.1413 Sulfur Dioxide Emissions and Sulfur Content

Compliance shall be determined utilizing one of the following options.

- (a) Pursuant to 326 IAC 3-7-4, the Permittee shall demonstrate that the sulfur dioxide emissions do not exceed five-tenths (0.5) pounds per million British thermal unit heat input when operating on No. 2 distillate oil ~~or No. 4~~ **and that the sulfur dioxide emissions do not exceed 1.6 pounds per million Btu heat input when burning refinery blend fuel oil or waste oil by:**
 - (1) Providing vendor analysis of fuel delivered, if accompanied by a vendor certification; or
 - (2) Analyzing the oil sample to determine the sulfur content of the oil via the procedures in 40 CFR 60, Appendix A, Method 19.
 - (A) Oil samples may be collected from the fuel tank immediately after the fuel tank is filled and before any oil is combusted; and
 - (B) If a partially empty fuel tank is refilled, a new sample and analysis would be required upon filling.
- (b) Compliance may also be determined by conducting a stack test for sulfur dioxide emissions from the ~~aggregate dryer/mixer and drum mixer~~ using 40 CFR 60, Appendix A, Method 6 in accordance with the procedures in 326 IAC 3-6.
- (c) In order to demonstrate compliance with Condition D.1.6(a), the Permittee shall demonstrate that weight percent sulfur dioxide in the fuels used does not exceed one half of a percent (0.5%) by weight when operating on No. 2 distillate oil, ~~or No. 4~~ **refinery blend distillate oil or waste oil** using methods described in (a) or (b) of this condition.

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

D.1.4921 Record Keeping Requirements

...

- (4) A statement from the fuel supplier that certifies the sulfur content of the fuel oil, **refinery blend fuel oil, and waste oil, and a statement from the fuel supplier that certifies the chlorine content of the waste oil.**

...

- (d) To document compliance with Condition D.1.4315, the Permittee shall maintain records of visible emission notations of the conveyors, material transfer points and aggregate dryer and drum mixer stack (SV1) exhaust once per shift.
- (e) To document compliance with Condition D.1.4416, the Permittee shall maintain the following:
- (1) Records of the total static pressure drop during normal operation once per shift when venting to the atmosphere.
- (2) Records of the inlet temperature during normal operation once per shift when venting to the atmosphere.
- (f) To document compliance with Conditions D.1.4517 and D.1.4719, the Permittee shall maintain records of the results of the inspections required under Conditions D.1.4517 and D.1.4719 and the dates the vents are redirected.

**... INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION**

FESOP Quarterly Report

Source Name: Brooks Construction Co., Inc.
Source Address: 727 S. Beiger Street, Mishawaka, Indiana 46544
Mailing Address: P.O. Box 9560, Fort Wayne, Indiana 46899
FESOP No.: 141-17410-00549
Facility: One (1) aggregate dryer burner
Parameter: Fuel usage (SO₂ emissions)
~~Limit: No more than 2,640,000 gallons per twelve (12) consecutive month period of No. 4 distillate oil, with compliance determined at the end of each month, where each gallon of No. 2 refinery blend (No. 4) distillate oil used shall be considered equal to using 0.947 gallons of No. 4 No. 2 distillate fuel oil. This limit is equivalent to SO₂ emissions of no more than 99.0 tons per year from the dryer burner.~~
Limit: The total usage of refinery blend fuel oil and refinery blend fuel oil equivalents for the dryer/mixer burner all other fuel combustion equipment shall be limited to less than 1,320,000 gallons or equivalent per twelve (12) consecutive month period, with compliance determined at the end of each month.

For the purpose of determining compliance with this limit:

- (1) Every 250 million cubic feet of natural gas shall be equivalent to one thousand (1000) gallons of refinery blend fuel oil.
- (2) Every 2.11 gallons of No. 2 fuel oil shall be equivalent to one (1) gallon of refinery blend fuel oil
- (3) Every 2.04 gallons of waste oil shall be equivalent to one (1) gallon of refinery blend fuel oil.

The sulfur content of the No. 2 fuel oil and waste oil shall not exceed 0.5% by weight and the sulfur content of the refinery blend fuel oil shall not exceed 1.0% by weight.

YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	Refinery Blend Fuel Oil & Equivalent Usage This Month (gallons)	Refinery Blend Fuel Oil & Equivalent Usage Previous 11 Months (gallons)	12 Month Total Refinery Blend Fuel Oil & Equivalent Usage (gallons)
Month 1			
Month 2			
Month 3			

YEAR:

Month	No. 4 distillate oil usage plus equivalent of No. 2 distillate oil to No. 4 distillate oil (gallons)	No. 4 distillate oil usage plus equivalent of No. 2 distillate oil to No. 4 distillate oil (gallons)	No. 4 distillate oil usage plus equivalent of No. 2 distillate oil to No. 4 distillate oil (gallons)
	This Month	Previous 11 Months	12 Month Total

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 DATA SECTION**

FESOP Quarterly Report

Use this form only if only one (1) type of binder is used, or no binder is used in the past 12 months

Source Name: Brooks Construction Co., Inc.
 Source Address: 727 S. Beiger Street, Mishawaka, Indiana 46544
 Mailing Address: P.O. Box 9560, Fort Wayne, Indiana 46899
 FESOP No.: 141-17410-00549
 Facility: Asphalt Plant
 Parameter: VOC solvent usage per twelve (12) consecutive month period, with compliance determined at the end of each month
 Limit: Cutback asphalt rapid cure liquid binder, less than ~~97.752.63~~ **97.752.63** tons VOC solvent usage
 Cutback asphalt medium cure liquid binder, less than ~~43371.43~~ **43371.43** tons VOC solvent usage
 Cutback asphalt slow cure liquid binder, less than ~~374200.0~~ **374200.0** tons VOC solvent usage
 Emulsified asphalt with solvent liquid binder usage, less than ~~499107.76~~ **499107.76** tons VOC solvent usage
 (Based on 46.4% volatilization)
 Other asphalt with solvent liquid binder, less than ~~3,7122000.0~~ **3,7122000.0** tons VOC solvent usage
 (Based on 2.5% volatilization)
 Equivalent to VOC emissions of less than ~~97.750.0~~ **97.750.0** tons per twelve (12) consecutive month period, excluding combustion

...

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF AIR QUALITY
 COMPLIANCE DATA SECTION**

FESOP Quarterly Report

Use this form only if more than one (1) type of binder is used in the past 12 months

Source Name: Brooks Construction Co., Inc.
 Source Address: 727 S. Beiger Street, Mishawaka, Indiana 46544
 Mailing Address: P.O. Box 9560, Fort Wayne, Indiana 46899
 FESOP No.: 141-17410-00549
 Facility: Asphalt Plant
 Parameter: VOC emissions, excluding combustion, based on solvent usage
 Limit: Less than ~~97.750.0~~ **97.750.0** tons per twelve (12) consecutive month period, with compliance determined at the end of each month, using the following equation:

$$\frac{\text{Tons of solvent contained in binder}}{\text{Adjustment ratio}} = \text{tons of VOC emitted}$$

Year:

Month	Type of Liquid binder	Solvent Usage This Month (tons)	Adjustment Ratio	VOC emitted from each binder This Month (tons)	VOC emitted from all binders This Month (tons)	VOC emitted Previous 11 Months (tons)	VOC emitted 12 Month Total (tons)
	Cutback asphalt rapid cure		41.05				
	Cutback asphalt medium cure		4361.43				
	Cutback asphalt slow cure		384.0				

	Emulsified asphalt		2,042.12			
	Other asphalt		3840			
	Cutback asphalt rapid cure		41.05			
	Cutback asphalt medium cure		4,361.43			
	Cutback asphalt slow cure		384.0			
	Emulsified asphalt		2,042.12			
	Other asphalt		3840			
	Cutback asphalt rapid cure		41.05			
	Cutback asphalt medium cure		4,361.43			
	Cutback asphalt slow cure		384.0			
	Emulsified asphalt		2,042.12			
	Other asphalt		3840			

- 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 DATA SECTION
MC-61-53 IGCN 1003**

FESOP Quarterly Report

Source Name: Brooks Construction Company, Inc.
Source Address: 727 South Beiger Street, Mishawaka, Indiana, 46544
Mailing Address: P.O. Box 9560, Fort Wayne, Indiana 46899
FESOP No.: F039-17410-03325
Facility: One (1) drum dryer/mixer
Parameter: Hot mix asphalt production
Limit: 1,500,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month

QUARTER: _____ YEAR: _____

Month	Asphalt Produced (tons)	Asphalt Produced (tons)	Asphalt Produced (tons)
	This Month	Previous 11 Months	12 Month Total

- 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.

Conclusion and Recommendation

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant. An application for the purposes of this review was received on November 14, 2007.

The construction and operation of this proposed revision shall be subject to the conditions of the attached proposed FESOP Significant Revision No. F141-25539-00549. The staff recommends to the Commissioner that this FESOP Significant Revision be approved.

IDEM Contact

- (a) Questions regarding this proposed permit can be directed to Rebecca Jacobs at the Indiana Department Environmental Management, Office of Air Quality, Permits Branch, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana 46204-2251 or by telephone at (317) 234-5378 or toll free at 1-800-451-6027 extension 4-5378.
- (b) A copy of the findings is available on the Internet at: www.in.gov/idem/permits/air/pending.html.
- (c) For additional information about air permits and how the public and interested parties can participate, refer to the IDEM's Guide for Citizen Participation and Permit Guide on the Internet at: www.in.gov/idem/permits/guide/.

**ATSD Appendix A: Emissions Calculations
Unlimited/Uncontrolled Waste Oil Combustion
Drum Dryer/Mixer**

**Company Name: Brooks Construction Co., Inc.
Source Address: 727 S. Beiger Street, Mishawaka, Indiana 46544
Significant Permit Revision No.: 141-25539-00549
Reviewer: Rebecca Jacobs**

The following calculations determine the Unlimited/Uncontrolled emissions created from the waste oil combustion in the dryer/mixer.

Maximum Capacity

Maximum Fuel Input Rate =	92.5	MMBtu/hr
Equivalent Used/Waste Oil Usage =	5,787.857	gal/yr
	1.00	% sulfur
	0.65	% ash
	0.40	% chlorine
	0.01	% lead

Unlimited/Uncontrolled Emissions from Combustion of Waste Oil

Criteria Pollutant	Emission Factor (lb/kgal)	Unlimited/Uncontrolled Potential to Emit (tons/yr)
PM	41.6	120.39
PM10	33.15	95.93
SO2	147.0	425.41
NOx	19.0	54.98
VOC	1.0	2.89
CO	5.0	14.47
Hazardous Air Pollutant		
HCl	26.4	76.40
Antimony	negl	negl
Arsenic	1.1E-01	3.18E-01
Beryllium	negl	negl
Cadmium	9.3E-03	2.69E-02
Chromium	2.0E-02	5.79E-02
Cobalt	2.1E-04	6.08E-04
Lead	0.55	1.6E+00
Manganese	6.8E-02	1.97E-01
Mercury		
Nickel	1.1E-02	3.18E-02
Selenium	negl	negl
1,1,1-Trichloroethane		
1,3-Butadiene		
Acetaldehyde		
Acrolein		
Benzene		
Bis(2-ethylhexyl)phthalate	2.2E-03	6.37E-03
Dichlorobenzene	8.0E-07	2.32E-06
Ethylbenzene		
Formaldehyde		
Hexane		
Phenol	2.4E-03	6.95E-03
Toluene		
Total PAH Haps	3.9E-02	1.13E-01
Polycyclic Organic Matter		
Xylene		
Total HAPs		78.75

Methodology

Equivalent Waste Oil Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.140 MMBtu]
 Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Fuel Usage (gals/yr)] * [Emission Factor (lb/kgal)] * [kgal/1000 gal] * [ton/2000 lbs]
 Waste Oil Combustion Emission Factors from AP-42 Chapter 1.11 (dated 10/96), Tables 1.11-1, 1.11-2, 1.11-3, 1.11-4, and 1.11-5

Abbreviations

PM = Particulate Matter	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	

**ATSD Appendix A: Emissions Calculations
Limited Emission Summary**

Company Name: Brooks Construction Co., Inc.
Source Address: 727 S. Beiger Street, Mishawaka, Indiana 46544
Significant Permit Revision No.: 141-25539-00549
Reviewer: Rebecca Jacobs

Asphalt Plant Limitations

Annual Asphalt Production Limitation =	1,500,000	ton/yr
Natural Gas Limitation =	810.3	MMCF/yr
No. 2 Fuel Oil Limitation =	2,530,000	gal/yr, and 0.50 % sulfur
Refinery Blend Fuel Oil Limitation =	1,320,000	gal/yr, and 1.00 % sulfur
Used/Waste Oil Limitation =	750,000	gal/yr, and 1.00 % sulfur 0.65 % ash 0.400 % chlorine, 0.010 % lead
PM Dryer/Mixer Limitation =	0.150	lb/ton of asphlt production
PM10 Dryer/Mixer Limitation =	0.050	lb/ton of asphlt production
CO Dryer/Mixer Limitation =	0.130	lb/ton of asphlt production
VOC Dryer/Mixer Limitation =	0.032	lb/ton of asphlt production
Cold Mix Asphalt VOC Usage Limitation =	50.0	tons/yr

Limited/Controlled Emissions

Process Description	Limited/Controlled Potential Emissions (tons/year)							
	Criteria Pollutants						Hazardous Air Pollutants	
	PM	PM10	SO2	NOx	VOC	CO	Total HAPs	Worst Case HAP
Ducted Emissions								
Fuel Combustion (worst case)	15.60	12.43	99.00	40.52	2.23	34.03	11.08	9.90 (hydrogen chloride)
Dryer/Mixer	112.50	37.50	43.50	41.25	24.00	97.50	7.99	2.33 (formaldehyde)
Worst Case Emissions	112.50	37.50	99.00	41.25	24.00	97.50	11.08	9.90 (hydrogen chloride)
Fugitive Emissions								
Asphalt Load-Out, Silo Filling, On-Site Yard	0.83	0.83	0	0	12.85	2.16	0.21	0.07 (formaldehyde)
Hot Oil and Asphalt Heaters	0	0	0	0	1.2E-03	0.06	1.3E-03	8.0E-04 (naphthalene)
Material Storage Piles	2.38	0.83	0	0	0	0	0	0
Material Processing and Handling	4.85	2.29	0	0	0	0	0	0
Material Screening and Conveying	19.95	6.98	0	0	0	0	0	0
Paved and Unpaved Roads (worst case)	88.76	22.62	0	0	0	0	0	0
Cold Mix Asphalt Production	0	0	0	0	50.00	0	13.04	4.50 (xylenes)
Volatile Organic Liquid Storage Vessels	0	0	0	0	negl.	0	negl.	negl.
Total Fugitive Emissions	116.76	33.56	0	0	62.85	2.22	13.26	4.50 (xylenes)
Totals Limited/Controlled Emissions	229.26	71.06	99.00	41.25	86.85	99.72	24.34	9.90 (hydrogen chloride)

negl = negligible

**ATSD Appendix A: Emissions Calculations
Limited Emissions
Fuel Combustion**

**Company Name: Brooks Construction Co., Inc.
Source Address: 727 S. Beiger Street, Mishawaka, Indiana 46544
Significant Permit Revision No.: 141-25539-00549
Reviewer: Rebecca Jacobs**

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

Annual Asphalt Production Limitation =	1,500,000	ton/yr						
Natural Gas Limitation =	810.30	MMCF/yr						
No. 2 Fuel Oil Limitation =	2,530,000	gal/yr, and	0.50	% sulfur				
Refinery Blend Fuel Oil Limitation =	1,320,000	gal/yr, and	1.00	% sulfur				
Waste Oil Limitation =	750,000	gal/yr, and	1.00	% sulfur	0.65	% ash	0.400	% chloride, 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)	Refinery Blend Fuel Oil (lb/kgal)	Used/ Waste Oil (lb/kgal)	Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)	Refinery Blend Fuel Oil (tons/yr)	Used/ Waste Oil (tons/yr)	Worse Case Fuel (tons/yr)
PM	1.9	2	7	41.6	0.77	2.53	4.62	15.60	15.6
PM10	7.6	3.3	8.3	33.15	3.08	4.17	5.48	12.43	12.43
SO2	0.6	71.0	150.0	147.0	0.24	89.82	99.00	55.13	99.00
NOx	100	20.0	20.0	19.0	40.52	25.30	13.20	7.13	40.52
VOC	5.5	0.20	0.20	1.0	2.23	0.25	0.13	0.38	2.23
CO	84	5.0	5.0	5.0	34.03	6.33	3.30	1.88	34.03
Hazardous Air Pollutant									
HCl				26.4				9.90	9.90
Antimony			5.25E-03	negl			3.47E-03	negl	3.5E-03
Arsenic	2.0E-04	5.6E-04	1.32E-03	1.1E-01	8.1E-05	7.08E-04	8.71E-04	4.13E-02	4.1E-02
Beryllium	1.2E-05	4.2E-04	2.78E-05	negl	4.9E-06	5.31E-04	1.83E-05	negl	5.3E-04
Cadmium	1.1E-03	4.2E-04	3.98E-04	9.3E-03	4.5E-04	5.31E-04	2.63E-04	3.49E-03	3.5E-03
Chromium	1.4E-03	4.2E-04	8.45E-04	2.0E-02	5.7E-04	5.31E-04	5.58E-04	7.50E-03	7.5E-03
Cobalt	8.4E-05		6.02E-03	2.1E-04	3.4E-05		3.97E-03	7.88E-05	4.0E-03
Lead	5.0E-04	1.3E-03	1.51E-03	0.55	2.0E-04	1.59E-03	9.97E-04	2.1E-01	0.21
Manganese	3.8E-04	8.4E-04	3.00E-03	6.8E-02	1.5E-04	1.06E-03	1.98E-03	2.55E-02	0.03
Mercury	2.6E-04	4.2E-04	1.13E-04		1.1E-04	5.31E-04	7.46E-05		5.3E-04
Nickel	2.1E-03	4.2E-04	8.45E-02	1.1E-02	8.5E-04	5.31E-04	5.58E-02	4.13E-03	0.056
Selenium	2.4E-05	2.1E-03	6.83E-04	negl	9.7E-06	2.66E-03	4.51E-04	negl	2.7E-03
1,1,1-Trichloroethane			2.36E-04				1.56E-04		1.6E-04
1,3-Butadiene									0.0E+00
Acetaldehyde									0.0E+00
Acrolein									0.0E+00
Benzene	2.1E-03		2.14E-04		8.5E-04		1.41E-04		8.5E-04
Bis(2-ethylhexyl)phthalate				2.2E-03				8.25E-04	8.3E-04
Dichlorobenzene	1.2E-03			8.0E-07	4.9E-04			3.00E-07	4.9E-04
Ethylbenzene			6.36E-05				4.20E-05		4.2E-05
Formaldehyde	7.5E-02	6.10E-02	3.30E-02		3.0E-02	7.72E-02	2.18E-02		0.077
Hexane	1.8E+00				0.73				0.729
Phenol				2.4E-03				9.00E-04	9.0E-04
Toluene	3.4E-03		6.20E-03		1.4E-03		4.09E-03		4.1E-03
Total PAH Haps	negl		1.13E-03	3.9E-02	negl		7.46E-04	1.47E-02	1.5E-02
Polycyclic Organic Matter		3.30E-03				4.17E-03			4.2E-03
Xylene			1.09E-04				7.19E-05		7.2E-05
Total HAPs					0.76	0.09	0.10	10.20	11.08

Methodology

Natural Gas: Limited Potential to Emit (tons/yr) = (Natural Gas Limitation (MMCF/yr)) * (Emission Factor (lb/MMCF)) * (ton/2000 lbs)
 All Other Fuels: Limited Potential to Emit (tons/yr) = (Fuel Limitation (gals/yr)) * (Emission Factor (lb/kgal)) * (kgal/1000 gal) * (ton/2000 lbs)
 Sources of AP-42 Emission Factors for fuel combustion:
 Natural Gas : AP-42 Chapter 1.4 (dated 7/98), Tables 1.4-1, 1.4-2, 1.4-3, and 1.4-4
 No. 2 and Refinery Blend 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
 Waste Oil: AP-42 Chapter 1.11 (dated 10/96), Tables 1.11-1, 1.11-2, 1.11-3, 1.11-4, and 1.11-4

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

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

Company Name: Brooks Construction Co., Inc.
Source Address: 727 S. Beiger Street, Mishawaka, Indiana 46544
Significant Permit Revision No.: 141-25539-00549
Reviewer: Rebecca Jacobs

The following calculations determine the fuel equivalencies for each of the fuels as compared to refinery blend fuel oil (assumed similar to No. 4 fuel oil) for sulfur dioxide (SO₂)

Fuel Type	SO ₂ Equivalency					
	Limited Sulfur Content	Limited Sulfur Content Units	AP-42 Emission Factor	Emission Factor Units	Fuel Equivalency	Fuel Equivalency Units
Natural Gas	NA	NA	0.6	lb/MMCF	250.0	MMCF natural gas / 1000 gal refinery blend fuel oi
No. 2 Fuel Oil	0.50	% by weight	71.00	lb/kgal	2.11	gal No. 2 fuel oil / gal refinery blend fuel oil
Refinery Blend Fuel Oil (No. 4 Fuel Oil)	1.00	% by weight	150.00	lb/kgal	1.00	gal refinery blend fuel oil / gal refinery blend fuel oi
Waste Oil	1.00	% by weight	147.00	lb/kgal	1.02	gal waste oil / gal refinery blend fuel oi

Methodology

Fuel Equivalency = [AP-42 Emission Factor for refinery blend 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 and No.4 (industrial boiler < 100 MMBtu/hr): AP-42 Chapter 1.3 (dated 9/98), Table 1.3-1
- Waste Oil (small boiler): AP-42 Chapter 1.11 (dated 10/96), Table 1.11-2

Appendix A: Emissions Calculations
Unlimited/Uncontrolled Waste Oil Combustion
Drum Dryer/Mixer

Company Name: Brooks Construction Co., Inc.
Source Address: 727 S. Beiger Street, Mishawaka, Indiana 46544
Significant Permit Revision No.: 141-25539-00549
Reviewer: Rebecca Jacobs

The following calculations determine the Unlimited/Uncontrolled emissions created from the waste oil combustion in the dryer/mixer.

Maximum Capacity

Maximum Fuel Input Rate =	92.5	MMBtu/hr
Equivalent Used/Waste Oil Usage =	5,787.857	gal/yr
	0.50	% sulfur
	0.65	% ash
	0.40	% chlorine
	0.01	% lead

Unlimited/Uncontrolled Emissions from Combustion of Waste Oil

Criteria Pollutant	Emission Factor (lb/kgal)	Unlimited/Uncontrolled Potential to Emit (tons/yr)
PM	41.6	120.39
PM10	33.15	95.93
SO2	73.5	212.70
NOx	19.0	54.98
VOC	1.0	2.89
CO	5.0	14.47
Hazardous Air Pollutant		
HCl	26.4	76.40
Antimony	negl	negl
Arsenic	1.1E-01	3.18E-01
Beryllium	negl	negl
Cadmium	9.3E-03	2.69E-02
Chromium	2.0E-02	5.79E-02
Cobalt	2.1E-04	6.08E-04
Lead	0.55	1.6E+00
Manganese	6.8E-02	1.97E-01
Mercury		
Nickel	1.1E-02	3.18E-02
Selenium	negl	negl
1,1,1-Trichloroethane		
1,3-Butadiene		
Acetaldehyde		
Acrolein		
Benzene		
Bis(2-ethylhexyl)phthalate	2.2E-03	6.37E-03
Dichlorobenzene	8.0E-07	2.32E-06
Ethylbenzene		
Formaldehyde		
Hexane		
Phenol	2.4E-03	6.95E-03
Toluene		
Total PAH Haps	3.9E-02	1.13E-01
Polycyclic Organic Matter		
Xylene		
Total HAPs		78.75

Methodology

Equivalent Waste Oil Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.140 MMBtu]
 Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Fuel Usage (gals/yr)] * [Emission Factor (lb/kgal)] * [kgal/1000 gal] * [ton/2000 lbs]
 Waste Oil Combustion Emission Factors from AP-42 Chapter 1.11 (dated 10/96), Tables 1.11-1, 1.11-2, 1.11-3, 1.11-4, and 1.11-5

Abbreviations

PM = Particulate Matter	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: Emissions Calculations
Limited Emission Summary**

Company Name: Brooks Construction Co., Inc.
Source Address: 727 S. Beiger Street, Mishawaka, Indiana 46544
Significant Permit Revision No.: 141-25539-00549
Reviewer: Rebecca Jacobs

Asphalt Plant Limitations

Annual Asphalt Production Limitation =	1,500,000	ton/yr
Natural Gas Limitation =	810.3	MMCF/yr
No. 2 Fuel Oil Limitation =	2,530,000	gal/yr, and 0.50 % sulfur
Refinery Blend Fuel Oil Limitation =	1,320,000	gal/yr, and 1.00 % sulfur
Used/Waste Oil Limitation =	750,000	gal/yr, and 0.50 % sulfur 0.65 % ash 0.400 % chlorine, 0.010 % lead
PM Dryer/Mixer Limitation =	0.150	lb/ton of asphlt production
PM10 Dryer/Mixer Limitation =	0.050	lb/ton of asphlt production
CO Dryer/Mixer Limitation =	0.130	lb/ton of asphlt production
VOC Dryer/Mixer Limitation =	0.032	lb/ton of asphlt production
Cold Mix Asphalt VOC Usage Limitation =	50.0	tons/yr

Limited/Controlled Emissions

Process Description	Limited/Controlled Potential Emissions (tons/year)							
	Criteria Pollutants						Hazardous Air Pollutants	
	PM	PM10	SO2	NOx	VOC	CO	Total HAPs	Worst Case HAP
Ducted Emissions								
Fuel Combustion (worst case)	15.60	12.43	99.00	40.52	2.23	34.03	11.08	9.90 (hydrogen chloride)
Dryer/Mixer	112.50	37.50	43.50	41.25	24.00	97.50	7.99	2.33 (formaldehyde)
Worst Case Emissions	112.50	37.50	99.00	41.25	24.00	97.50	11.08	9.90 (hydrogen chloride)
Fugitive Emissions								
Asphalt Load-Out, Silo Filling, On-Site Yard	0.83	0.83	0	0	12.85	2.16	0.21	0.07 (formaldehyde)
Hot Oil and Asphalt Heaters	0	0	0	0	1.2E-03	0.06	1.3E-03	8.0E-04 (naphthalene)
Material Storage Piles	2.38	0.83	0	0	0	0	0	0
Material Processing and Handling	4.85	2.29	0	0	0	0	0	0
Material Screening and Conveying	19.95	6.98	0	0	0	0	0	0
Paved and Unpaved Roads (worst case)	88.76	22.62	0	0	0	0	0	0
Cold Mix Asphalt Production	0	0	0	0	50.00	0	13.04	4.50 (xylenes)
Volatile Organic Liquid Storage Vessels	0	0	0	0	negl.	0	negl.	negl.
Total Fugitive Emissions	116.76	33.56	0	0	62.85	2.22	13.26	4.50 (xylenes)
Totals Limited/Controlled Emissions	229.26	71.06	99.00	41.25	86.85	99.72	24.34	9.90 (hydrogen chloride)

negl = negligible

Appendix A: Emissions Calculations
Limited Emissions
Fuel Combustion

Company Name: Brooks Construction Co., Inc.
Source Address: 727 S. Beiger Street, Mishawaka, Indiana 46544
Significant Permit Revision No.: 141-25539-00549
Reviewer: Rebecca Jacobs

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

Annual Asphalt Production Limitation =	1,500,000	ton/yr						
Natural Gas Limitation =	810.30	MMCF/yr						
No. 2 Fuel Oil Limitation =	2,530,000	gal/yr, and	0.50	% sulfur				
Refinery Blend Fuel Oil Limitation =	1,320,000	gal/yr, and	1.00	% sulfur				
Waste Oil Limitation =	750,000	gal/yr, and	0.50	% sulfur	0.65	% ash	0.400	% chloride, 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)	Refinery Blend Fuel Oil (lb/kgal)	Used/ Waste Oil (lb/kgal)	Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)	Refinery Blend Fuel Oil (tons/yr)	Used/ Waste Oil (tons/yr)	Worse Case Fuel (tons/yr)
PM	1.9	2	7	41.6	0.77	2.53	4.62	15.60	15.6
PM10	7.6	3.3	8.3	33.15	3.08	4.17	5.48	12.43	12.43
SO2	0.6	71.0	150.0	73.5	0.24	89.82	99.00	27.56	99.00
NOx	100	20.0	20.0	19.0	40.52	25.30	13.20	7.13	40.52
VOC	5.5	0.20	0.20	1.0	2.23	0.25	0.13	0.38	2.23
CO	84	5.0	5.0	5.0	34.03	6.33	3.30	1.88	34.03
Hazardous Air Pollutant									
HCl				26.4				9.90	9.90
Antimony			5.25E-03	negl			3.47E-03	negl	3.5E-03
Arsenic	2.0E-04	5.6E-04	1.32E-03	1.1E-01	8.1E-05	7.08E-04	8.71E-04	4.13E-02	4.1E-02
Beryllium	1.2E-05	4.2E-04	2.78E-05	negl	4.9E-06	5.31E-04	1.83E-05	negl	5.3E-04
Cadmium	1.1E-03	4.2E-04	3.98E-04	9.3E-03	4.5E-04	5.31E-04	2.63E-04	3.49E-03	3.5E-03
Chromium	1.4E-03	4.2E-04	8.45E-04	2.0E-02	5.7E-04	5.31E-04	5.58E-04	7.50E-03	7.5E-03
Cobalt	8.4E-05		6.02E-03	2.1E-04	3.4E-05		3.97E-03	7.88E-05	4.0E-03
Lead	5.0E-04	1.3E-03	1.51E-03	0.55	2.0E-04	1.59E-03	9.97E-04	2.1E-01	0.21
Manganese	3.8E-04	8.4E-04	3.00E-03	6.8E-02	1.5E-04	1.06E-03	1.98E-03	2.55E-02	0.03
Mercury	2.6E-04	4.2E-04	1.13E-04		1.1E-04	5.31E-04	7.46E-05		5.3E-04
Nickel	2.1E-03	4.2E-04	8.45E-02	1.1E-02	8.5E-04	5.31E-04	5.58E-02	4.13E-03	0.056
Selenium	2.4E-05	2.1E-03	6.83E-04	negl	9.7E-06	2.66E-03	4.51E-04	negl	2.7E-03
1,1,1-Trichloroethane			2.36E-04				1.56E-04		1.6E-04
1,3-Butadiene									0.0E+00
Acetaldehyde									0.0E+00
Acrolein									0.0E+00
Benzene	2.1E-03		2.14E-04		8.5E-04		1.41E-04		8.5E-04
Bis(2-ethylhexyl)phthalate				2.2E-03				8.25E-04	8.3E-04
Dichlorobenzene	1.2E-03			8.0E-07	4.9E-04			3.00E-07	4.9E-04
Ethylbenzene			6.36E-05				4.20E-05		4.2E-05
Formaldehyde	7.5E-02	6.10E-02	3.30E-02		3.0E-02	7.72E-02	2.18E-02		0.077
Hexane	1.8E+00				0.73				0.729
Phenol				2.4E-03				9.00E-04	9.0E-04
Toluene	3.4E-03		6.20E-03		1.4E-03		4.09E-03		4.1E-03
Total PAH Haps	negl		1.13E-03	3.9E-02	negl		7.46E-04	1.47E-02	1.5E-02
Polycyclic Organic Matter		3.30E-03				4.17E-03			4.2E-03
Xylene			1.09E-04				7.19E-05		7.2E-05
Total HAPs					0.76	0.09	0.10	10.20	11.08

Methodology

Natural Gas: Limited Potential to Emit (tons/yr) = (Natural Gas Limitation (MMCF/yr)) * (Emission Factor (lb/MMCF)) * (ton/2000 lbs)
 All Other Fuels: Limited Potential to Emit (tons/yr) = (Fuel Limitation (gals/yr)) * (Emission Factor (lb/kgal)) * (kgal/1000 gal) * (ton/2000 lbs)
 Sources of AP-42 Emission Factors for fuel combustion:
 Natural Gas : AP-42 Chapter 1.4 (dated 7/98), Tables 1.4-1, 1.4-2, 1.4-3, and 1.4-4
 No. 2 and Refinery Blend 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
 Waste Oil: AP-42 Chapter 1.11 (dated 10/96), Tables 1.11-1, 1.11-2, 1.11-3, 1.11-4, and 1.11-4

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 = Polyaromatic Hydrocarbon

Appendix A: Emissions Calculations

Limited Emissions

Dryer/Mixer

Volatile Organic Compounds and Hazardous Air Pollutants

Company Name: Brooks Construction Co., Inc.

Source Address: 727 S. Beiger Street, Mishawaka, Indiana 46544

Significant Permit Revision No.: 141-25539-00549

Reviewer: Rebecca Jacobs

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

Annual Asphalt Production Limitation =	1,500,000	ton/yr
PM Dryer/Mixer Limitation =	0.150	lb/ton of asphalt production
PM10 Dryer/Mixer Limitation =	0.050	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	No. 6 Fuel Oil or Waste Oil	Natural Gas	No. 2 Fuel Oil	No. 6 Fuel Oil or Waste Oil	
PM	0.15	0.15	0.15	112.5	112.5	112.5	112.5
PM10	0.05	0.05	0.05	37.5	37.5	37.5	37.5
SO2	0.0034	0.011	0.058	2.6	8.3	43.5	43.5
NOx	0.026	0.055	0.055	19.5	41.3	41.3	41.3
VOC	0.032	0.032	0.032	24.0	24.0	24.0	24.0
CO	0.13	0.13	0.13	97.5	97.5	97.5	97.5
Hazardous Air Pollutant							
HCl			2.10E-04			0.16	0.16
Antimony	1.80E-07	1.80E-07	1.80E-07	1.35E-04	1.35E-04	1.35E-04	1.35E-04
Arsenic	5.60E-07	5.60E-07	5.60E-07	4.20E-04	4.20E-04	4.20E-04	4.20E-04
Beryllium	negl	negl	negl	negl	negl	negl	0.00E+00
Cadmium	4.10E-07	4.10E-07	4.10E-07	3.08E-04	3.08E-04	3.08E-04	3.08E-04
Chromium	5.50E-06	5.50E-06	5.50E-06	4.13E-03	4.13E-03	4.13E-03	4.13E-03
Cobalt	2.60E-08	2.60E-08	2.60E-08	1.95E-05	1.95E-05	1.95E-05	1.95E-05
Lead	6.20E-07	1.50E-05	1.50E-05	4.65E-04	1.13E-02	1.13E-02	1.13E-02
Manganese	7.70E-06	7.70E-06	7.70E-06	5.78E-03	5.78E-03	5.78E-03	5.78E-03
Mercury	2.40E-07	2.60E-06	2.60E-06	1.80E-04	1.95E-03	1.95E-03	1.95E-03
Nickel	6.30E-05	6.30E-05	6.30E-05	4.73E-02	4.73E-02	4.73E-02	4.73E-02
Selenium	3.50E-07	3.50E-07	3.50E-07	2.63E-04	2.63E-04	2.63E-04	2.63E-04
2,2,4 Trimethylpentane	4.00E-05	4.00E-05	4.00E-05	3.00E-02	3.00E-02	3.00E-02	3.00E-02
Acetaldehyde			1.30E-03			0.98	0.98
Acrolein			2.60E-05			1.95E-02	1.95E-02
Benzene	3.90E-04	3.90E-04	3.90E-04	0.29	0.29	0.29	0.29
Ethylbenzene	2.40E-04	2.40E-04	2.40E-04	0.18	0.18	0.18	0.18
Formaldehyde	3.10E-03	3.10E-03	3.10E-03	2.33	2.33	2.33	2.33
Hexane	9.20E-04	9.20E-04	9.20E-04	0.69	0.69	0.69	0.69
Methyl chloroform	4.80E-05	4.80E-05	4.80E-05	0.04	0.04	0.04	0.04
MEK			2.00E-05			0.02	0.02
Propionaldehyde			1.30E-04			0.10	0.10
Quinone			1.60E-04			0.12	0.12
Toluene	1.50E-04	2.90E-03	2.90E-03	0.11	2.18	2.18	2.18
Total PAH Haps	1.90E-04	8.80E-04	8.80E-04	0.14	0.66	0.66	0.66
Xylene	2.00E-04	2.00E-04	2.00E-04	0.15	0.15	0.15	0.15
Total HAPs						7.99	
Worst Single HAP						2.325	(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, 11.1-7, 11.1-8, 11.1-10, and 11.1-11

*Emission of PM, PM10, SO2, NOx, and CO from Drum-Mix Plants are included with the emission calculations for fuel combustion

Abbreviations

VOC - Volatile Organic Compounds

HCl = Hydrogen Chloride

SO2 = Sulfur Dioxide

HAP = Hazardous Air Pollutant

PAH = Polyaromatic Hydrocarbon

Appendix A: Emissions Calculations
Limited Emissions
Load-Out, Silo Filling, and On-Site Yard Emissions

Company Name: Brooks Construction Co., Inc.
Source Address: 727 S. Beiger Street, Mishawaka, Indiana 46544
Significant Permit Revision No.: 141-25539-00549
Reviewer: Rebecca Jacobs

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 =	1,500,000	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	0.39	0.44	NA	0.83
Organic PM	3.4E-04	2.5E-04	NA	0.26	0.190	NA	0.45
TOC	0.004	0.012	0.001	3.12	9.14	0.825	13.1
CO	0.001	0.001	3.5E-04	1.01	0.885	0.264	2.16

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

PM/HAPs	0.018	0.022	0	0.040
VOC/HAPs	0.046	0.116	0.012	0.174
non-VOC/HAPs	2.4E-04	2.5E-05	6.4E-05	3.3E-04
non-VOC/non-HAPs	0.23	0.13	0.06	0.42

Total VOCs	2.93	9.14	0.8	12.8
Total HAPs	0.06	0.14	0.012	0.21
Worst Single HAP				0.067
				(formaldehyde)

Methodology

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

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

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

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

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

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

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

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

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

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

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

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

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

Abbreviations

- TOC = Total Organic Compounds
- CO = Carbon Monoxide
- PM = Particulate Matter
- HAP = Hazardous Air Pollutant
- VOC = Volatile Organic Compound

**Appendix A: Emissions Calculations
Limited Emissions
Load-Out, Silo Filling, and On-Site Yard Emissions (continued)**

Company Name: Brooks Construction Co., Inc.
Source Address: 727 S. Beiger Street, Mishawaka, Indiana 46544
Significant Permit Revision No.: 141-25539-00549
Reviewer: Rebecca Jacobs

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%	6.6E-04	8.9E-04	NA	1.6E-03
Acenaphthylene	208-96-8	PM/HAP	POM	Organic PM	0.028%	0.014%	7.2E-05	2.7E-05	NA	9.8E-05
Anthracene	120-12-7	PM/HAP	POM	Organic PM	0.07%	0.13%	1.8E-04	2.5E-04	NA	4.3E-04
Benzo(a)anthracene	56-55-3	PM/HAP	POM	Organic PM	0.019%	0.056%	4.9E-05	1.1E-04	NA	1.6E-04
Benzo(b)fluoranthene	205-99-2	PM/HAP	POM	Organic PM	0.0076%	0	1.9E-05	0	NA	1.9E-05
Benzo(k)fluoranthene	207-08-9	PM/HAP	POM	Organic PM	0.0022%	0	5.6E-06	0	NA	5.6E-06
Benzo(g,h,i)perylene	191-24-2	PM/HAP	POM	Organic PM	0.0019%	0	4.9E-06	0	NA	4.9E-06
Benzo(a)pyrene	50-32-8	PM/HAP	POM	Organic PM	0.0023%	0	5.9E-06	0	NA	5.9E-06
Benzo(e)pyrene	192-97-2	PM/HAP	POM	Organic PM	0.0078%	0.0095%	2.0E-05	1.8E-05	NA	3.8E-05
Chrysene	218-01-9	PM/HAP	POM	Organic PM	0.103%	0.21%	2.6E-04	4.0E-04	NA	6.6E-04
Dibenz(a,h)anthracene	53-70-3	PM/HAP	POM	Organic PM	0.00037%	0	9.5E-07	0	NA	9.5E-07
Fluoranthene	206-44-0	PM/HAP	POM	Organic PM	0.05%	0.15%	1.3E-04	2.9E-04	NA	4.1E-04
Fluorene	86-73-7	PM/HAP	POM	Organic PM	0.77%	1.01%	2.0E-03	1.9E-03	NA	3.9E-03
Indeno(1,2,3-cd)pyrene	193-39-5	PM/HAP	POM	Organic PM	0.00047%	0	1.2E-06	0	NA	1.2E-06
2-Methylnaphthalene	91-57-6	PM/HAP	POM	Organic PM	2.38%	5.27%	6.1E-03	1.0E-02	NA	0.016
Naphthalene	91-20-3	PM/HAP	POM	Organic PM	1.25%	1.82%	3.2E-03	3.5E-03	NA	6.7E-03
Perylene	198-55-0	PM/HAP	POM	Organic PM	0.022%	0.03%	5.6E-05	5.7E-05	NA	1.1E-04
Phenanthrene	85-01-8	PM/HAP	POM	Organic PM	0.81%	1.80%	2.1E-03	3.4E-03	NA	5.5E-03
Pyrene	129-00-0	PM/HAP	POM	Organic PM	0.15%	0.44%	3.8E-04	8.4E-04	NA	1.2E-03
Total PAH HAPs							0.015	0.022	NA	0.037
Other semi-volatile HAPs										
Phenol		PM/HAP	---	Organic PM	1.18%	0	3.0E-03	0	0	3.0E-03

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

Methodology

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

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

Abbreviations

PM = Particulate Matter

HAP = Hazardous Air Pollutant

POM = Polycyclic Organic Matter

**Appendix A: General Asphalt FESOP Emissions Calculations
Limited Emissions
Load-Out, Silo Filling, and On-Site Yard Emissions (continued)**

Organic Volatile-Based Compounds (Table 11.1-16)

Pollutant	CASRN	Category	HAP Type	Source	Speciation Profile		Limited Potential to Emit (tons/yr)			
					Load-out and Onsite Yard (% by weight of TOC)	Silo Filling and Asphalt Storage Tank (% by weight of TOC)	Load-out	Silo Filling	Onsite Yard	Total
VOC		VOC	---	TOC	94%	100%	2.93	9.14	0.78	12.85
non-VOC/non-HAPS										
Methane	74-82-8	non-VOC/non-HAP	---	TOC	6.50%	0.26%	2.0E-01	2.4E-02	5.4E-02	0.280
Acetone	67-64-1	non-VOC/non-HAP	---	TOC	0.046%	0.055%	1.4E-03	5.0E-03	3.8E-04	0.007
Ethylene	74-85-1	non-VOC/non-HAP	---	TOC	0.71%	1.10%	2.2E-02	1.0E-01	5.9E-03	0.129
Total non-VOC/non-HAPS					7.30%	1.40%	0.228	0.128	0.060	0.42
Volatile organic HAPs										
Benzene	71-43-2	VOC/HAP	---	TOC	0.052%	0.032%	1.6E-03	2.9E-03	4.3E-04	5.0E-03
Bromomethane	74-83-9	VOC/HAP	---	TOC	0.0096%	0.0049%	3.0E-04	4.5E-04	7.9E-05	8.3E-04
2-Butanone	78-93-3	VOC/HAP	---	TOC	0.049%	0.039%	1.5E-03	3.6E-03	4.0E-04	5.5E-03
Carbon Disulfide	75-15-0	VOC/HAP	---	TOC	0.013%	0.016%	4.1E-04	1.5E-03	1.1E-04	2.0E-03
Chloroethane	75-00-3	VOC/HAP	---	TOC	0.00021%	0.004%	6.6E-06	3.7E-04	1.7E-06	3.7E-04
Chloromethane	74-87-3	VOC/HAP	---	TOC	0.015%	0.023%	4.7E-04	2.1E-03	1.2E-04	2.7E-03
Cumene	92-82-8	VOC/HAP	---	TOC	0.11%	0	3.4E-03	0	9.1E-04	4.3E-03
Ethylbenzene	100-41-4	VOC/HAP	---	TOC	0.28%	0.038%	8.7E-03	3.5E-03	2.3E-03	0.015
Formaldehyde	50-00-0	VOC/HAP	---	TOC	0.088%	0.69%	2.7E-03	6.3E-02	7.3E-04	0.067
n-Hexane	100-54-3	VOC/HAP	---	TOC	0.15%	0.10%	4.7E-03	9.1E-03	1.2E-03	0.015
Isooctane	540-84-1	VOC/HAP	---	TOC	0.0018%	0.00031%	5.6E-05	2.8E-05	1.5E-05	9.9E-05
Methylene Chloride	75-09-2	non-VOC/HAP	---	TOC	0	0.00027%	0	2.5E-05	0	2.5E-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%	2.3E-04	4.9E-04	6.0E-05	7.8E-04
Tetrachloroethene	127-18-4	non-VOC/HAP	---	TOC	0.0077%	0	2.4E-04	0	6.4E-05	3.0E-04
Toluene	100-88-3	VOC/HAP	---	TOC	0.21%	0.062%	6.6E-03	5.7E-03	1.7E-03	0.014
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	4.1E-05	0	1.1E-05	5.1E-05
m-/p-Xylene	1330-20-7	VOC/HAP	---	TOC	0.41%	0.20%	1.3E-02	1.8E-02	3.4E-03	0.034
o-Xylene	95-47-6	VOC/HAP	---	TOC	0.08%	0.057%	2.5E-03	5.2E-03	6.6E-04	8.4E-03
Total volatile organic HAPs					1.50%	1.30%	0.047	0.119	0.012	0.178

Methodology

Limited Potential to Emit (tons/yr) = [Speciation Profile (%)] * [TOC (tons/yr)]

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

Abbreviations

TOC = Total Organic Compounds

HAP = Hazardous Air Pollutant

VOC = Volatile Organic Compound

MTBE = Methyl tert butyl ether

**Appendix A: Emissions Calculations
Hot Oil and Asphalt Heaters**

Company Name: Brooks Construction Co., Inc.
Source Address: 727 S. Beiger Street, Mishawaka, Indiana 46544
Significant Permit Revision No.: 141-25539-00549
Reviewer: Rebecca Jacobs

The following calculations determine the fugitive emissions from the hot oil and asphalt heaters

Maximum Fuel Input Rate = 1.5 MMBtu/hr
 Equivalent Natural Gas Usage = 13.1 MMCF/yr
 Equivalent No. 2 Fuel Oil Usage = 93,857 gal/yr, and

Criteria Pollutant	Emission Factors		Potential to Emit (tons/yr)		Worse Case PTE
	Natural Gas (lb/ft3)	No. 2 Fuel Oil (lb/gal)	Natural Gas	No. 2 Fuel Oil	
VOC	2.60E-08	2.65E-05	1.71E-04	1.24E-03	1.24E-03
CO	8.90E-06	1.20E-03	0.058	0.056	0.058
Hazardous Air Pollutant					
Formaldehyde:	2.60E-08	3.50E-06	1.71E-04	1.64E-04	1.71E-04
Acenaphthene		5.30E-07		2.49E-05	2.49E-05
Acenaphthylene		2.00E-07		9.39E-06	9.39E-06
Anthracene		1.80E-07		8.45E-06	8.45E-06
Benzo(b)fluoranthene		1.00E-07		4.69E-06	4.69E-06
Fluoranthene		4.40E-08		2.06E-06	2.06E-06
Fluorene		3.20E-08		1.50E-06	1.50E-06
Naphthalene		1.70E-05		7.98E-04	7.98E-04
Phenanthrene		4.90E-06		2.30E-04	2.30E-04
Pyrene		3.20E-08		1.50E-06	1.50E-06

Total HAPs 1.25E-03
Worst Single HAP 7.98E-04 (Naphthalene)

Methodology

Equivalent Natural Gas Usage (MMCF/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 MMCF/1,000 MMBtu]
 Equivalent No. 2 Fuel Oil Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.140 MMBtu]
 Natural Gas: Potential to Emit (tons/yr) = (Natural Gas Usage (MMCF/yr))*(Emission Factor (lb/CF))*(1000000 CF/MMCF)*(ton/2000 lbs)
 No. 2 Fuel Oil: Potential to Emit (tons/yr) = (No. 2 Fuel Oil Usage (gals/yr))*(Emission Factor (lb/gal))*(ton/2000 lbs)
 1 gallon of No. 2 Fuel Oil has a heating value of 140,000 Btu
 Emission Factors from AP-42 Chapter 11.1 (dated 3/04), Table 11.1-13

Abbreviations

CO = Carbon Monoxide
 VOC = Volatile Organic Compound

**Appendix A: Emissions Calculations
Material Storage Piles**

Company Name: Brooks Construction Co., Inc.
Source Address: 727 S. Beiger Street, Mishawaka, Indiana 46544
Significant Permit Revision No.: 141-25539-00549
Reviewer: Rebecca Jacobs

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.

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

Material	Silt Content (wt %)*	Emission Factor (lb/acre/day)	Maximum Anticipated Pile Size (acres)**	PTE of PM (tons/yr)	PTE of PM10 (tons/yr)
Limestone	1.6	1.85	1.80	0.608	0.213
Sand	2.6	3.01	1.80	0.989	0.346
RAP	0.5	0.58	1.80	0.190	0.067
Gravel	1.6	1.85	0.90	0.304	0.106
Slag	3.8	4.40	0.36	0.289	0.101
Totals				2.38	0.83

Methodology

PTE of PM (tons/yr) = (Emission Factor (lb/acre/day)) * (Maximum Pile Size (acres)) * (ton/2000 lbs) * (8760 hours/yr)

PTE of PM10 (tons/yr) = (Potential PM Emissions (tons/yr)) * 35%

*Silt content values obtained from AP-42 Table 13.2.4-1 (dated 1/95)

**Maximum pile size (acres) based on FESOP No. 039-17738-03325

Abbreviations

PM = Particulate Matter

PM10 = Particulate Matter (<10 um)

PTE = Potential to Emit

Appendix A: Emissions Calculations
Limited Emissions
Fugitive Dust Emissions - Material Processing and Handling

Company Name: Brooks Construction Co., Inc.
Source Address: 727 S. Beiger Street, Mishawaka, Indiana 46544
Significant Permit Revision No.: 141-25539-00549
Reviewer: Rebecca Jacobs

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.

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

where: E_f = Emission factor (lb/ton)

k (PM) = 0.74	= particle size multiplier (0.74 assumed for aerodynamic diameter ≤ 100 μ m)
k (PM10) = 0.35	= particle size multiplier (0.35 assumed for aerodynamic diameter ≤ 10 μ m)
U = 10.2	= worst case annual mean wind speed (Source: NOAA, 2005*)
M = 4.0	= material % moisture content of aggregate (Source: AP-42 Section 11.1.1.1)
E_f (PM) = 2.27E-03	lb PM/ton of material handled
E_f (PM10) = 1.07E-03	lb PM10/ton of material handled

Annual Asphalt Production Limitation = 1,500,000 tons/yr
 Percent Asphalt Cement/Binder (weight %) = 5.0%
 Maximum Material Handling Throughput = 1,425,000 tons/yr

Type of Activity	Limited PTE of PM (tons/yr)	Limited PTE of PM10 (tons/yr)
Truck unloading of materials into storage piles	1.62	0.76
Front-end loader dumping of materials into feeder bins	1.62	0.76
Conveyor dropping material into dryer/mixer	1.62	0.76
Total (tons/yr)	4.85	2.29

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 limestone, sand, recycled asphalt pavement (RAP), gravel, slag, and other additives

*Worst case annual mean wind speed (South Bend, IN) from "Comparative Climatic Data", National Climatic Data Center, NOAA, 2005

Material Screening and Conveying (AP-42 Section 19.2.2)

To estimate potential fugitive dust emissions from raw material 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 (tons/yr)
Screening	0.025	0.0087	17.81	6.20
Conveying	0.003	0.0011	2.14	0.78
Limited Potential to Emit (tons/yr) =			19.95	6.98

Appendix A: Emissions Calculations
Limited Emissions
Fugitive Dust Emissions - Unpaved Roads

Company Name: Brooks Construction Co., Inc.
Source Address: 727 S. Beiger Street, Mishawaka, Indiana 46544
Significant Permit Revision No.: 141-25539-00549
Reviewer: Rebecca Jacobs

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 =	1,500,000	tons/yr
Percent Asphalt Cement/Binder (weight %) =	5.0%	
Maximum Material Handling Throughput =	1,425,000	tons/yr
Maximum Asphalt Cement/Binder Throughput =	75,000	tons/yr
No. 2 Fuel Oil Limitation =	2,530,000	gallons/yr

Process	Vehicle Type	Maximum Weight of Vehicle (tons)	Maximum Weight of Load (tons)	Maximum Weight of Vehicle and Load (tons/trip)	Maximum trips per year (trip/yr)	Total Weight driven per year (ton/yr)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	17.0	22.4	39.4	6.4E+04	2.5E+06	500	0.095	6024.2
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	17.0	0	17.0	6.4E+04	1.1E+06	500	0.095	6024.2
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	12.0	36.0	48.0	2.1E+03	1.0E+05	500	0.095	197.3
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.0	2.1E+03	2.5E+04	500	0.095	197.3
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	12.0	32.0	44.0	2.7E+02	1.2E+04	500	0.095	25.3
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.0	2.7E+02	3.2E+03	500	0.095	25.3
Aggregate/RAP Loader Full	Front-end loader (3 CY)	15.0	4.2	19.2	3.4E+05	6.5E+06	500	0.095	32129.3
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	15.0	0	15.0	3.4E+05	5.1E+06	500	0.095	32129.3
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	17.0	24.0	41.0	6.3E+04	2.6E+06	500	0.095	5918.6
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	17.0	0	17.0	6.3E+04	1.1E+06	500	0.095	5918.6
Total					9.4E+05	1.9E+07			8.9E+04

Average Vehicle Weight Per Trip =	20.3	tons/trip
Average Miles Per Trip =	0.095	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	
where k =	4.9	1.5	lb/mi = particle size multiplier (AP-42 Table 13.2.2-2 for Industrial Roads)
s =	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	= constant (AP-42 Table 13.2.2-2)
W =	20.3	20.3	tons = average vehicle weight (provided by source)
b =	0.45	0.45	= constant (AP-42 Table 13.2.2-2)

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

Mitigated Emission Factor, $E_{ext} = E \cdot [(365 - P)/365]$

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

	PM	PM10	
Unmitigated Emission Factor, $E_f =$	6.09	1.55	lb/mile
Mitigated Emission Factor, $E_{ext} =$	4.01	1.02	lb/mile
Dust Control Efficiency =	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)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	18.36	4.68	12.07	3.08	6.04	1.54
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	18.36	4.68	12.07	3.08	6.04	1.54
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	0.601	0.153	0.395	0.101	0.198	0.050
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	0.601	0.153	0.395	0.101	0.198	0.050
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	0.077	0.020	0.051	0.013	0.025	0.006
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	0.077	0.020	0.051	0.013	0.025	0.006
Aggregate/RAP Loader Full	Front-end loader (3 CY)	97.91	24.95	64.38	16.41	32.19	8.20
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	97.91	24.95	64.38	16.41	32.19	8.20
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	18.04	4.60	11.86	3.02	5.93	1.51
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	18.04	4.60	11.86	3.02	5.93	1.51
Totals		269.96	68.80	177.51	45.24	88.76	22.62

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)
 PTE = Potential to Emit

**Appendix A: Emissions Calculations
Limited Emissions
Fugitive Dust Emissions - Paved Roads**

**Company Name: Brooks Construction Co., Inc.
Source Address: 727 S. Beiger Street, Mishawaka, Indiana 46544
Significant Permit Revision No.: 141-25539-00549
Reviewer: Rebecca Jacobs**

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 =	1,500,000	tons/yr
Percent Asphalt Cement/Binder (weight %) =	5.0%	
Maximum Material Handling Throughput =	1,425,000	tons/yr
Maximum Asphalt Cement/Binder Throughput =	75,000	tons/yr
No. 2 Fuel Oil Limitation =	2,530,000	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	6.4E+04	2.5E+06	500	0.095	6024.2
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	17.0	0	17.00	6.4E+04	1.1E+06	500	0.095	6024.2
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	12.0	36.0	48.00	2.1E+03	1.0E+05	500	0.095	197.3
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.00	2.1E+03	2.5E+04	500	0.095	197.3
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	12.0	32.0	44.00	2.7E+02	1.2E+04	500	0.095	25.3
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.00	2.7E+02	3.2E+03	500	0.095	25.3
Aggregate/RAP Loader Full	Front-end loader (3 CY)	15.0	4.2	19.20	3.4E+05	6.5E+06	500	0.095	32129.3
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	15.0	0	15.00	3.4E+05	5.1E+06	500	0.095	32129.3
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	17.0	24.0	41.00	6.3E+04	2.6E+06	500	0.095	5918.6
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	17.0	0	17.00	6.3E+04	1.1E+06	500	0.095	5918.6
Total					9.4E+05	1.9E+07			8.9E+04

Average Vehicle Weight Per Trip =	20.3	tons/trip
Average Miles Per Trip =	0.095	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	
where k =	0.082	0.016	lb/mi = particle size multiplier (AP-42 Table 13.2.1-1)
W =	20.3	20.3	tons = average vehicle weight (provided by source)
C =	0.00047	0.00047	lb/mi = emission factor for vehicle exhaust, brake wear, and tire wear (AP-42 Table 13.2.1-2)
sL =	0.6	0.6	g/m ² = Ubiquitous Baseline Silt Loading Values of paved roads (Table 13.2.1-3 for summer)

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

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

	PM	PM10	
Unmitigated Emission Factor, $E_f =$	0.66	0.13	lb/mile
Mitigated Emission Factor, $E_{ext} =$	0.60	0.12	lb/mile
Dust Control Efficiency =	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)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	1.98	0.39	1.81	0.35	0.91	0.18
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	1.98	0.39	1.81	0.35	0.91	0.18
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	0.065	0.013	0.059	0.012	0.030	5.8E-03
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	0.065	0.013	0.059	0.012	0.030	5.8E-03
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	8.3E-03	1.6E-03	7.6E-03	1.5E-03	3.8E-03	7.4E-04
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	8.3E-03	1.6E-03	7.6E-03	1.5E-03	3.8E-03	7.4E-04
Aggregate/RAP Loader Full	Front-end loader (3 CY)	10.57	2.06	9.66	1.88	4.83	0.94
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	10.57	2.06	9.66	1.88	4.83	0.94
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	1.95	0.38	1.78	0.35	0.89	0.17
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	1.95	0.38	1.78	0.35	0.89	0.17
Totals		29.13	5.67	26.64	5.18	13.32	2.59

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)
 PTE = Potential to Emit

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

Company Name: Brooks Construction Co., Inc.
Source Address: 727 S. Beiger Street, Mishawaka, Indiana 46544
Significant Permit Revision No.: 141-25539-00549
Reviewer: Rebecca Jacobs

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 = **50.0** 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%	52.63	50.0
Cut back asphalt medium cure (assuming kerosene solvent)	28.6%	70.0%	71.43	50.0
Cut back asphalt slow cure (assuming fuel oil solvent)	20.0%	25.0%	200.00	50.0
Emulsified asphalt with solvent (assuming water, emulsifying agent, and 15% fuel oil solvent)	15.0%	46.4%	107.76	50.0
Other asphalt with solvent binder	25.9%	2.5%	2000.00	50.0
Worst Case Limited PTE of VOC =				50.0

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) =	13.04	
Limited PTE of Single HAP (tons/yr) =	4.50	Xylenes

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

	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
Volatile Organic HAP						
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:

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: Brooks Construction Co., Inc.
Source Address: 727 S. Beiger Street, Mishawaka, Indiana 46544
Significant Permit Revision No.: 141-25539-00549
Reviewer: Rebecca Jacobs

The following calculations determine the fuel equivalencies for each of the fuels as compared to refinery blend fuel oil (assumed similar to No. 4 fuel oil) for sulfur dioxide (SO₂)

Fuel Type	SO ₂ Equivalency					
	Limited Sulfur Content	Limited Sulfur Content Units	AP-42 Emission Factor	Emission Factor Units	Fuel Equivalency	Fuel Equivalency Units
Natural Gas	NA	NA	0.6	lb/MMCF	250.0	MMCF natural gas / 1000 gal refinery blend fuel oi
No. 2 Fuel Oil	0.50	% by weight	71.00	lb/kgal	2.11	gal No. 2 fuel oil / gal refinery blend fuel oil
Refinery Blend Fuel Oil (No. 4 Fuel Oil)	1.00	% by weight	150.00	lb/kgal	1.00	gal refinery blend fuel oil / gal refinery blend fuel oi
Waste Oil	0.50	% by weight	73.50	lb/kgal	2.04	gal waste oil / gal refinery blend fuel oi

Methodology

Fuel Equivalency = [AP-42 Emission Factor for refinery blend 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 and No.4 (industrial boiler < 100 MMBtu/hr): AP-42 Chapter 1.3 (dated 9/98), Table 1.3-1
- Waste Oil (small boiler): AP-42 Chapter 1.11 (dated 10/96), Table 1.11-2