



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: May 24, 2012
RE: Rieth-Riley Construction Companies, Inc. / 157-31522-05267
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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John Berscheit
Rieth-Riley Construction Company, Inc.
PO Box 477
Goshen, IN, 46527-0477

May 24, 2012

Re: F157-31522-05267
First Significant Permit Revision GHG
Reopening to F157-28338-05267

Dear Mr. Berscheit:

Rieth-Riley Construction Company, Inc. was issued a Federally Enforceable State Operating Permit (FESOP) Renewal No. F157-28338-05267 on May 6, 2010 for a portable drum hot-mix asphalt plant and cold-mix asphalt production operation located at 3425 O'Farrell Road, Lafayette, IN 47904.

On January 5, 2012, the Office of Air Quality (OAQ) provided notice to this source that the Greenhouse Gas (GHG) Tailoring Rule (75 FR 31514) set a date of July 1, 2012 for sources that have the potential to emit (PTE) greenhouse gases (GHGs) equal to or greater than 100,000 tons per year of carbon dioxide equivalent emissions (CO₂e) to apply for a Title V permit or revise their current FESOP to add limits on GHGs. This notice specified that companies could request IDEM to reopen their permit to add limits on GHGs. On January 5, 2012, IDEM OAQ received a request from this source to reopen its FESOP to add limits on GHGs, pursuant to the provisions of 326 IAC 2-8-8.

Pursuant to 326 IAC 2-7-1(39), starting July 1, 2011, GHGs emissions are subject to regulation at a source with a potential to emit of 100,000 tons per year or more of CO₂e. Therefore, CO₂e emissions have been calculated for this source. Based on the calculations, the PTE greenhouse gases from this entire source is equal to or greater than 100,000 tons of CO₂e per year (see TSD Appendix A for detailed calculations). This source would have been subject to the provisions of 326 IAC 2-7. However, this source will be issued a Significant Permit Revision (SPR) to its existing FESOP because the source will limit its CO₂e emissions to less than the Title V subject to regulation threshold of 100,000 tons per year. The attached Technical Support Document (TSD) provides additional explanation of the changes to the 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 SPR procedures of 326 IAC 2-8-11.1(f). Pursuant to the provisions of 326 IAC 2-8-11.1, a SPR to this permit is hereby approved as described in the attached TSD.

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 Ms. Hannah Desrosiers, of my staff, at 317-234-5374 or 1-800-451-6027, and ask for extension 4-5374.

Sincerely,


Iryn Calilung, Section Chief
Permits Branch
Office of Air Quality



Attachments: Technical Support Document and revised permit

IC/hd

cc: File - Tippecanoe County
Tippecanoe County Health Department
U.S. EPA, Region V
Compliance and Enforcement Branch
Billing, Licensing and Training Section



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Federally Enforceable State Operating Permit Renewal OFFICE OF AIR QUALITY

Rieth-Riley Construction Co., Inc. Portable

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

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

This permit is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-8 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17.

This permit also addresses certain new source review requirements for existing equipment and is intended to fulfill the new source review procedures pursuant to 326 IAC 2-8-11.1, applicable to those conditions

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

Operation Permit No.: F157-28338-05267	
Issued by: <i>(original signed by)</i> Iryn Calilung, Section Chief Permits Branch Office of Air Quality	Issuance Date: May 6, 2010 Expiration Date: May 6, 2020

Significant Permit Revision No.: F157-31522-05267	
Issued by:  Iryn Calilung, Section Chief Permits Branch Office of Air Quality	Issuance Date: May 24, 2012 Expiration Date: May 6, 2020

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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 portable drum hot-mix asphalt plant and cold-mix asphalt production operation.

Initial Source Address:	3425 O'Farrell Road, Lafayette, Indiana 47904
General Source Phone Number:	574-875-5183
SIC Code:	2951 (Asphalt Paving Mixtures and Blocks)
County Location:	Tippecanoe
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Federally Enforceable State Operating Permit Program Minor Source, under PSD and Emission Offset Rules Minor Source, Section 112 of the Clean Air Act Not 1 of 28 Source Categories

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

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

- (a) One (1) drum hot-mix asphalt plant, identified as 2, constructed in 2005, capable of processing four hundred fifty (450) tons of raw material per hour per hour, processing blast furnace and/or steel slag in the aggregate mix, equipped with one (1) one hundred fifty (150) million British thermal units (MMBtu) per hour dryer burner, identified as 3, firing re-refined waste oil, natural gas, No. 2 fuel oil, No. 4 fuel oil, propane gas or butane gas, controlling particulate emissions with one (1) baghouse, and exhausting to one (1) stack, identified as SV1.

Under 40 CFR 60.90, Subpart I - New Source Performance Standards for Hot Mix Asphalt Facilities, this is considered an affected facility.

- (b) Material handling, screening, and conveying operations, constructed in 2005, uncontrolled and exhausting to the atmosphere, and including:
- (1) Aggregate storage piles consisting of sand, limestone, gravel, and slag, as follows;
- (A) Sand storage piles, with a maximum anticipated pile size of one (1.00) acre;
- (B) Limestone storage piles, with a maximum anticipated pile size of one and thirty hundredths (1.30) acres;
- (C) Gravel storage piles, with a maximum anticipated pile size of five hundredths (0.05) acres; and
- (D) Slag storage piles, with a maximum anticipated pile size of seventy-five hundredths (0.75) acres.

Under 40 CFR 60.90, Subpart I - New Source Performance Standards for Hot Mix Asphalt Facilities, this is considered an affected facility.

- (c) One (1) recycled asphalt pavement (RAP) system, identified as 10, constructed in 2005, with a maximum throughput capacity of two hundred twenty-five (225) tons of RAP per hour, uncontrolled and exhausting to the atmosphere, and including the following:
 - (1) One (1) portable recycled asphalt pavement (RAP) Crusher; and
 - (2) RAP storage piles, with a maximum anticipated pile size of one (1.00) acre.

Under 40 CFR 60, Subpart OOO, New Source Performance Standards for Nonmetallic Mineral Processing Plants, this is considered an affected facility.

- (d) One (1) cold-mix cutback asphalt production operation, constructed in 2005, uncontrolled and exhausting to the atmosphere, and including:
 - (1) cold-mix (stockpile mix) asphalt storage piles;

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

This portable source also includes the following insignificant activities:

- (a) One (1) liquid asphalt cement hot oil heating system, constructed in 2005, including two (2) hot oil heaters, identified as 14A and 14B, with a maximum heat input capacity of two and fifteen hundredths (2.15) million British thermal units per hour, each, firing No. 2 fuel oil or natural gas, uncontrolled and exhausting to Stacks SV2 and SV3, respectively; [326 IAC 6-2]
- (b) One (1) gasoline fuel transfer and dispensing operation, handling less than or equal to 1,300 gallons per day, having a maximum storage capacity less than or equal to 10,500 gallons, and including the following:
 - (1) One (1) gasoline storage tank, constructed in 2005, with a maximum storage capacity of 1,300 gallons, uncontrolled and exhausting to the atmosphere;

Under 40 CFR 63, Subpart CCCCC: National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities, the gasoline fuel transfer and dispensing operation, including the 1,300-gallon gasoline storage tank, is considered an affected facility.
- (c) One (1) 30,000 gallon storage tank, identified as 13A, constructed in 2005, for the storage of liquid asphalt, uncontrolled and exhausting to Stack SV4;
- (d) One (1) 25,000 gallon storage tank, identified as 13B, constructed in 2005, for the storage of liquid asphalt, uncontrolled and exhausting to Stack SV5;
- (e) One (1) 15,000 gallon storage tank, identified as 13C, constructed in 2005, for the storage of liquid asphalt, uncontrolled and exhausting to Stack SV6;
- (f) One (1) 10,000 gallon storage tank, identified as 13D, constructed in 2005, for the storage of liquid asphalt, uncontrolled and exhausting to Stack SV7;
- (g) One (1) 10,000 gallon storage tank, identified as 11A, constructed in 2005, for the storage of No. 2 fuel oil, No. 4 fuel oil or re-refined waste oil, uncontrolled and exhausting to Stack SV8;

- (h) One (1) 10,000 gallon storage tank, identified as 11B, constructed in 2005, for the storage of No. 2 fuel oil, No. 4 fuel oil or re-refined waste oil, uncontrolled and exhausting to Stack SV9;
- (i) One (1) 420 gallon storage tank, identified as 12A, constructed in 2005, for the storage of No. 2 fuel oil, uncontrolled and exhausting to Stack SV10;
- (j) One (1) 420 gallon storage tank, identified as 12B, constructed in 2005, for the storage of No. 2 fuel oil, uncontrolled and exhausting to Stack SV11;
- (k) One (1) 8,000 gallon storage tank, identified as 12C, constructed in 2005, for the storage of No. 2 fuel oil, uncontrolled and exhausting to Stack SV12;
- (l) Miscellaneous VOC and HAP Storage tanks, each with capacities less than or equal to 1,000 gallons, and annual throughputs of less than 12,000 gallons, uncontrolled and exhausting to the atmosphere;
- (m) Vessels storing lubricating oil, hydraulic oils, machining oils, and machining fluids;
- (n) Replacement or repair of electrostatic precipitators, bags in baghouses and filters in other air filtration equipment;
- (o) Natural gas pressure regulator vents, excluding venting at oil and gas production facilities; and
- (p) Unpaved roads and parking lots with public access [326 IAC 6-5].

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

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

SECTION B GENERAL CONDITIONS

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

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

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

- (a) This permit, F157-28338-05267, is issued for a fixed term of ten (10) years from the issuance date of this permit, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3. Subsequent revisions, modifications, or amendments of this permit do not affect the expiration date of this permit.
- (b) If IDEM, OAQ, upon receiving a timely and complete renewal permit application, fails to issue or deny the permit renewal prior to the expiration date of this permit, this existing permit shall not expire and all terms and conditions shall continue in effect, until the renewal permit has been issued or denied.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

The Permittee shall implement the PMPs.

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

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

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

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

The Permittee shall implement the PMPs.

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

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

- (a) An emergency, as defined in 326 IAC 2-7-1(12), is not an affirmative defense for an action brought for noncompliance with a federal or state health-based emission limitation except as provided in 326 IAC 2-8-12.
- (b) An emergency, as defined in 326 IAC 2-7-1(12), constitutes an affirmative defense to an action brought for noncompliance with a health-based or technology-based emission limitation if the affirmative defense of an emergency is demonstrated through properly signed, contemporaneous operating logs or other relevant evidence that describe the following:
- (1) An emergency occurred and the Permittee can, to the extent possible, identify the causes of the emergency;
 - (2) The permitted facility was at the time being properly operated;
 - (3) During the period of an emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or other requirements in this permit;
 - (4) For each emergency lasting one (1) hour or more, the Permittee notified IDEM, OAQ, within four (4) daytime business hours after the beginning of the emergency, or after the emergency was discovered or reasonably should have been discovered;

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

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

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

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

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

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

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

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

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

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

- (a) All terms and conditions of permits established prior to F157-28338-05267 and issued pursuant to permitting programs approved into the state implementation plan have been either:
- (1) incorporated as originally stated,
- (2) revised, or
- (3) deleted.
- (b) All previous registrations and permits are superseded by this permit.

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

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

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

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

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

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

Request for renewal shall be submitted to:

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

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

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

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

- (a) Permit amendments and revisions are governed by the requirements of 326 IAC 2-8-10 or 326 IAC 2-8-11.1 whenever the Permittee seeks to amend or modify this permit.
- (b) Any application requesting an amendment or modification of this permit shall be submitted to:
- Indiana Department of Environmental Management
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251
- Any such application does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-8-10(b)(3)]

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

- (a) The Permittee may make any change or changes at the source that are described in 326 IAC 2-8-15(b) and (c) without a prior permit revision, if each of the following conditions is met:
- (1) The changes are not modifications under any provision of Title I of the Clean Air Act;
 - (2) Any approval required by 326 IAC 2-8-11.1 has been obtained;
 - (3) The changes do not result in emissions, which exceed the limitations provided in this permit (whether expressed herein as a rate of emissions or in terms of total emissions);
 - (4) The Permittee notifies the:
- Indiana Department of Environmental Management
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

and

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

B.23 Advanced Source Modification Approval [326 IAC 2-8-4(11)] [326 IAC 2-1.1-9]

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

B.24 Credible Evidence [326 IAC 2-8-4(3)][326 IAC 2-8-5][62 FR 8314] [326 IAC 1-1-6]

For the purpose of submitting compliance certifications or establishing whether or not the Permittee has violated or is in violation of any condition of this permit, nothing in this permit shall

preclude the use, including the exclusive use, of any credible evidence or information relevant to whether the Permittee would have been in compliance with the condition of this permit if the appropriate performance or compliance test or procedure had been performed.

SECTION C SOURCE OPERATION CONDITIONS

Entire Source

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

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

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

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

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

(a) Pursuant to 326 IAC 2-8:

- (1) The potential to emit volatile organic compounds (VOCs) from the entire source shall be limited to less than twenty-five (25) tons per twelve (12) consecutive month period;
- (2) The potential to emit any regulated pollutant from the entire source, except particulate matter (PM), volatile organic compounds (VOCs) and greenhouse gases (GHGs), shall be limited to less than one hundred (100) tons per twelve (12) consecutive month period;
- (3) The potential to emit any individual hazardous air pollutant (HAP) from the entire source shall be limited to less than ten (10) tons per twelve (12) consecutive month period; and
- (4) The potential to emit any combination of HAPs from the entire source shall be limited to less than twenty-five (25) tons per twelve (12) consecutive month period.
- (5) The potential to emit greenhouse gases (GHGs) from the entire source shall be limited to less than one hundred thousand (100,000) tons of CO₂ equivalent emissions (CO₂e) per twelve (12) consecutive month period.

(b) Pursuant to 326 IAC 2-2 (PSD), potential to emit particulate matter (PM) from the entire source shall be limited to less than two hundred fifty (250) tons per twelve (12) consecutive month period.

(c) This condition shall include all emission points at this source including those that are insignificant as defined in 326 IAC 2-7-1(21). The source shall be allowed to add insignificant activities not already listed in this permit, provided that the source's potential to emit does not exceed the above specified limits.

(d) Section D of this permit contains independently enforceable provisions to satisfy this requirement.

C.3 Opacity [326 IAC 5-1]

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

- (a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4, when the source is located in any County except Lake or the areas specified in Condition C.3(b)(1) through (7).
- (b) Opacity shall not exceed an average of thirty percent (30%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4, when the source is located in the following areas listed in 326 IAC 5-1-1(c):
 - (1) Clark County (Jefferson Township - Cities of Jeffersonville, Clarksville, Oak Park);
 - (2) Dearborn County (Lawrenceburg Township - Cities of Lawrenceburg and Greendale);
 - (3) Dubois County (Bainbridge Township - the City of Jasper);
 - (4) Marion County (except the area of Washington Township east of Fall Creek and the area of Franklin Township south of Thompson Road and east of Five Points Road);
 - (5) St. Joseph County (the area north of Kern Road and east of Pine Road);
 - (6) Vanderburgh County (the area included in the City of Evansville and Pigeon Township); and
 - (7) Vigo County (Indiana State University campus, 0.5km radius around UTM Easting 464,519.00, Northing 4,369,208.00, Zone 16).
- (c) Opacity shall not exceed an average of twenty percent (20%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4, when the source is located in Lake County.
- (d) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period, when the source is located in any County.

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

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

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

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

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

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

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

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

C.8 Fugitive Particulate Matter Emissions [326 IAC 6.8-10-3]

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

- (a) The average instantaneous opacity of fugitive particulate emissions from a paved road shall not exceed ten percent (10%).
- (b) The average instantaneous opacity of fugitive particulate emissions from an unpaved road shall not exceed ten percent (10%).
- (c) The opacity of fugitive particulate emissions from exposed areas shall not exceed ten percent (10%) on a six (6) minute average.
- (d) The opacity of fugitive particulate emissions from continuous transfer of material onto and out of storage piles shall not exceed ten percent (10%) on a three (3) minute average.
- (e) The opacity of fugitive particulate emissions from storage piles shall not exceed ten percent (10%) on a six (6) minute average.
- (f) There shall be a zero (0) percent frequency of visible emission observations of a material during the inplant transportation of material by truck or rail at any time. Material transported by truck or rail that is enclosed and covered shall be considered in compliance with the inplant transportation requirement.
- (g) The opacity of fugitive particulate emissions from the inplant transportation of material by front end loaders and skip hoists shall not exceed ten percent (10%).
- (h) Material processing facilities shall include the following:
 - (1) There shall be a zero (0) percent frequency of visible emission observations from a building enclosing all or part of the material processing equipment, except from a vent in the building.
 - (2) The PM10 emissions from building vents shall not exceed twenty-two thousandths (0.022) grains per dry standard cubic foot and ten percent (10%) opacity.
 - (3) The PM10 stack emissions from a material processing facility shall not exceed twenty-two thousandths (0.022) grains per dry standard cubic foot and ten percent (10%) opacity.
 - (4) The opacity of fugitive particulate emissions from the material processing facilities, except a crusher at which a capture system is not used, shall not exceed ten percent (10%) opacity.

- (5) The opacity of fugitive particulate emissions from a crusher at which a capture system is not used shall not exceed fifteen percent (15%).
- (i) The opacity of particulate emissions from dust handling equipment shall not exceed ten percent (10%).
- (j) Material transfer limits shall be as follows:
 - (1) The average instantaneous opacity of fugitive particulate emissions from batch transfer shall not exceed ten percent (10%).
 - (2) Where adequate wetting of the material for fugitive particulate emissions control is prohibitive to further processing or reuse of the material, the opacity shall not exceed ten percent (10%), three (3) minute average.
- (k) Any facility or operation not specified in 326 IAC 6.8-10-3 shall meet a twenty percent (20%), three (3) minute average opacity standard.

The Permittee shall achieve these limits by controlling fugitive particulate matter emissions according to the attached Fugitive Dust Control Plan.

C.9 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.10 Asbestos Abatement Projects [326 IAC 14-10] [326 IAC 18] [40 CFR 61, Subpart M]

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

All required notifications shall be submitted to:

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

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

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

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

C.11 Performance Testing [326 IAC 3-6]

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

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

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

Compliance Requirements [326 IAC 2-1.1-11]

C.12 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.13 Compliance Monitoring [326 IAC 2-8-4(3)][326 IAC 2-8-5(a)(1)]

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

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

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

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

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

C.14 Reserved

C.15 Instrument Specifications [326 IAC 2-1.1-11] [326 IAC 2-8-4(3)][326 IAC 2-8-5(1)]

(a) When required by any condition of this permit, an analog instrument used to measure a parameter related to the operation of an air pollution control device shall have a scale such that the expected maximum reading for the normal range shall be no less than twenty percent (20%) of full scale.

(b) The Permittee may request that the IDEM, OAQ approve the use of an instrument that does not meet the above specifications provided the Permittee can demonstrate that an alternative instrument specification will adequately ensure compliance with permit conditions requiring the measurement of the parameters.

C.16 Continuous Compliance Plan [326 IAC 6.8-8-1] [326 IAC 6.8-8-8]

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

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

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

C.17 Emergency Reduction Plans [326 IAC 1-5-2] [326 IAC 1-5-3]

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

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

C.18 Risk Management Plan [326 IAC 2-8-4] [40 CFR 68]

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

C.19 Response to Excursions or Exceedances [326 IAC 2-8-4] [326 IAC 2-8-5]

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

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

- (d) Failure to take reasonable response steps shall be considered a deviation from the permit.
- (e) The Permittee shall record the reasonable response steps taken.

C.20 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-8-4][326 IAC 2-8-5]

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

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

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

C.21 Emission Statement [326 IAC 2-6]

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

The statement must be submitted to:

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

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

- (b) The emission statement required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.

C.22 General Record Keeping Requirements [326 IAC 2-8-4(3)] [326 IAC 2-8-5]

- (a) Records of all required monitoring data, reports, and support information required by this permit shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application.

- (1) Support information includes the following:

- (A) All calibration and maintenance records.
 - (B) All original strip chart recordings for continuous monitoring instrumentation.
 - (C) Copies of all reports required by the FESOP.
- (2) Records of required monitoring information include the following:
- (A) The date, place, as defined in this permit, and time of sampling or measurements.
 - (B) The dates analyses were performed.
 - (C) The company or entity that performed the analyses.
 - (D) The analytical techniques or methods used.
 - (E) The results of such analyses.
 - (F) The operating conditions as existing at the time of sampling or measurement.

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

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

C.23 General Reporting Requirements [326 IAC 2-8-4(3)(C)] [326 IAC 2-1.1-11]

- (a) The Permittee shall submit the attached Quarterly Deviation and Compliance Monitoring Report or its equivalent. Proper notice submittal under Section B –Emergency Provisions satisfies the reporting requirements of this paragraph. Any deviation from permit requirements, the date(s) of each deviation, the cause of the deviation, and the response steps taken must be reported except that a deviation required to be reported pursuant to an applicable requirement that exists independent of this permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report. This report shall be submitted not later than thirty (30) days after the end of the reporting period. The Quarterly Deviation and Compliance Monitoring Report shall include a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1). A deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit.
- (b) The address for report submittal is:

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

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

Portable Source Requirement

C.24 Relocation of Portable Sources [326 IAC 2-14-4]

- (a) This permit is approved for operation in all areas of Indiana. This determination is based on the requirements of Prevention of Significant Deterioration in 326 IAC 2-2, and Emission Offset requirements in 326 IAC 2-3. Prior to locating in any severe nonattainment area, the Permittee must submit a request and obtain a permit modification.
- (b) A request to relocate shall be submitted to IDEM, OAQ at least thirty (30) days prior to the intended date of relocation. This submittal shall include the following:
 - (1) A list of governmental officials entitled to receive notice of application to relocate. IC 13-15-3-1
 - (2) A list of adjacent landowners that the Permittee will send written notice to not more than ten (10) days after submission of the request to relocate. IC 13-15-8
 - (3) The new location address of the portable source.
 - (4) Whether or not this portable source will be relocated to another source.
 - (5) If relocating to another source:
 - (A) Name, location address, and permit number of the source this portable source is relocating to.
 - (B) Whether or not the sources will be considered as one source. See Non-Rule Policy (NRP) Air-005 and Air-006.
 - (6) If the sources will be considered as one source, whether or not the source to be relocated to has received the necessary approvals from IDEM to allow the relocation.

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

- (c) A "Relocation Site Approval" letter shall be obtained prior to relocating.
- (d) A valid operation permit consists of this document and any subsequent "Relocation Site Approval" letter specifying the current location of the portable plant.

Stratospheric Ozone Protection

C.25 Compliance with 40 CFR 82 and 326 IAC 22-1

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

SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

- (a) One (1) drum hot-mix asphalt plant, identified as 2, constructed in 2005, capable of processing four hundred fifty (450) tons of raw material per hour per hour, processing blast furnace and/or steel slag in the aggregate mix, equipped with one (1) one hundred fifty (150) million British thermal units (MMBtu) per hour dryer burner, identified as 3, firing re-refined waste oil, natural gas, No. 2 fuel oil, No. 4 fuel oil, propane gas or butane gas, controlling particulate emissions with one (1) baghouse, and exhausting to one (1) stack, identified as SV1.

Under 40 CFR 60.90, Subpart I - New Source Performance Standards for Hot Mix Asphalt Facilities, this is considered an affected facility.

- (b) Material handling, screening, and conveying operations, constructed in 2005, uncontrolled and exhausting to the atmosphere, and including:

(1) Aggregate storage piles consisting of sand, limestone, gravel, and slag, as follows;

(A) Sand storage piles, with a maximum anticipated pile size of one (1.00) acre;

(B) Limestone storage piles, with a maximum anticipated pile size of one and thirty hundredths (1.30) acres;

(C) Gravel storage piles, with a maximum anticipated pile size of five hundredths (1.05) acres; and

(D) Slag storage piles, with a maximum anticipated pile size of seventy-five hundredths (0.75) acres.

Under 40 CFR 60.90, Subpart I - New Source Performance Standards for Hot Mix Asphalt Facilities, this is considered an affected facility.

- (c) One (1) recycled asphalt pavement (RAP) system, identified as 10, constructed in 2005, with a maximum throughput capacity of two hundred twenty-five (225) tons of RAP per hour, uncontrolled and exhausting to the atmosphere, and including the following:

(1) One (1) portable recycled asphalt pavement (RAP) Crusher; and

(2) RAP storage piles, with a maximum anticipated pile size of one (1.00) acre.

Under 40 CFR 60, Subpart OOO, New Source Performance Standards for Nonmetallic Mineral Processing Plants, this is considered an affected facility.

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

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

D.1.1 FESOP Limits [326 IAC 2-8-4] [326 IAC 2-1.1-5] [326 IAC 2-2]

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

- (a) The asphalt production rate shall not exceed 1,000,000 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

- (b) PM10 emissions from the dryer/mixer shall not exceed one hundred sixty-five thousandths (0.165) pounds of PM10 per ton of asphalt produced.
- (c) PM2.5 emissions from the dryer/mixer shall not exceed one hundred eighty-one thousandths (0.181) pounds of PM2.5 per ton of asphalt produced.
- (d) CO emissions from the dryer/mixer shall not exceed one hundred thirty thousandths (0.130) pounds of CO per ton of asphalt produced.

Compliance with these limits, combined with the limited potential to emit PM10, PM2.5, and CO from all other emission units at this source, shall limit the source-wide total potential to emit of PM10, PM2.5, and CO to less than one hundred (100) tons per twelve (12) consecutive month period, each, and shall render 326 IAC 2-7 (Part 70 Permit Program), 326 IAC 2-1.1-5 (Nonattainment New Source Review), and 326 IAC 2-2 (PSD) not applicable.

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

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

- (a) The asphalt production rate shall not exceed 1,000,000 tons per twelve (12) consecutive month period with compliance determined at the end of each month.
- (b) PM emissions from the dryer/mixer shall not exceed three hundred ninety-four thousandths (0.394) 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, shall limit the source-wide total potential to emit of PM to less than two hundred fifty (250) tons per twelve (12) consecutive month period and shall render 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable.

D.1.3 Particulate [326 IAC 6.5-1-2]

Pursuant to 326 IAC 6.5-1-2 (Particulate Matter Limitations Except Lake County), particulate matter (PM) emissions from the dryer/mixer shall not exceed three-hundredths (0.03) grains per dry standard cubic foot of exhaust air when the source is located in Clark, Dearborn, Dubois, Howard, Marion, St. Joseph, Vanderburgh, Vigo, or Wayne Counties.

D.1.4 Particulate [326 IAC 6.8-1-2]

Pursuant to 326 IAC 6.8-1-2 (Particulate Matter Limitations for Lake County), particulate matter (PM) emissions from the dryer/mixer shall not exceed three-hundredths (0.03) grains per dry standard cubic foot of exhaust air when the source is located in Lake County.

D.1.5 SO₂, NO_x, GHGs as CO₂e, VOC, and HCl Limits [326 IAC 2-8-4] [326 IAC 2-2] [326 IAC 2-3] [326 IAC 2-4.1] [326 IAC 8-1-6]

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

- (a) Sulfur Content and Waste Oil Specifications
 - (1) The thirty (30) day calendar month average sulfur content of the blast furnace slag shall not exceed one and five tenths (1.5) percent by weight, with compliance determined at the end of each month.
 - (2) SO₂ emissions from the blast furnace slag used in the dryer/mixer shall not exceed seventy-four hundredths (0.74) pounds of SO₂ per ton of blast furnace slag processed.
 - (3) The sulfur content of the steel slag shall not exceed sixty-six hundredths (0.66) percent by weight.

- (4) SO₂ emissions from the steel slag used in the dryer/mixer shall not exceed fourteen ten-thousandths (0.0014) pounds of SO₂ per ton of steel slag processed.
 - (5) The sulfur content of the No. 2 fuel oil shall not exceed five-tenths (0.5) percent by weight.
 - (6) The sulfur content of the No. 4 fuel oil shall not exceed five-tenths (0.5) percent by weight.
 - (7) The sulfur content of the re-refined waste oil shall not exceed one (1.0) percent by weight.
 - (8) The chlorine content of the re-refined waste oil shall not exceed four tenths (0.4) percent by weight.
 - (9) HCl emissions from the dryer/mixer shall not exceed two hundred sixty-four ten-thousandths (0.0264) pounds of HCl per gallon of waste oil burned.
- (b) SO₂ emissions from the dryer/mixer burner, hot oil heaters, and blast furnace and steel slag processing shall not exceed ninety-nine (99.0) tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
 - (c) NO_x emissions from the dryer/mixer burner and hot oil heaters shall not exceed ninety-nine (99.0) tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
 - (d) CO₂ equivalent emissions (CO₂e) from the dryer/mixer burner and hot oil heaters shall not exceed ninety-nine thousand (99,000) tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
 - (e) VOC emissions from the dryer/mixer, hot oil heaters, asphalt load-out, silo filling, on-site yard, and cold mix asphalt production shall not exceed twenty-four and nine tenths (24.9) tons per twelve (12) consecutive month period with compliance determined at the end of each month.
 - (f) Liquid binder used in the production of cold mix asphalt shall be defined as follows:
 - (1) Cut back asphalt rapid cure, containing a maximum of twenty-five and three tenths percent (25.3%) by weight of VOC solvent in the liquid binder and ninety-five percent (95.0%) by weight of VOC solvent evaporating.
 - (2) Cut back asphalt medium cure, containing a maximum of twenty-eight and six tenths percent (28.6%) by weight of VOC solvent in the liquid binder and seventy percent (70.0%) by weight of VOC solvent evaporating.
 - (3) Cut back asphalt slow cure, containing a maximum of twenty percent (20.0%) by weight of VOC solvent in the liquid binder and twenty-five percent (25.0%) by weight of VOC solvent evaporating.
 - (4) Emulsified asphalt with solvent, containing a maximum of fifteen percent (15.0%) by weight of VOC solvent in the liquid binder and forty-six and four tenths percent (46.4%) by weight of VOC solvent evaporating. The percent oil distillate in emulsified asphalt with solvent liquid, as determined by ASTM, must be seven percent (7%) or less of the total emulsion by volume.

- (5) Other asphalt with solvent binder, containing a maximum of twenty-five and nine tenths (25.9%) by weight of VOC solvent in the liquid binder and two and five tenths (2.5%) by weight of VOC solvent evaporating. This definition applies to any other asphalt with solvent binder that does not have distillation data available as determined by ASTM Method D-402, Distillation of Cutback Asphalt Products.
- (6) Rieth-Riley other asphalt with solvent binder, cutback asphalt that has distillation data available as determined by ASTM Method D-402, Distillation of Cutback Asphalt Products.
- (g) HCl emissions from the dryer/mixer burner and hot oil heaters shall not exceed nine and nine tenths (9.9) tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

Compliance with these limits, combined with the limited potential to emit SO₂, NO_x, greenhouse gasses (CO₂e), VOC, and HAPs from all other emission units at this source, shall limit the source-wide total potential to emit of SO₂ and NO_x to less than one hundred (100) tons per twelve (12) consecutive month period, each, greenhouse gases to less than 100,000 tons CO₂ equivalent emissions (CO₂e) per 12 consecutive month period, VOC to less than twenty-five (25) tons per twelve (12) consecutive month period, HCl to less than ten (10) tons per twelve (12) consecutive month period, and any combination of HAPs to less than twenty-five (25) tons per twelve (12) consecutive month period, and shall render 326 IAC 2-7 (Part 70 Permits), 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), 326 IAC 2-3 (Emission Offset), 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAPs)), and 326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities) not applicable.

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

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

- (a) The sulfur dioxide (SO₂) emissions from the dryer/mixer burner shall not exceed five-tenths (0.5) pounds per MMBtu when using distillate oil.
- (b) The sulfur dioxide (SO₂) emissions from the dryer/mixer burner shall not exceed one and six tenths (1.6) pounds per MMBtu heat input when using residual oil.
- (c) Pursuant to 326 IAC 7-2-1, compliance shall be demonstrated on a calendar month average.

D.1.7 Volatile Organic Compound Rules for Asphalt Pavers [326 IAC 8-5-2]

Pursuant to 326 IAC 8-5-2, Volatile Organic Compound Rules for Asphalt Pavers, the cutback asphalt or asphalt emulsions produced by the source shall not contain more than seven percent (7%) oil distillate by volume of emulsion as determined by ASTM D244-80a "Emulsific Asphalts" ASTM part 15, 1981 ASTM 1916 Race St., Philadelphia, PA 19103, Library of Congress Card Catalog #40-10712, for any paving application except as used for the following purposes:

- (a) penetrating prime coating;
- (b) stockpile storage;
- (c) application during the months of November, December, January, February, and March.

D.1.8 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

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

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

- (a) In order to demonstrate compliance with Conditions D.1.1(b) and D.1.1(c), the Permittee shall perform PM10 and PM2.5 testing on the dryer/mixer not later than one hundred eighty (180) days after publication of the new or revised condensable PM test method(s) referenced in the U.S. EPA's Final Rule for Implementation of the New Source Review (NSR) Program for Particulate Matter Less Than 2.5 Micrometers (PM2.5) signed on May 8th, 2008 or not later than five (5) years from the most recent valid compliance demonstration, whichever is later. This testing shall be conducted utilizing methods approved by the Commissioner. These tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C - Performance Testing contains the Permittee's obligation with regard to the performance testing required by this condition. PM10 and PM2.5 includes filterable and condensable PM.
- (b) In order to demonstrate compliance with Condition D.1.2(b), the Permittee shall perform PM testing of the dryer/mixer within five (5) years from the most recent valid compliance demonstration, 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. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C – Performance Testing contains the Permittee's obligation with regard to the performance testing required by this condition.

D.1.10 Particulate Control

- (a) In order to comply with Conditions D.1.1, D.1.2, D.1.3, and D.1.4 the baghouse for particulate control shall be in operation and control emissions from the dryer/mixer at all times when the dryer/mixer is in operation.
- (b) In the event that bag failure is observed in a multi-compartment baghouse, if operations will continue for ten (10) days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

D.1.11 Sulfur Dioxide Emissions and Sulfur Content

- (a) Pursuant to 326 IAC 2-8-4, compliance with Condition D.1.5(a)(1) shall be determined utilizing one of the following options:
- (1) Providing vendor analysis of blast furnace slag delivered, if accompanied by a vendor certification; or
 - (2) Analyzing a sample of the blast furnace slag delivery to determine the sulfur content of the blast furnace slag, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.

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

- (b) Pursuant to 326 IAC 2-8-4, compliance with Condition D.1.5(a)(3) shall be determined utilizing one of the following options:
- (1) Providing vendor analysis of steel slag delivered, if accompanied by a vendor certification; or
 - (2) Analyzing a sample of the steel slag delivery to determine the sulfur content of the steel slag, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.
- A determination of noncompliance pursuant to any of the methods specified above shall not be refuted by evidence of compliance pursuant to the other method.
- (c) Pursuant to 326 IAC 3-7-4, compliance with Conditions D.1.6(a) and D.1.6(b) shall be demonstrated utilizing one of the following options:
- (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.
 - (i) Oil samples may be collected from the fuel tank immediately after the fuel tank is filled and before any oil is combusted; and
 - (ii) If a partially empty fuel tank is refilled, a new sample and analysis would be required upon filling.
- (d) Compliance may also be determined by conducting a stack test for sulfur dioxide emissions from the dryer/mixer, using 40 CFR 60, Appendix A, Method 6 in accordance with the procedures in 326 IAC 3-6.

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

D.1.12 Asphalt, Fuel, and Slag Limitations

In order to comply with Condition D.1.5, the Permittee shall limit asphalt production, fuel usage in the dryer/mixer burner and hot oil heaters, and slag usage in the dryer/mixer burner according to the following formulas:

- (a) VOC emissions from cold mix asphalt production shall be determined using the following equation:

$$V_{cm} = \left(\frac{S}{AF} \right) + \sum_{i=1}^n [C * (B/100) * (D/100) * (V/100)]$$

Where:

V_{cm} = tons of VOC emissions from cold mix asphalt production in previous 12 month consecutive period;

S = tons of VOC solvent used for each binder as defined in D.1.5(f)(1) through (5) in previous 12 months; and

AF = Adjustment factor for each type of liquid binder as defined in D.1.5(f)(1) through (5);

n = total number of binders used in the production of cold mix asphalt as defined in D.1.5(f)(6);

i = each binder used in the production of cold mix asphalt as defined in D.1.5(f)(6);
C = tons of cold mix asphalt produced using each binder as defined in D.1.5(f)(6) in previous 12 months;
B = Percent of binder used in cold mix asphalt for each binder as defined in D.1.5(f)(6);
D = Percent solvent in each binder as defined in D.1.5(f)(6); and
V = Percent of VOC from the solvent that evaporates when heated to 500°F for each binder as defined in D.1.5(f)(6). This shall be determined by using distillation data provided by the vendor or based on a distillation test performed by the source.

Adjustment Factors:

Cutback Asphalt Rapid Cure Adjustment Factor = 1.053;
Cutback Asphalt Medium Cure Adjustment Factor = 1.429;
Cutback Asphalt Slow Cure Adjustment Factor = 4.0;
Emulsified Asphalt with Liquid Binder Adjustment Factor = 2.155; and
Other Asphalt with Liquid Binder Adjustment Factor = 40.0

- (b) Total VOC emissions shall be determined using the following equation:

$$V = \frac{[A(0.032) + G(5.5) + F(0.2) + A(0.004)(0.94) + A(0.012) + A(0.001)(0.94)] + V_{cm}}{2000}$$

Where:

V = tons of VOC emissions for previous 12 month consecutive period;
A = tons of asphalt produced in previous 12 months;
G = million cubic feet of natural gas used in the hot oil heaters in previous 12 months;
F = gallons of No. 2 fuel oil used in the hot oil heaters in previous 12 months; and
V_{cm} = tons of VOC emissions from cold mix asphalt production in previous 12 month consecutive period.
Dryer/Mixer = 0.0032 pounds per ton of asphalt;
Natural Gas (hot oil heaters) = 5.5 pounds per million cubic feet of natural gas;
No. 2 Fuel Oil (hot oil heaters) = 0.2 pounds per gallon of No. 2 fuel oil;
Asphalt Load-Out = 0.004 pounds per ton of asphalt, 94 percent VOC;
Silo Filling = 0.012 pounds per ton of asphalt; and
On-site Yard = 0.001 pounds per ton of asphalt, 94 percent VOC.

- (c) Waste oil usage with respect to the actual sulfur content shall be determined using the following equation:

$$U = \sum_{e=1}^d (W_A * S_A)$$

Where:

U = waste oil usage in previous 12 consecutive months;
d = total number of waste oil deliveries;
e = each specific waste oil delivery;
W_A = actual gallons of waste oil used from each specific waste oil delivery; and
S_A = actual percent by weight sulfur content of waste oil for each specific waste oil delivery.

- (d) When the 30-day calendar month average sulfur content is less than or equal to 1.11 percent by weight, the blast furnace slag usage shall be determined using the following equation:

$$L = \sum_{i=1}^m (J)$$

Where:

L = blast furnace slag usage in previous 12 consecutive months with an average sulfur content less than or equal to 1.11 percent by weight;
m = total number of months where the 30 day calendar month average sulfur content is less than or equal to 1.11 percent by weight;
i = each specific month where the 30 day calendar month average sulfur content is less than or equal to 1.11 percent by weight; and
J = actual tons of blast furnace slag used per month where the 30 day calendar month average sulfur content is less than or equal to 1.11 percent by weight.

- (e) When the 30-day calendar month average sulfur content is greater than 1.11 percent by weight, the blast furnace slag usage shall be determined using the following equation:

$$X = \sum_{b=1}^a (K)$$

Where:

X = blast furnace slag usage in previous 12 consecutive months with an average sulfur content greater than 1.11 percent by weight;
a = total number of months where the 30 day calendar month average sulfur content is greater than 1.11 percent by weight;
b = each specific month where the 30 day calendar month average sulfur content is greater than 1.11 percent by weight; and
K = actual tons of blast furnace slag used per month where the 30 day calendar month average sulfur content is greater than 1.11 percent by weight.

- (f) Sulfur dioxide (SO₂) emissions shall be determined using the following equation:

$$S = \frac{[H(0.071) + G(0.6) + O(0.0785) + F(0.075) + P(0.00002) + B(0.00002) + U(0.147) + A(0.0014) + L(0.5413) + X(0.74)]}{2000}$$

Where:

S = tons of sulfur dioxide emissions for previous 12 consecutive month period;
H = gallons of No. 2 fuel oil used in hot oil heaters in previous 12 months;
G = million cubic feet of natural gas used in dryer/mixer in previous 12 months;
O = gallons of No. 2 fuel oil used in dryer/mixer in previous 12 months;
F = gallons of No. 4 fuel oil used in dryer/mixer in previous 12 months;
P = gallons of propane used in dryer/mixer in previous 12 months;
B = gallons of butane used in dryer/mixer in previous 12 months;
U = gallons of waste oil as defined by Condition D.1.12(b);
A = tons of steel slag used in dryer/mixer in previous 12 months;
L = tons of blast furnace slag as defined by Condition D.1.12(d); and
X = tons of blast furnace slag as defined by Condition D.1.12(e).

No. 2 Fuel Oil (hot oil heaters) = 0.071 pounds per gallon of No. 2 fuel oil;
Natural Gas (dryer/mixer) = 0.6 pounds per million cubic feet of natural gas;
No. 2 Fuel Oil (dryer/mixer) = 0.0785 pounds per gallon of No. 2 fuel oil;
No. 4 Fuel Oil (dryer/mixer) = 0.075 pounds per gallon of No. 4 fuel oil;
Propane (dryer/mixer) = 0.00002 pounds per gallon of propane;
Butane (dryer/mixer) = 0.00002 pounds per gallon of butane;
Waste Oil (dryer/mixer) = 0.147 pounds per gallon of waste oil;
Steel Slag = 0.0014 pounds per ton of steel slag processed; and
Blast Furnace Slag = 0.5413 pounds per ton of blast furnace slag processed, with a 30 day calendar month average sulfur content less than or equal to 1.11 percent by weight or 0.74 pounds per ton of blast furnace slag processed, with a 30 day calendar month average sulfur content greater than 1.11 percent by weight.

- (g) Nitrogen oxide (NO_x) emissions shall be determined using the following equation:

$$N = \frac{[H(0.02) + G(190) + O(0.024) + F(0.047) + P(0.015) + B(0.013) + U(0.019)]}{2000}$$

Where:

N = tons of nitrogen oxide emissions for previous 12 consecutive month period;
H = gallons of No. 2 fuel oil used in hot oil heaters in previous 12 months;
G = million cubic feet of natural gas used in dryer/mixer in previous 12 months;
O = gallons of No. 2 fuel oil used in dryer/mixer in previous 12 months;
F = gallons of No. 4 fuel oil used in dryer/mixer in previous 12 months;
P = gallons of propane used in dryer/mixer in previous 12 months;
B = gallons of butane used in dryer/mixer in previous 12 months; and
U = gallons of waste oil used in dryer/mixer in previous 12 months.
No. 2 Fuel Oil (hot oil heaters) = 0.02 pounds per gallon of No. 2 fuel oil;
Natural Gas (dryer/mixer) = 190 pounds per million cubic feet of natural gas;
No. 2 Fuel Oil (dryer/mixer) = 0.024 pounds per gallon of No. 2 fuel oil;
No. 4 Fuel Oil (dryer/mixer) = 0.047 pounds per gallon of No. 4 fuel oil;
Propane (dryer/mixer) = 0.015 pounds per gallon of propane;
Butane (dryer/mixer) = 0.013 pounds per gallon of butane; and
Waste Oil (dryer/mixer) = 0.019 pounds per gallon of waste oil.

- (h) CO₂ equivalent emissions (CO₂e) shall be determined using the following equations:

$$CO_2 = \frac{[G(X_G) + O(X_O) + F(X_F) + P(X_P) + B(X_B) + U(X_U)]}{2,000}$$

$$CH_4 = \frac{[G(X_G) + O(X_O) + F(X_F) + P(X_P) + B(X_B) + U(X_U)]}{2,000}$$

$$N_2O = \frac{[G(X_G) + O(X_O) + F(X_F) + P(X_P) + B(X_B) + U(X_U)]}{2,000}$$

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

Where:

CO₂ = tons of CO₂ emissions for previous 12 consecutive month period;
CH₄ = tons of CH₄ emissions for previous 12 consecutive month period;
N₂O = tons of N₂O emissions for previous 12 consecutive month period;
CO₂e = tons of CO₂e equivalent emissions for previous 12 consecutive month period;
G = million cubic feet of natural gas used in dryer/mixer and hot oil heaters in previous 12 months;
O = gallons of No. 2 fuel oil used in dryer/mixer and hot oil heaters in previous 12 months;
F = gallons of No. 4 fuel oil used in dryer/mixer in previous 12 months;
P = gallons of propane used in dryer/mixer in previous 12 months;
B = gallons of butane used in dryer/mixer in previous 12 months;
U = gallons of waste oil used in dryer/mixer in previous 12 months.

CO₂:

X_G (dryer/mixer/heaters) = 120,161.84 pounds per million cubic feet of natural gas;
X_O (dryer/mixer/heaters) = 22,501.41 x 10³ pounds per gallon of No. 2 fuel oil;
X_F (dryer/mixer) = 24,153.46 x 10³ pounds per gallon of No. 4 fuel oil;
X_P (dryer/mixer) = 12,500.00 x 10³ pounds per gallon of propane;
X_B (dryer/mixer) = 14,506.73 x 10³ pounds per gallon of butane;
X_U (dryer/mixer) = 22,024.15 x 10³ pounds per gallon of waste oil;

CH4:

X_G (dryer/mixer/heaters) = 0.00249 pounds per million cubic feet of natural gas;
 X_O (dryer/mixer/heaters) = 0.00091 pounds per gallon of No. 2 fuel oil;
 X_F (dryer/mixer) = 0.00097 pounds per gallon of No. 4 fuel oil;
 X_P (dryer/mixer) = 0.00060 pounds per gallon of propane;
 X_B (dryer/mixer) = 0.00067 pounds per gallon of butane;
 X_U (dryer/mixer) = 0.00089 pounds per gallon of waste oil;

N2O:

X_G (dryer/mixer/heaters) = 0.0022 pounds per million cubic feet of natural gas;
 X_O (dryer/mixer/heaters) = 0.00026 pounds per gallon of No. 2 fuel oil;
 X_F (dryer/mixer) = 0.00019 pounds per gallon of No. 4 fuel oil;
 X_P (dryer/mixer) = 0.0009 pounds per gallon of propane;
 X_B (dryer/mixer) = 0.0009 pounds per gallon of butane;
 X_U (dryer/mixer) = 0.00018 pounds per gallon of waste oil;

Greenhouse Warming Potentials (GWP)

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

- (i) Waste oil usage with respect to the actual chlorine content shall be determined using the following equation:

$$U = \sum_{k=1}^n (W_A * Cl_A)$$

Where:

U = waste oil usage in previous 12 consecutive months;
n = total number of waste oil deliveries;
k = each specific waste oil delivery;
WA = actual gallons of waste oil used from each specific waste oil delivery; and
Cl_A = actual percent by weight chlorine content of waste oil for each specific waste oil delivery.

- (j) Hydrogen Chloride (HCl) emissions shall be determined using the following equation:

$$HCl = \frac{U(0.066)}{2000}$$

Where:

HCl = tons of hydrogen chloride emissions for previous 12 consecutive month period; and
U = gallons of waste oil as defined in Condition D.1.12(i).
Waste Oil = 0.066 pounds per gallon of waste oil.

D.1.13 Cold Mix Asphalt Content

In order to comply with Condition D.1.5(f)(6), the Permittee shall demonstrate the percent of VOC from the solvent that evaporates in the binder when heated to 500°F for each binder used in the production of cold mix asphalt as defined in D.1.5(f)(6) as follows:

- (a) Providing distillation data as determined by ASTM Method D-402, Distillation of Cutback Asphalt Products for the binder, if accompanied by a vendor certification; or

- (b) Analyzing a sample of the binder to determine the percent of VOC from the solvent that evaporates in the binder when heated to 500°F, utilizing ASTM Method D-402, Distillation of Cutback Asphalt Products or other procedures approved by IDEM, OAQ.

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

D.1.14 Hydrogen Chloride (HCl) Emissions and Chlorine Content

In order to comply with Condition D.1.5(a)(8), the Permittee shall demonstrate that the chlorine content of the waste oil combusted in the dryer/mixer does not exceed four tenths (0.4) percent by weight, by providing a vendor analysis of each fuel delivery accompanied by a vendor certification.

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 dryer/mixer stack (SV1) exhaust shall be performed once per day during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.
- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
- (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (e) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C - Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

D.1.16 Parametric Monitoring

The Permittee shall record the pressure drop across the baghouse used in conjunction with the dryer/mixer, at least once per day when the dryer/mixer is in operation. When, for any one reading, the pressure drop across the baghouse is outside the normal range, the Permittee shall take a reasonable response. The normal range for this unit is a pressure drop between one (1.0) and nine (9.0) inches of water unless a different upper-bound or lower-bound value for this range is determined during the latest stack test. Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. A pressure reading that is outside the above-mentioned range is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit.

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

D.1.17 Broken or Failed Bag Detection

In the event that bag failure has been observed:

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

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

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

D.1.18 Record Keeping Requirements

- (a) To document the compliance status with Conditions D.1.1(a), D.1.2(a), and D.1.5(e) the Permittee shall keep monthly records of the amount of asphalt processed through the dryer/mixer.
- (b) To document the compliance status with Conditions D.1.5 and D.1.6, the Permittee shall maintain records in accordance with (1) through (8) below. Records maintained for (1) through (8) below shall be taken monthly and shall be complete and sufficient to establish compliance with the limits established in Conditions D.1.5 and D.1.6.
 - (1) Calendar dates covered in the compliance determination period;
 - (2) Actual blast furnace and steel slag usage, sulfur content and equivalent sulfur dioxide emission rates for all blast furnace and steel slag used at the source since the last compliance determination period;
 - (3) A certification, signed by the owner or operator, that the records of the blast furnace and steel slag supplier certifications represent all of the blast furnace and steel slag used during the period; and
 - (4) If the blast furnace and steel slag supplier certification is used to demonstrate compliance the following, as a minimum, shall be maintained:
 - (i) Blast furnace and steel slag supplier certifications;
 - (ii) The name of the blast furnace and steel slag supplier; and
 - (iii) A statement from the blast furnace and steel slag supplier that certifies the sulfur content of the blast furnace and steel slag.
 - (5) Actual fuel usage, sulfur content, heat content, and equivalent sulfur dioxide, nitrogen oxide, and CO₂ equivalent (CO₂e) emission rates for each fuel used at the source since the last compliance determination period;

- (6) Actual waste oil usage, chlorine content, and equivalent hydrogen chloride emission rate for waste oil used at the source since the last compliance determination period;
 - (7) A certification, signed by the owner or operator, that the records of the fuel supplier certifications represent all of the fuel combusted during the period; and
 - (8) If the fuel supplier certification is used to demonstrate compliance the following, as a minimum, shall be maintained:
 - (i) Fuel supplier certifications;
 - (ii) The name of the fuel supplier; and
 - (iii) A statement from the fuel supplier that certifies the sulfur content of the No. 2 and No. 4 fuel oils, and waste oil, and the chlorine content of waste oil.
- (c) To document the compliance status with Condition D.1.5(f)(1) through (5), the Permittee shall maintain records in accordance with (1) through (4) below. Records maintained shall be taken monthly and shall be complete and sufficient to establish compliance with the VOC emission limits established in Condition D.1.5(f)(1) through (5).
- (1) Calendar dates covered in the compliance determination period;
 - (2) Actual asphalt binder usage in the production of cold mix asphalt since the last compliance determination period;
 - (3) Actual VOC solvent content by weight of the asphalt binder used in the production of cold mix asphalt since the last compliance determination period; and
 - (4) Actual amount of VOC solvent used in the production of cold mix asphalt, and the amount of VOC emitted since the last compliance determination period.
- Records may include: delivery tickets, manufacturer's data, material safety data sheets (MSDS), and other documents necessary to verify the type and amount used. Test results of ASTM tests for asphalt cutback and asphalt emulsion may be used to document volatilization.
- (d) To document the compliance status with Condition D.1.5(f)(6), the Permittee shall maintain records in accordance with (1) through (6) below. Records maintained shall be taken monthly and shall be complete and sufficient to establish compliance with the VOC emission limits established in Condition D.1.5(f)(6).
- (1) Calendar dates covered in the compliance determination period;
 - (2) Mix temperature of cold mix asphalt produced since the last compliance determination period;
 - (3) Amount of cold mix asphalt produced since the last compliance determination period;
 - (4) Percent of cutback asphalt binder used in the production of cold mix asphalt since the last compliance determination period;

- (5) Percent of solvent in the cutback asphalt binder used in the production of cold mix asphalt since the last compliance determination period; and
- (6) Evaporation rate of the solvent in the cutback asphalt binder used in production of cold mix asphalt since the last compliance determination period and the amount of VOC emitted since the last compliance determination period.

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

- (e) To document the compliance status with Condition D.1.15, the Permittee shall maintain records of visible emission notations of the dryer/mixer stack (SV1) exhaust once per day. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g., the process did not operate that day).
- (f) To document the compliance status with Condition D.1.16, the Permittee shall maintain records once per day of the pressure drop during normal operation. The Permittee shall include in its daily record when the pressure drop reading is not taken and the reason for the lack of a pressure drop reading (e.g., the process did not operate that day).
- (g) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the records required by this condition.

D.1.19 Reporting Requirements

- (a) A quarterly summary of the information to document compliance status with Conditions D.1.1(a), D.1.2(a), D.1.5, and D.1.6 shall be submitted using the reporting forms located at the end of this permit, or their equivalent, not later than thirty (30) days after the end of the quarter being reported. Section C - General Reporting contains the Permittee's obligation with regard to the reporting required by this condition. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).

SECTION D.2 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description: Hot Oil Heaters

- (a) One (1) liquid asphalt cement hot oil heating system, constructed in 2005, including two (2) hot oil heaters, identified as 14A and 14B, with a maximum heat input capacity of two and fifteen hundredths (2.15) million British thermal units per hour, each, firing No. 2 fuel oil or natural gas, uncontrolled and exhausting to Stacks SV2 and SV3, respectively; [326 IAC 6-2]

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

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

D.2.1 Particulate [326 IAC 6-2]

Pursuant to 326 IAC 6-2-3, the particulate emissions from the two (2) hot oil heaters, identified as 14A and 14B, shall not exceed six tenths (0.6) pounds of particulate matter per MMBtu heat input, each.

SECTION D.3

EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description: Unpaved Roads

(o) Unpaved roads and parking lots with public access [326 IAC 6-5].

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

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

D.3.1 Particulate [326 IAC 2-8-4] [326 IAC 6-5]

Pursuant to 326 IAC 2-8 and 326 IAC 6-5, the Permittee shall control PM, PM10, and PM2.5 emissions from the unpaved roads according to the fugitive dust plan, which is included as Attachment A of this permit.

SECTION E.1 NEW SOURCE PERFORMANCE STANDARDS

Emissions Unit Description: Hot-Mix Asphalt Plant

- (a) One (1) drum hot-mix asphalt plant, identified as 2, constructed in 2005, capable of processing four hundred fifty (450) tons of raw material per hour per hour, processing blast furnace and/or steel slag in the aggregate mix, equipped with one (1) one hundred fifty (150) million British thermal units (MMBtu) per hour dryer burner, identified as 3, firing re-refined waste oil, natural gas, No. 2 fuel oil, No. 4 fuel oil, propane gas or butane gas, controlling particulate emissions with one (1) baghouse, and exhausting to one (1) stack, identified as SV1.

Under 40 CFR 60.90, Subpart I - New Source Performance Standards for Hot Mix Asphalt Facilities, this is considered an affected facility.

- (b) Material handling, screening, and conveying operations, constructed in 2005, uncontrolled and exhausting to the atmosphere, and including:

(1) Aggregate storage piles consisting of sand, limestone, gravel, and slag, as follows;

(A) Sand storage piles, with a maximum anticipated pile size of one (1.00) acre;

(B) Limestone storage piles, with a maximum anticipated pile size of one and thirty hundredths (1.30) acres;

(C) Gravel storage piles, with a maximum anticipated pile size of five hundredths (1.05) acres; and

(D) Slag storage piles, with a maximum anticipated pile size of seventy-five hundredths (0.75) acres.

Under 40 CFR 60.90, Subpart I - New Source Performance Standards for Hot Mix Asphalt Facilities, this is considered an affected facility.

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

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

E.1.1 NSPS Subpart I Requirements - Standards of Performance for Hot Mix Asphalt Facilities [40 CFR Part 60, Subpart I] [326 IAC 12-1]

Pursuant to CFR Part 60, Subpart I, the affected facility to which the provisions of this subpart apply is each hot mix asphalt facility, as defined in § 60.91(a), that commences construction or modification after June 11, 1973. For the purpose of this subpart, a hot mix asphalt facility is comprised only of any combination of the following: dryers; systems for screening, handling, storing, and weighing hot aggregate; systems for loading, transferring, and storing mineral filler, systems for mixing hot mix asphalt; and the loading, transfer, and storage systems associated with emission control systems.

The hot mix asphalt facility is subject to the following portions of 40 CFR 60, Subpart I (included as Attachment B of this permit):

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

The provisions of 40 CFR 60 Subpart A – General Provisions, which are incorporated as 326 IAC 12-1, apply to the hot mix asphalt facility except when otherwise specified in 40 CFR 60 Subpart I.

SECTION E.2 NEW SOURCE PERFORMANCE STANDARDS

Emissions Unit Description: Recycled Asphalt Pavement (RAP) System

(c) One (1) recycled asphalt pavement (RAP) system, identified as 10, constructed in 2005, with a maximum throughput capacity of two hundred twenty-five (225) tons of RAP per hour, uncontrolled and exhausting to the atmosphere, and including the following:

- (1) One (1) portable recycled asphalt pavement (RAP) Crusher; and
- (2) RAP storage piles, with a maximum anticipated pile size of one (1.00) acre.

Under 40 CFR 60, Subpart OOO, New Source Performance Standards for Nonmetallic Mineral Processing Plants, this is considered an affected facility.

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

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

E.2.1 NSPS Subpart OOO Requirements - Standards of Performance for Nonmetallic Mineral Processing Plants [40 CFR Part 60, Subpart OOO] [326 IAC 12-1]

Pursuant to CFR Part 60, Subpart OOO, the affected facility to which the provisions of this subpart apply is each crusher and grinding mill at hot mix asphalt facilities that reduce the size of nonmetallic minerals embedded in recycled asphalt pavement and subsequent affected facilities up to, but not including, the first storage silo or bin.

The recycled asphalt pavement system is subject to the following portions of 40 CFR 60, Subpart OOO (included as Attachment C of this permit):

- (1) 40 CFR 60.670
- (2) 40 CFR 60.671
- (3) 40 CFR 60.672
- (4) 40 CFR 60.673
- (5) 40 CFR 60.674
- (6) 40 CFR 60.675
- (7) 40 CFR 60.676

The requirements of 40 CFR Part 60, Subpart A – General Provisions, which are incorporated as 326 IAC 12-1, apply to the Recycled Asphalt Pavement (RAP) system except as otherwise specified in 40 CFR 60, Subpart OOO.

SECTION E.3

NESHAP REQUIREMENTS

Emissions Unit Description: Gasoline Dispensing Facilities

(b) One (1) gasoline fuel transfer and dispensing operation, handling less than or equal to 1,300 gallons per day, having a maximum storage capacity less than or equal to 10,500 gallons, and including the following:

(1) One (1) gasoline storage tank, constructed in 2005, with a maximum storage capacity of 1,300 gallons, uncontrolled and exhausting to the atmosphere;

Under 40 CFR 63, Subpart CCCCCC: National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities, the gasoline fuel transfer and dispensing operation, including the 1,300-gallon gasoline storage tank, is considered an affected facility.

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

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

E.3.1 National Emission Standards for Hazardous Air Pollutants (NESHAPs): Area Source Standards for Source Category: Gasoline Dispensing Facilities [40 CFR 63, Subpart CCCCCC] [326 IAC 20]

Pursuant to 40 CFR § 63.11112(a), the emission sources to which this subpart applies are gasoline storage tanks and associated equipment components in vapor or liquid gasoline service at new, reconstructed, or existing gasoline dispensing facilities (GDF), located at an area source. The affected source includes each gasoline cargo tank during the delivery of product to a GDF and also includes each storage tank. Pressure/Vacuum vents on gasoline storage tanks and the equipment necessary to unload product from cargo tanks into the storage tanks at GDF are covered emission sources. The equipment used for the refueling of motor vehicles is not covered by this subpart.

The gasoline fuel transfer and dispensing operation is therefore subject to the following portions of Subpart CCCCCC (6C) (included as Attachment D of this permit):

- (1) 40 CFR 63.11504(a)(1)(iii), (a)(2), (a)(3);
- (2) 40 CFR 63.11505(a)(1), (b), (e);
- (3) 40 CFR 63.11506(a);
- (4) 40 CFR 63.11507(g);
- (5) 40 CFR 63.11508(a), (b), (d)(1), (d)(2), (d)(8);
- (6) 40 CFR 63.11509(a), (b), (c)(6), (c)(7), (d), (e), (f);
- (7) 40 CFR 63.11510;
- (8) 40 CFR 63.11511; and
- (9) 40 CFR 63.11512.

The requirements of 40 CFR 63 Subpart A – General Provisions, which are incorporated as 326 IAC 20-1-1, apply to the facility described in this section except when otherwise specified in 40 CFR 63, Subpart 6C.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT OFFICE OF AIR QUALITY

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP) CERTIFICATION

Source Name: Rieth-Riley Construction Co., Inc.
Initial Source Address: 3425 O'Farrell Road, Lafayette, Indiana 47904
FESOP Permit No.: F157-28338-05267

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

Please check what document is being certified:

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

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

Signature:

Printed Name:

Title/Position:

Date:

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

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

Source Name: Rieth-Riley Construction Co., Inc.
Initial Source Address: 3425 O'Farrell Road, Lafayette, Indiana 47904
FESOP Permit No.: F157-28338-05267

This form consists of 2 pages

Page 1 of 2

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

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

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

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

Page 2 of 2

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

Form Completed by: _____

Title / Position: _____

Date: _____

Phone: _____

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

FESOP Quarterly Report

Source Name: Rieth-Riley Construction Co., Inc.
Initial Source Address: 3425 O'Farrell Road, Lafayette, Indiana 47904
FESOP Permit No.: F157 28338 0526
Facility: Drum dryer/mixer

Parameter: **Hot mix asphalt production**

Limit: The asphalt production rate shall not exceed 1,000,000 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

Quarter: _____ Year: _____

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	12 Month Total
Month 1			
Month 2			
Month 3			

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

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

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

FESOP Quarterly Report
Page 1 of 2

Source Name: Rieth-Riley Construction Co., Inc.
Initial Source Address: 3425 O'Farrell Road, Lafayette, Indiana 47904
FESOP Permit No.: F157 28338 0526
Facility: Dryer/mixer burner, hot oil heaters, and blast furnace and steel slag processing
Parameter: **SO₂, NO_x, and CO_{2e} emissions**

Limit: SO₂ emissions from the dryer/mixer burner, hot oil heater, diesel fuel oil-fired portable crusher, and blast furnace and electric arc furnace steel mill slag processing shall not exceed 99.0 tons per twelve (12) consecutive month period, with compliance determined at the end of each month, using the equation found in Condition D.1.12(f);

NO_x emissions from the dryer/mixer burner, hot oil heaters, and diesel fuel oil-fired portable crusher shall not exceed 99.0 tons per twelve (12) consecutive month period, with compliance determined at the end of each month, using the equation found in Condition D.1.12(g); and

CO_{2e} emissions from the dryer/mixer burner, hot oil heaters, and diesel fuel oil-fired portable crusher shall not exceed 99,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month, using the equation found in Condition D.1.12(h).

FESOP Fuel Usage, Slag Usage, and SO₂, NO_x, and CO₂e Emissions Quarterly Reporting Form

Quarter: _____ Year: _____

Month	Fuel Types (units)	Column 1	Column 2	Column 1 + Column 2	Total SO ₂ Emissions From All Fuels and Slag Used (tons per 12 month consecutive period)	Total NO _x Emissions From All Fuels Used (tons per 12 month consecutive period)	Total CO ₂ e Emissions From All Fuels Used (tons per 12 month consecutive period)
		Usage This Month	Usage Previous 11 Months	Usage 12 Month Total			
Month 1	Natural gas (mmcf)						
	No. 2 fuel oil (gallons)						
	No. 4 fuel oil (gallons)						
	Propane (gallons)						
	Butane (gallons)						
	Waste oil (gallons)						
	Steel slag (tons)						
	Blast furnace slag (tons)						
	Average sulfur content blast furnace slag (%)						
Month 2	Natural gas (mmcf)						
	No. 2 fuel oil (gallons)						
	No. 4 fuel oil (gallons)						
	Propane (gallons)						
	Butane (gallons)						
	Waste oil (gallons)						
	Steel slag (tons)						
	Blast furnace slag (tons)						
	Average sulfur content blast furnace slag (%)						
Month 3	Natural gas (mmcf)						
	No. 2 fuel oil (gallons)						
	No. 4 fuel oil (gallons)						
	Propane (gallons)						
	Butane (gallons)						
	Waste oil (gallons)						
	Steel slag (tons)						
	Blast furnace slag (tons)						
	Average sulfur content blast furnace slag (%)						

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

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

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

FESOP Quarterly Report

Source Name: Rieth-Riley Construction Co., Inc.
 Initial Source Address: 3425 O'Farrell Road, Lafayette, Indiana 47904
 FESOP Permit No.: F157 28338 0526
 Facility: Drum dryer/mixer

Parameter: **HCl emissions**

Limit: HCl emissions dryer/mixer burner, and hot oil heaters shall not exceed nine and nine tenths (9.9) tons per twelve (12) consecutive month period, with compliance determined at the end of each month. Hydrogen Chloride (HCl) emissions shall be determined using the following equation:

$$HCl = \frac{U(0.066)}{2000}$$

<u>Where:</u> HCl = tons of hydrogen chloride emissions for previous 12 consecutive month period; and U = gallons of waste oil as defined in Condition D.1.12(g).	<u>Emission Factor:</u> Waste Oil = 0.066 pounds per gallon of waste oil.
---	--

Quarter: _____ **Year:** _____

Month	Column 1	Column 2	Column 1 + Column 2	Total HCl Emissions From Waste Oil Used (tons per 12 month consecutive period)
	Usage This Month	Usage Previous 11 Months	Usage 12 Month Total	
Month 1				
Month 2				
Month 3				

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

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

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

FESOP Quarterly Report
 Page 1 of 4

Source Name: Rieth-Riley Construction Co., Inc.
 Initial Source Address: 3425 O'Farrell Road, Lafayette, Indiana 47904
 FESOP Permit No.: F157 28338 0526
 Facility: Dryer/mixer, hot oil heaters, asphalt load-out, silo filling, on-site yard, and cold-mix asphalt production

Parameter: **VOC emissions**

Limit: VOC emissions from the dryer/mixer, hot oil heaters, asphalt load-out, silo filling, on-site yard, and cold mix asphalt production shall not exceed twenty four and nine tenths (24.9) tons per twelve (12) consecutive month period with compliance determined at the end of each month. VOC emissions shall be determined using the following equation:

$$V = \frac{[A(0.032) + G(5.5) + F(0.2) + A(0.004)(0.94) + A(0.012) + A(0.001)(0.94)] + S}{2000 \cdot AF}$$

<p><u>Where:</u> V = tons of VOC emissions for previous 12 month consecutive period; A = tons of asphalt produced in previous 12 months; G = million cubic feet of natural gas used in hot oil heaters in previous 12 months; F = gallons of No. 2 fuel oil used in hot oil heaters in previous 12 months; S = tons of VOC solvent used for each binder in previous 12 months; and AF = Adjustment factor for each type of liquid binder.</p>	<p><u>Emission Factors:</u> Dryer/Mixer = 0.0032 pounds per ton of asphalt; Natural Gas (hot oil heaters) = 5.5 pounds per million cubic feet of natural gas; No. 2 Fuel Oil (hot oil heaters) = 0.2 pounds per gallon of No. 2 fuel oil; Asphalt Load-Out = 0.004 pounds per ton of asphalt, 94 percent VOC; Silo Filling = 0.012 pounds per ton of asphalt; and On-site Yard = 0.001 pounds per ton of asphalt, 94 percent VOC; Cutback Asphalt Rapid Cure Adjustment Factor = 1.053 Cutback Asphalt Medium Cure Adjustment Factor = 1.429 Cutback Asphalt Slow Cure Adjustment Factor = 4.0 Emulsified Asphalt with Liquid Binder Adjustment Factor = 2.155 Other Asphalt with Liquid Binder Adjustment Factor = 40.0</p>
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FESOP Cold Mix Asphalt Usage and VOC Emissions Quarterly Reporting Form

Quarter: _____ Year: _____

Month	Type of Liquid Binder	Solvent Usage This Month (tons)	Adjustment Factor	VOC Emissions From Each Binder This Month (tons)	VOC Emissions From Cold Mix This Month (tons)	VOC Emissions From Cold Mix Previous 11 Months (tons)	VOC Emissions From Cold Mix 12 Month Total (tons)
Month 1	Cut back asphalt rapid cure		1.053				
	Cut back asphalt medium cure		1.429				
	Cut back asphalt slow cure		4.0				
	Emulsified asphalt		2.155				
	Other asphalt		40.0				
Month 2	Cut back asphalt rapid cure		1.053				
	Cut back asphalt medium cure		1.429				
	Cut back asphalt slow cure		4.0				
	Emulsified asphalt		2.155				
	Other asphalt		40.0				
Month 3	Cut back asphalt rapid cure		1.053				
	Cut back asphalt medium cure		1.429				
	Cut back asphalt slow cure		4.0				
	Emulsified asphalt		2.155				
	Other asphalt		40.0				

FESOP Cold Mix Asphalt Usage and VOC Emissions Quarterly Reporting Form

Quarter: _____ Year: _____

Month	Material/Fuel Types (units)	Column 1	Column 2	Column 1 + Column 2	Total VOC Emissions (tons per 12 month consecutive period)
		Usage This Month	Usage Previous 11 Months	Usage 12 Month Total	
Month 1	Asphalt produced (tons)				
	Natural gas (HOH) (mmcf)				
	No. 2 fuel oil (HOH) (gallons)				
	Cold Mix Asphalt				
Month 2	Asphalt Produced (tons)				
	Natural gas (HOH) (mmcf)				
	No. 2 fuel oil (HOH) (gallons)				
	Cold Mix Asphalt				
Month 3	Asphalt Produced (tons)				
	Natural gas (HOH) (mmcf)				
	No. 2 fuel oil (HOH) (gallons)				
	Cold Mix Asphalt				

No deviation occurred in this quarter.

Deviation/s occurred in this quarter.

Deviation has been reported on: _____

Submitted by: _____

Title / Position: _____

Signature: _____

Date: _____

Phone: _____

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH
FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)
QUARTERLY DEVIATION AND COMPLIANCE MONITORING REPORT**

Source Name: Rieth-Riley Construction Co., Inc.
Initial Source Address: 3425 O'Farrell Road, Lafayette, Indiana 47904
FESOP Permit No.: F157-28338-05267

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

Page 1 of 2

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

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

Form Completed by: _____

Title / Position: _____

Date: _____

Phone: _____

**Federally Enforceable State Operating
Permit (FESOP) Renewal
OFFICE OF AIR QUALITY**

**Rieth-Riley Construction Company, Inc.
Portable Source**

Attachment A

**HOT-MIX ASPHALT PLANT
FUGITIVE DUST CONTROL PLAN**

F157-28338-05267

HOT-MIX ASPHALT PLANT SITE FUGITIVE DUST CONTROL PLAN

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

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

“An as-needed basis” means the frequency or quantity of application necessary to minimize visible particulate matter emissions.

**FEDERALLY ENFORCEABLE
STATE OPERATING PERMIT RENEWAL
OFFICE OF AIR QUALITY**

**Rieth-Riley Construction Company, Inc.
Portable Source**

Attachment B

Title 40: Protection of Environment

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

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

F157-28338-05267

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

§ 60.90 Applicability and designation of affected facility.

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

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

§ 60.91 Definitions.

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

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

[51 FR 12325, Apr. 10, 1986]

§ 60.92 Standard for particulate matter.

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

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

§ 60.93 Test methods and procedures.

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

[54 FR 6667, Feb. 14, 1989]

Reference

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

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

**FEDERALLY ENFORCEABLE
STATE OPERATING PERMIT
OFFICE OF AIR QUALITY/**

**Rieth-Riley Construction Company, Inc.
Portable Source**

Attachment C

Title 40: Protection of Environment

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

**Subpart 000 - STANDARDS OF PERFORMANCE
FOR NONMETALLIC MINERAL PROCESSING PLANTS**

F157-28338-05267

40 CFR 60, SUBPART 000—STANDARDS OF PERFORMANCE FOR NONMETALLIC MINERAL PROCESSING PLANTS

Source: 51 FR 31337, Aug. 1, 1985, unless otherwise noted.

§ 60.670 Applicability and designation of affected facility.

- (a) (1) Except as provided in paragraphs (a)(2), (b), (c), and (d) of this section, the provisions of this subpart are applicable to the following affected facilities in fixed or portable nonmetallic mineral processing plants: each crusher, grinding mill, screening operation, bucket elevator, belt conveyor, bagging operation, storage bin, enclosed truck or railcar loading station. Also, crushers and grinding mills at hot mix asphalt facilities that reduce the size of nonmetallic minerals embedded in recycled asphalt pavement and subsequent affected facilities up to, but not including, the first storage silo or bin are subject to the provisions of this subpart.
- (2) The provisions of this subpart do not apply to the following operations: All facilities located in underground mines; and stand-alone screening operations at plants without crushers or grinding mills.
- (b) An affected facility that is subject to the provisions of subpart F or I or that follows in the plant process any facility subject to the provisions of subparts F or I of this part is not subject to the provisions of this subpart.
- (c) Facilities at the following plants are not subject to the provisions of this subpart:
- (1) Fixed sand and gravel plants and crushed stone plants with capacities, as defined in §60.671, of 23 megagrams per hour (25 tons per hour) or less;
- (2) Portable sand and gravel plants and crushed stone plants with capacities, as defined in §60.671, of 136 megagrams per hour (150 tons per hour) or less; and
- (3) Common clay plants and pumice plants with capacities, as defined in §60.671, of 9 megagrams per hour (10 tons per hour) or less.
- (d) (1) When an existing facility is replaced by a piece of equipment of equal or smaller size, as defined in §60.671, having the same function as the existing facility, the new facility is exempt from the provisions of §§60.672, 60.674, and 60.675 except as provided for in paragraph (d)(3) of this section.
- (2) An owner or operator complying with paragraph (d)(1) of this section shall submit the information required in §60.676(a).
- (3) An owner or operator replacing all existing facilities in a production line with new facilities does not qualify for the exemption described in paragraph (d)(1) of this section and must comply with the provisions of §§60.672, 60.674 and 60.675.
- (e) An affected facility under paragraph (a) of this section that commences construction, reconstruction, or modification after August 31, 1983 is subject to the requirements of this part.
- (f) Table 1 of this subpart specifies the provisions of subpart A of this part 60 that apply and those that do not apply to owners and operators of affected facilities subject to this subpart.

Table 1—Applicability of Subpart A to Subpart OOO

Subpart A reference	Applies to Subpart OOO	Comment
60.1, Applicability	Yes	
60.2, Definitions	Yes	
60.3, Units and abbreviations	Yes	
60.4, Address:		
(a)	Yes	
(b)	Yes	
60.5, Determination of construction or modification	Yes	
60.6, Review of plans	Yes	
60.7, Notification and recordkeeping	Yes	Except in (a)(2) report of anticipated date of initial startup is not required (§60.676(h)).
60.8, Performance tests	Yes	Except in (d), after 30 days notice for an initially scheduled performance test, any rescheduled performance test requires 7 days notice, not 30 days (§60.675(g)).
60.9, Availability of information	Yes	
60.10, State authority	Yes	
60.11, Compliance with standards and maintenance requirements	Yes	Except in (b) under certain conditions (§§60.675 (c)(3) and (c)(4)), Method 9 observation may be reduced from 3 hours to 1 hour. Some affected facilities exempted from Method 9 tests (§60.675(h)).
60.12, Circumvention	Yes	
60.13, Monitoring requirements	Yes	
60.14, Modification	Yes	
60.15, Reconstruction	Yes	
60.16, Priority list	Yes	
60.17, Incorporations by reference	Yes	
60.18, General control device	No	Flares will not be used to comply with the emission limits.
60.19, General notification and reporting requirements	Yes	

[51 FR 31337, Aug. 1, 1985, as amended at 62 FR 31359, June 9, 1997]

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§ 60.671 Definitions.

All terms used in this subpart, but not specifically defined in this section, shall have the meaning given them in the Act and in subpart A of this part.

Bagging operation means the mechanical process by which bags are filled with nonmetallic minerals.

Belt conveyor means a conveying device that transports material from one location to another by means of an endless belt that is carried on a series of idlers and routed around a pulley at each end.

Bucket elevator means a conveying device of nonmetallic minerals consisting of a head and foot assembly which supports and drives an endless single or double strand chain or belt to which buckets are attached.

Building means any frame structure with a roof.

Capacity means the cumulative rated capacity of all initial crushers that are part of the plant.

Capture system means the equipment (including enclosures, hoods, ducts, fans, dampers, etc.) used to capture and transport particulate matter generated by one or more process operations to a control device.

Control device means the air pollution control equipment used to reduce particulate matter emissions released to the atmosphere from one or more process operations at a nonmetallic mineral processing plant.

Conveying system means a device for transporting materials from one piece of equipment or location to another location within a plant. Conveying systems include but are not limited to the following: Feeders, belt conveyors, bucket elevators, and pneumatic systems.

Crusher means a machine used to crush any nonmetallic minerals, and includes, but is not limited to, the following types: jaw, gyratory, cone, roll, rod mill, hammermill, and impactor.

Enclosed truck or railcar loading station means that portion of a nonmetallic mineral processing plant where nonmetallic minerals are loaded by an enclosed conveying system into enclosed trucks or railcars.

Fixed plant means any nonmetallic mineral processing plant at which the processing equipment specified in §60.670(a) is attached by a cable, chain, turnbuckle, bolt or other means (except electrical connections) to any anchor, slab, or structure including bedrock.

Fugitive emission means particulate matter that is not collected by a capture system and is released to the atmosphere at the point of generation.

Grinding mill means a machine used for the wet or dry fine crushing of any nonmetallic mineral. Grinding mills include, but are not limited to, the following types: hammer, roller, rod, pebble and ball, and fluid energy. The grinding mill includes the air conveying system, air separator, or air classifier, where such systems are used.

Initial crusher means any crusher into which nonmetallic minerals can be fed without prior crushing in the plant.

Nonmetallic mineral means any of the following minerals or any mixture of which the majority is any of the following minerals:

- (a) Crushed and Broken Stone, including Limestone, Dolomite, Granite, Traprock, Sandstone, Quartz, Quartzite, Marl, Marble, Slate, Shale, Oil Shale, and Shell.
- (b) Sand and Gravel.

- (c) Clay including Kaolin, Fireclay, Bentonite, Fuller's Earth, Ball Clay, and Common Clay.
- (d) Rock Salt.
- (e) Gypsum.
- (f) Sodium Compounds, including Sodium Carbonate, Sodium Chloride, and Sodium Sulfate.
- (g) Pumice.
- (h) Gilsonite.
- (i) Talc and Pyrophyllite.
- (j) Boron, including Borax, Kernite, and Colemanite.
- (k) Barite.
- (l) Fluorospar.
- (m) Feldspar.
- (n) Diatomite.
- (o) Perlite.
- (p) Vermiculite.
- (q) Mica.
- (r) Kyanite, including Andalusite, Sillimanite, Topaz, and Dumortierite.

Nonmetallic mineral processing plant means any combination of equipment that is used to crush or grind any nonmetallic mineral wherever located, including lime plants, power plants, steel mills, asphalt concrete plants, portland cement plants, or any other facility processing nonmetallic minerals except as provided in §60.670 (b) and (c).

Portable plant means any nonmetallic mineral processing plant that is mounted on any chassis or skids and may be moved by the application of a lifting or pulling force. In addition, there shall be no cable, chain, turnbuckle, bolt or other means (except electrical connections) by which any piece of equipment is attached or clamped to any anchor, slab, or structure, including bedrock that must be removed prior to the application of a lifting or pulling force for the purpose of transporting the unit.

Production line means all affected facilities (crushers, grinding mills, screening operations, bucket elevators, belt conveyors, bagging operations, storage bins, and enclosed truck and railcar loading stations) which are directly connected or are connected together by a conveying system.

Screening operation means a device for separating material according to size by passing undersize material through one or more mesh surfaces (screens) in series, and retaining oversize material on the mesh surfaces (screens).

Size means the rated capacity in tons per hour of a crusher, grinding mill, bucket elevator, bagging operation, or enclosed truck or railcar loading station; the total surface area of the top screen of a screening operation; the width of a conveyor belt; and the rated capacity in tons of a storage bin.

Stack emission means the particulate matter that is released to the atmosphere from a capture system.

Storage bin means a facility for storage (including surge bins) or nonmetallic minerals prior to further processing or loading.

Transfer point means a point in a conveying operation where the nonmetallic mineral is transferred to or from a belt conveyor except where the nonmetallic mineral is being transferred to a stockpile.

Truck dumping means the unloading of nonmetallic minerals from movable vehicles designed to transport nonmetallic minerals from one location to another. Movable vehicles include but are not limited to: trucks, front end loaders, skip hoists, and railcars.

Vent means an opening through which there is mechanically induced air flow for the purpose of exhausting from a building air carrying particulate matter emissions from one or more affected facilities.

Wet mining operation means a mining or dredging operation designed and operated to extract any nonmetallic mineral regulated under this subpart from deposits existing at or below the water table, where the nonmetallic mineral is saturated with water.

Wet screening operation means a screening operation at a nonmetallic mineral processing plant which removes unwanted material or which separates marketable fines from the product by a washing process which is designed and operated at all times such that the product is saturated with water.

[51 FR 31337, Aug. 1, 1985, as amended at 62 FR 31359, June 9, 1997]

§ 60.672 Standard for particulate matter.

- (a) On and after the date on which the performance test required to be conducted by §60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any transfer point on belt conveyors or from any other affected facility any stack emissions which:
- (1) Contain particulate matter in excess of 0.05 g/dscm (0.022 gr/dscf); and
 - (2) Exhibit greater than 7 percent opacity, unless the stack emissions are discharged from an affected facility using a wet scrubbing control device. Facilities using a wet scrubber must comply with the reporting provisions of §60.676 (c), (d), and (e).
- (b) On and after the sixtieth day after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup as required under §60.11 of this part, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any transfer point on belt conveyors or from any other affected facility any fugitive emissions which exhibit greater than 10 percent opacity, except as provided in paragraphs (c), (d), and (e) of this section.
- (c) On and after the sixtieth day after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup as required under §60.11 of this part, no owner or operator shall cause to be discharged into the atmosphere from any crusher, at which a capture system is not used, fugitive emissions which exhibit greater than 15 percent opacity.
- (d) Truck dumping of nonmetallic minerals into any screening operation, feed hopper, or crusher is exempt from the requirements of this section.
- (e) If any transfer point on a conveyor belt or any other affected facility is enclosed in a building, then each enclosed affected facility must comply with the emission limits in paragraphs (a), (b) and (c) of this section, or the building enclosing the affected facility or facilities must comply with the following emission limits:

- (1) No owner or operator shall cause to be discharged into the atmosphere from any building enclosing any transfer point on a conveyor belt or any other affected facility any visible fugitive emissions except emissions from a vent as defined in §60.671.
 - (2) No owner or operator shall cause to be discharged into the atmosphere from any vent of any building enclosing any transfer point on a conveyor belt or any other affected facility emissions which exceed the stack emissions limits in paragraph (a) of this section.
- (f) On and after the sixtieth day after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup as required under §60.11 of this part, no owner or operator shall cause to be discharged into the atmosphere from any baghouse that controls emissions from only an individual, enclosed storage bin, stack emissions which exhibit greater than 7 percent opacity.
- (g) Owners or operators of multiple storage bins with combined stack emissions shall comply with the emission limits in paragraph (a)(1) and (a)(2) of this section.
- (h) On and after the sixtieth day after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup, no owner or operator shall cause to be discharged into the atmosphere any visible emissions from:
- (1) Wet screening operations and subsequent screening operations, bucket elevators, and belt conveyors that process saturated material in the production line up to the next crusher, grinding mill or storage bin.
 - (2) Screening operations, bucket elevators, and belt conveyors in the production line downstream of wet mining operations, where such screening operations, bucket elevators, and belt conveyors process saturated materials up to the first crusher, grinding mill, or storage bin in the production line.

[51 FR 31337, Aug. 1, 1985, as amended at 62 FR 31359, June 9, 1997; 65 FR 61778, Oct. 17, 2000]

§ 60.673 Reconstruction.

- (a) The cost of replacement of ore-contact surfaces on processing equipment shall not be considered in calculating either the “fixed capital cost of the new components” or the “fixed capital cost that would be required to construct a comparable new facility” under §60.15. Ore-contact surfaces are crushing surfaces; screen meshes, bars, and plates; conveyor belts; and elevator buckets.
- (b) Under §60.15, the “fixed capital cost of the new components” includes the fixed capital cost of all depreciable components (except components specified in paragraph (a) of this section) which are or will be replaced pursuant to all continuous programs of component replacement commenced within any 2-year period following August 31, 1983.

§ 60.674 Monitoring of operations.

The owner or operator of any affected facility subject to the provisions of this subpart which uses a wet scrubber to control emissions shall install, calibrate, maintain and operate the following monitoring devices:

- (a) A device for the continuous measurement of the pressure loss of the gas stream through the scrubber. The monitoring device must be certified by the manufacturer to be accurate within ± 250 pascals ± 1 inch water gauge pressure and must be calibrated on an annual basis in accordance with manufacturer's instructions.
- (b) A device for the continuous measurement of the scrubbing liquid flow rate to the wet scrubber. The monitoring device must be certified by the manufacturer to be accurate within ± 5 percent of design scrubbing liquid flow rate and must be calibrated on an annual basis in accordance with manufacturer's instructions.

§ 60.675 Test methods and procedures.

- (a) In conducting the performance tests required in §60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in §60.8(b). Acceptable alternative methods and procedures are given in paragraph (e) of this section.
- (b) The owner or operator shall determine compliance with the particulate matter standards in §60.672(a) as follows:
- (1) Method 5 or Method 17 shall be used to determine the particulate matter concentration. The sample volume shall be at least 1.70 dscm (60 dscf). For Method 5, if the gas stream being sampled is at ambient temperature, the sampling probe and filter may be operated without heaters. If the gas stream is above ambient temperature, the sampling probe and filter may be operated at a temperature high enough, but no higher than 121 °C (250 °F), to prevent water condensation on the filter.
 - (2) Method 9 and the procedures in §60.11 shall be used to determine opacity.
- (c) (1) In determining compliance with the particulate matter standards in §60.672 (b) and (c), the owner or operator shall use Method 9 and the procedures in §60.11, with the following additions:
- (i) The minimum distance between the observer and the emission source shall be 4.57 meters (15 feet).
 - (ii) The observer shall, when possible, select a position that minimizes interference from other fugitive emission sources (e.g., road dust). The required observer position relative to the sun (Method 9, Section 2.1) must be followed.
 - (iii) For affected facilities using wet dust suppression for particulate matter control, a visible mist is sometimes generated by the spray. The water mist must not be confused with particulate matter emissions and is not to be considered a visible emission. When a water mist of this nature is present, the observation of emissions is to be made at a point in the plume where the mist is no longer visible.
- (2) In determining compliance with the opacity of stack emissions from any baghouse that controls emissions only from an individual enclosed storage bin under §60.672(f) of this subpart, using Method 9, the duration of the Method 9 observations shall be 1 hour (ten 6-minute averages).
- (3) When determining compliance with the fugitive emissions standard for any affected facility described under §60.672(b) of this subpart, the duration of the Method 9 observations may be reduced from 3 hours (thirty 6-minute averages) to 1 hour (ten 6-minute averages) only if the following conditions apply:
- (i) There are no individual readings greater than 10 percent opacity; and
 - (ii) There are no more than 3 readings of 10 percent for the 1-hour period.

- (4) When determining compliance with the fugitive emissions standard for any crusher at which a capture system is not used as described under §60.672(c) of this subpart, the duration of the Method 9 observations may be reduced from 3 hours (thirty 6-minute averages) to 1 hour (ten 6-minute averages) only if the following conditions apply:
- (i) There are no individual readings greater than 15 percent opacity; and
 - (ii) There are no more than 3 readings of 15 percent for the 1-hour period.
- (d) In determining compliance with §60.672(e), the owner or operator shall use Method 22 to determine fugitive emissions. The performance test shall be conducted while all affected facilities inside the building are operating. The performance test for each building shall be at least 75 minutes in duration, with each side of the building and the roof being observed for at least 15 minutes.
- (e) The owner or operator may use the following as alternatives to the reference methods and procedures specified in this section:
- (1) For the method and procedure of paragraph (c) of this section, if emissions from two or more facilities continuously interfere so that the opacity of fugitive emissions from an individual affected facility cannot be read, either of the following procedures may be used:
 - (i) Use for the combined emission stream the highest fugitive opacity standard applicable to any of the individual affected facilities contributing to the emissions stream.
 - (ii) Separate the emissions so that the opacity of emissions from each affected facility can be read.
- (f) To comply with §60.676(d), the owner or operator shall record the measurements as required in §60.676(c) using the monitoring devices in §60.674 (a) and (b) during each particulate matter run and shall determine the averages.
- (g) If, after 30 days notice for an initially scheduled performance test, there is a delay (due to operational problems, etc.) in conducting any rescheduled performance test required in this section, the owner or operator of an affected facility shall submit a notice to the Administrator at least 7 days prior to any rescheduled performance test.
- (h) Initial Method 9 performance tests under §60.11 of this part and §60.675 of this subpart are not required for:
- (1) Wet screening operations and subsequent screening operations, bucket elevators, and belt conveyors that process saturated material in the production line up to, but not including the next crusher, grinding mill, or storage bin.
 - (2) Screening operations, bucket elevators, and belt conveyors in the production line downstream of wet mining operations, that process saturated materials up to the first crusher, grinding mill, or storage bin in the production line.

[54 FR 6680, Feb. 14, 1989, as amended at 62 FR 31360, June 9, 1997]

§ 60.676 Reporting and recordkeeping.

- (a) Each owner or operator seeking to comply with §60.670(d) shall submit to the Administrator the following information about the existing facility being replaced and the replacement piece of equipment.

- (1) For a crusher, grinding mill, bucket elevator, bagging operation, or enclosed truck or railcar loading station:
 - (i) The rated capacity in megagrams or tons per hour of the existing facility being replaced and
 - (ii) The rated capacity in tons per hour of the replacement equipment.
- (2) For a screening operation:
 - (i) The total surface area of the top screen of the existing screening operation being replaced and
 - (ii) The total surface area of the top screen of the replacement screening operation.
- (3) For a conveyor belt:
 - (i) The width of the existing belt being replaced and
 - (ii) The width of the replacement conveyor belt.
- (4) For a storage bin:
 - (i) The rated capacity in megagrams or tons of the existing storage bin being replaced and
 - (ii) The rated capacity in megagrams or tons of replacement storage bins.
- (b) [Reserved]
- (c) During the initial performance test of a wet scrubber, and daily thereafter, the owner or operator shall record the measurements of both the change in pressure of the gas stream across the scrubber and the scrubbing liquid flow rate.
- (d) After the initial performance test of a wet scrubber, the owner or operator shall submit semiannual reports to the Administrator of occurrences when the measurements of the scrubber pressure loss (or gain) and liquid flow rate differ by more than ± 30 percent from the averaged determined during the most recent performance test.
- (e) The reports required under paragraph (d) shall be postmarked within 30 days following end of the second and fourth calendar quarters.
- (f) The owner or operator of any affected facility shall submit written reports of the results of all performance tests conducted to demonstrate compliance with the standards set forth in §60.672 of this subpart, including reports of opacity observations made using Method 9 to demonstrate compliance with §60.672(b), (c), and (f), and reports of observations using Method 22 to demonstrate compliance with §60.672(e).
- (g) The owner or operator of any screening operation, bucket elevator, or belt conveyor that processes saturated material and is subject to §60.672(h) and subsequently processes unsaturated materials, shall submit a report of this change within 30 days following such change. This screening operation, bucket elevator, or belt conveyor is then subject to the 10 percent opacity limit in §60.672(b) and the emission test requirements of §60.11 and this subpart. Likewise, a screening operation, bucket elevator, or belt conveyor that processes unsaturated material but subsequently processes saturated material shall submit a report of this change within 30 days following such change. This screening operation, bucket elevator, or belt conveyor is then subject to the no visible emission limit in §60.672(h).

- (h) The subpart A requirement under §60.7(a)(2) for notification of the anticipated date of initial startup of an affected facility shall be waived for owners or operators of affected facilities regulated under this subpart.
- (i) A notification of the actual date of initial startup of each affected facility shall be submitted to the Administrator.
 - (1) For a combination of affected facilities in a production line that begin actual initial startup on the same day, a single notification of startup may be submitted by the owner or operator to the Administrator. The notification shall be postmarked within 15 days after such date and shall include a description of each affected facility, equipment manufacturer, and serial number of the equipment, if available.
 - (2) For portable aggregate processing plants, the notification of the actual date of initial startup shall include both the home office and the current address or location of the portable plant.
- (j) The requirements of this section remain in force until and unless the Agency, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such States. In that event, affected facilities within the State will be relieved of the obligation to comply with the reporting requirements of this section, provided that they comply with requirements established by the State.

[51 FR 31337, Aug. 1, 1985, as amended at 54 FR 6680, Feb. 14, 1989; 62 FR 31360, June 9, 1997; 65 FR 61778, Oct. 17, 2000]

Reference:

The US EPA Electronic Code of Federal Regulations - 40 CFR 60, Subpart OOO—Standards Of Performance For Nonmetallic Mineral Processing Plants weblink:

<http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=43918166a5e8fa1b77b615cd0efc6c39&rqn=div6&view=text&node=40:6.0.1.1.1.80&idno=40>

**FEDERALLY ENFORCEABLE
STATE OPERATING PERMIT
OFFICE OF AIR QUALITY/**

**Rieth-Riley Construction Company, Inc.
Portable Source**

Attachment D

Title 40: Protection of Environment

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

**Subpart CCCCCC - NESHAPs for Source Category:
Gasoline Dispensing Facilities**

F157-28338-05267

40 CFR 63, Subpart CCCCC - National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities

Source: 73 FR 1945, Jan. 10, 2008, unless otherwise noted.

What This Subpart Covers

§ 63.11110 What is the purpose of this subpart?

This subpart establishes national emission limitations and management practices for hazardous air pollutants (HAP) emitted from the loading of gasoline storage tanks at gasoline dispensing facilities (GDF). This subpart also establishes requirements to demonstrate compliance with the emission limitations and management practices.

§ 63.11111 Am I subject to the requirements in this subpart?

- (a) The affected source to which this subpart applies is each GDF that is located at an area source. The affected source includes each gasoline cargo tank during the delivery of product to a GDF and also includes each storage tank.
- (b) If your GDF has a monthly throughput of less than 10,000 gallons of gasoline, you must comply with the requirements in §63.11116.
- (c) If your GDF has a monthly throughput of 10,000 gallons of gasoline or more, you must comply with the requirements in §63.11117.
- (d) If your GDF has a monthly throughput of 100,000 gallons of gasoline or more, you must comply with the requirements in §63.11118.
- (e) An affected source shall, upon request by the Administrator, demonstrate that their average monthly throughput is less than the 10,000-gallon or the 100,000-gallon threshold level, as applicable.
- (f) If you are an owner or operator of affected sources, as defined in paragraph (a) of this section, you are not required to obtain a permit under 40 CFR part 70 or 40 CFR part 71 as a result of being subject to this subpart. However, you must still apply for and obtain a permit under 40 CFR part 70 or 40 CFR part 71 if you meet one or more of the applicability criteria found in 40 CFR 70.3(a) and (b) or 40 CFR 71.3(a) and (b).
- (g) The loading of aviation gasoline storage tanks at airports is not subject to this subpart and the aviation gasoline is not included in the gasoline throughput specified in paragraphs (b) through (e) of this section.

§ 63.11112 What parts of my affected source does this subpart cover?

- (a) The emission sources to which this subpart applies are gasoline storage tanks and associated equipment components in vapor or liquid gasoline service at new, reconstructed, or existing GDF that meet the criteria specified in §63.11111. Pressure/Vacuum vents on gasoline storage tanks and the equipment necessary to unload product from cargo tanks into the storage tanks at GDF are covered emission sources. The equipment used for the refueling of motor vehicles is not covered by this subpart.
- (b) An affected source is a new affected source if you commenced construction on the affected source after November 9, 2006, and you meet the applicability criteria in §63.11111 at the time you commenced operation.

(c) An affected source is reconstructed if you meet the criteria for reconstruction as defined in §63.2.

(d) An affected source is an existing affected source if it is not new or reconstructed.

§ 63.11113 When do I have to comply with this subpart?

(a) If you have a new or reconstructed affected source, you must comply with this subpart according to paragraphs (a)(1) and (2) of this section, except as specified in paragraph (d) of this section.

(1) If you start up your affected source before January 10, 2008, you must comply with the standards in this subpart no later than January 10, 2008.

(2) If you start up your affected source after January 10, 2008, you must comply with the standards in this subpart upon startup of your affected source.

(b) If you have an existing affected source, you must comply with the standards in this subpart no later than January 10, 2011.

(c) If you have an existing affected source that becomes subject to the control requirements in this subpart because of an increase in the average monthly throughput, as specified in §63.11111(c) or §63.11111(d), you must comply with the standards in this subpart no later than 3 years after the affected source becomes subject to the control requirements in this subpart.

(d) If you have a new or reconstructed affected source and you are complying with Table 1 to this subpart, you must comply according to paragraphs (d)(1) and (2) of this section.

(1) If you start up your affected source from November 9, 2006 to September 23, 2008, you must comply no later than September 23, 2008.

(2) If you start up your affected source after September 23, 2008, you must comply upon startup of your affected source.

[73 FR 1945, Jan. 10, 2008, as amended at 73 FR 35944, June 25, 2008]

Emission Limitations and Management Practices

§ 63.11116 Requirements for facilities with monthly throughput of less than 10,000 gallons of gasoline.

(a) You must not allow gasoline to be handled in a manner that would result in vapor releases to the atmosphere for extended periods of time. Measures to be taken include, but are not limited to, the following:

(1) Minimize gasoline spills;

(2) Clean up spills as expeditiously as practicable;

(3) Cover all open gasoline containers and all gasoline storage tank fill-pipes with a gasketed seal when not in use;

(4) Minimize gasoline sent to open waste collection systems that collect and transport gasoline to reclamation and recycling devices, such as oil/water separators.

(b) You are not required to submit notifications or reports, but you must have records available within 24 hours of a request by the Administrator to document your gasoline throughput.

(c) You must comply with the requirements of this subpart by the applicable dates specified in §63.11113.

§ 63.11117 Requirements for facilities with monthly throughput of 10,000 gallons of gasoline or more.

(a) You must comply with the requirements in section §63.11116(a).

(b) Except as specified in paragraph (c), you must only load gasoline into storage tanks at your facility by utilizing submerged filling, as defined in §63.11132, and as specified in paragraph (b)(1) or paragraph (b)(2) of this section.

(1) Submerged fill pipes installed on or before November 9, 2006, must be no more than 12 inches from the bottom of the storage tank.

(2) Submerged fill pipes installed after November 9, 2006, must be no more than 6 inches from the bottom of the storage tank.

(c) Gasoline storage tanks with a capacity of less than 250 gallons are not required to comply with the submerged fill requirements in paragraph (b) of this section, but must comply only with all of the requirements in §63.11116.

(d) You must have records available within 24 hours of a request by the Administrator to document your gasoline throughput.

(e) You must submit the applicable notifications as required under §63.11124(a).

(f) You must comply with the requirements of this subpart by the applicable dates contained in §63.11113.

[73 FR 1945, Jan. 10, 2008, as amended at 73 FR 12276, Mar. 7, 2008]

§ 63.11118 Requirements for facilities with monthly throughput of 100,000 gallons of gasoline or more.

(a) You must comply with the requirements in §§63.11116(a) and 63.11117(b).

(b) Except as provided in paragraph (c) of this section, you must meet the requirements in either paragraph (b)(1) or paragraph (b)(2) of this section.

(1) Each management practice in Table 1 to this subpart that applies to your GDF.

(2) If, prior to January 10, 2008, you satisfy the requirements in both paragraphs (b)(2)(i) and (ii) of this section, you will be deemed in compliance with this subsection.

(i) You operate a vapor balance system at your GDF that meets the requirements of either paragraph (b)(2)(i)(A) or paragraph (b)(2)(i)(B) of this section.

(A) Achieves emissions reduction of at least 90 percent.

(B) Operates using management practices at least as stringent as those in Table 1 to this subpart.

(ii) Your gasoline dispensing facility is in compliance with an enforceable State, local, or tribal rule or permit that contains requirements of either paragraph (b)(2)(i)(A) or paragraph (b)(2)(i)(B) of this section.

(c) The emission sources listed in paragraphs (c)(1) through (3) of this section are not required to comply with the control requirements in paragraph (b) of this section, but must comply with the requirements in §63.11117.

(1) Gasoline storage tanks with a capacity of less than 250 gallons that are constructed after January 10, 2008.

(2) Gasoline storage tanks with a capacity of less than 2,000 gallons that were constructed before January 10, 2008.

(3) Gasoline storage tanks equipped with floating roofs, or the equivalent.

(d) Cargo tanks unloading at GDF must comply with the management practices in Table 2 to this subpart.

(e) You must comply with the applicable testing requirements contained in §63.11120.

(f) You must submit the applicable notifications as required under §63.11124.

(g) You must keep records and submit reports as specified in §§63.11125 and 63.11126.

(h) You must comply with the requirements of this subpart by the applicable dates contained in §63.11113.

[73 FR 1945, Jan. 10, 2008, as amended at 73 FR 12276, Mar. 7, 2008]

Testing and Monitoring Requirements

§ 63.11120 What testing and monitoring requirements must I meet?

(a) Each owner or operator, at the time of installation of a vapor balance system required under §63.11118(b)(1), and every 3 years thereafter, must comply with the requirements in paragraphs (a)(1) and (2) of this section.

(1) You must demonstrate compliance with the leak rate and cracking pressure requirements, specified in item 1(g) of Table 1 to this subpart, for pressure-vacuum vent valves installed on your gasoline storage tanks using the test methods identified in paragraph (a)(1)(i) or paragraph (a)(1)(ii) of this section.

(i) California Air Resources Board Vapor Recovery Test Procedure TP-201.1E,—Leak Rate and Cracking Pressure of Pressure/Vacuum Vent Valves, adopted October 8, 2003 (incorporated by reference, see §63.14).

(ii) Use alternative test methods and procedures in accordance with the alternative test method requirements in §63.7(f).

(2) You must demonstrate compliance with the static pressure performance requirement, specified in item 1(h) of Table 1 to this subpart, for your vapor balance system by conducting a static pressure test on your gasoline storage tanks using the test methods identified in paragraph (a)(2)(i) or paragraph (a)(2)(ii) of this section.

(i) California Air Resources Board Vapor Recovery Test Procedure TP-201.3,—Determination of 2-Inch WC Static Pressure Performance of Vapor Recovery Systems of Dispensing Facilities, adopted April 12, 1996, and amended March 17, 1999 (incorporated by reference, see §63.14).

(ii) Use alternative test methods and procedures in accordance with the alternative test method requirements in §63.7(f).

(b) Each owner or operator choosing, under the provisions of §63.6(g), to use a vapor balance system other than that described in Table 1 to this subpart must demonstrate to the Administrator or delegated authority under paragraph §63.11131(a) of this subpart, the equivalency of their vapor balance system to that described in Table 1 to this subpart using the procedures specified in paragraphs (b)(1) through (3) of this section.

(1) You must demonstrate initial compliance by conducting an initial performance test on the vapor balance system to demonstrate that the vapor balance system achieves 95 percent reduction using the California Air Resources Board Vapor Recovery Test Procedure TP-201.1,—Volumetric Efficiency for Phase I Vapor Recovery Systems, adopted April 12, 1996, and amended February 1, 2001, and October 8, 2003, (incorporated by reference, see §63.14).

(2) You must, during the initial performance test required under paragraph (b)(1) of this section, determine and document alternative acceptable values for the leak rate and cracking pressure requirements specified in item 1(g) of Table 1 to this subpart and for the static pressure performance requirement in item 1(h) of Table 1 to this subpart.

(3) You must comply with the testing requirements specified in paragraph (a) of this section.

Notifications, Records, and Reports

§ 63.11124 What notifications must I submit and when?

(a) Each owner or operator subject to the control requirements in §63.11117 must comply with paragraphs (a)(1) through (3) of this section.

(1) You must submit an Initial Notification that you are subject to this subpart by May 9, 2008, or at the time you become subject to the control requirements in §63.11117, unless you meet the requirements in paragraph (a)(3) of this section. The Initial Notification must contain the information specified in paragraphs (a)(1)(i) through (iii) of this section. The notification must be submitted to the applicable EPA Regional Office and delegated State authority as specified in §63.13.

(i) The name and address of the owner and the operator.

(ii) The address (i.e., physical location) of the GDF.

(iii) A statement that the notification is being submitted in response to this subpart and identifying the requirements in paragraphs (a) through (c) of §63.11117 that apply to you.

(2) You must submit a Notification of Compliance Status to the applicable EPA Regional Office and the delegated State authority, as specified in §63.13, by the compliance date specified in §63.11113 unless you meet the requirements in paragraph (a)(3) of this section. The Notification of Compliance Status must be signed by a responsible official who must certify its accuracy and must indicate whether the source has complied with the requirements of this subpart. If your facility is in compliance with the requirements of this subpart at the time the Initial Notification required under paragraph (a)(1) of this section is due, the Notification of Compliance Status may be submitted in lieu of the Initial Notification provided it contains

the information required under paragraph (a)(1) of this section.

(3) If, prior to January 10, 2008, you are operating in compliance with an enforceable State, local, or tribal rule or permit that requires submerged fill as specified in §63.11117(b), you are not required to submit an Initial Notification or a Notification of Compliance Status under paragraph (a)(1) or paragraph (a)(2) of this section.

(b) Each owner or operator subject to the control requirements in §63.11118 must comply with paragraphs (b)(1) through (5) of this section.

(1) You must submit an Initial Notification that you are subject to this subpart by May 9, 2008, or at the time you become subject to the control requirements in §63.11118. The Initial Notification must contain the information specified in paragraphs (b)(1)(i) through (iii) of this section. The notification must be submitted to the applicable EPA Regional Office and the delegated State authority as specified in §63.13.

(i) The name and address of the owner and the operator.

(ii) The address (i.e., physical location) of the GDF.

(iii) A statement that the notification is being submitted in response to this subpart and identifying the requirements in paragraphs (a) through (c) of §63.11118 that apply to you.

(2) You must submit a Notification of Compliance Status to the applicable EPA Regional Office and the delegated State authority, as specified in §63.13, by the compliance date specified in §63.11113. The Notification of Compliance Status must be signed by a responsible official who must certify its accuracy and must indicate whether the source has complied with the requirements of this subpart. If your facility is in compliance with the requirements of this subpart at the time the Initial Notification required under paragraph (b)(1) of this section is due, the Notification of Compliance Status may be submitted in lieu of the Initial Notification provided it contains the information required under paragraph (b)(1) of this section.

(3) If, prior to January 10, 2008, you satisfy the requirements in both paragraphs (b)(3)(i) and (ii) of this section, you are not required to submit an Initial Notification or a Notification of Compliance Status under paragraph (b)(1) or paragraph (b)(2) of this subsection.

(i) You operate a vapor balance system at your gasoline dispensing facility that meets the requirements of either paragraphs (b)(3)(i)(A) or (b)(3)(i)(B) of this section.

(A) Achieves emissions reduction of at least 90 percent.

(B) Operates using management practices at least as stringent as those in Table 1 to this subpart.

(ii) Your gasoline dispensing facility is in compliance with an enforceable State, local, or tribal rule or permit that contains requirements of either paragraphs (b)(3)(i)(A) or (b)(3)(i)(B) of this section.

(4) You must submit a Notification of Performance Test, as specified in §63.9(e), prior to initiating testing required by §63.11120(a) and (b).

(5) You must submit additional notifications specified in §63.9, as applicable.

[73 FR 1945, Jan. 10, 2008, as amended at 73 FR 12276, Mar. 7, 2008]

§ 63.11125 What are my recordkeeping requirements?

(a) Each owner or operator subject to the management practices in §63.11118 must keep records of all tests performed under §63.11120(a) and (b).

(b) Records required under paragraph (a) of this section shall be kept for a period of 5 years and shall be made available for inspection by the Administrator's delegated representatives during the course of a site visit.

§ 63.11126 What are my reporting requirements?

Each owner or operator subject to the management practices in §63.11118 shall report to the Administrator the results of all volumetric efficiency tests required under §63.11120(b). Reports submitted under this paragraph must be submitted within 180 days of the completion of the performance testing.

Other Requirements and Information

§ 63.11130 What parts of the General Provisions apply to me?

Table 3 to this subpart shows which parts of the General Provisions apply to you.

§ 63.11131 Who implements and enforces this subpart?

(a) This subpart can be implemented and enforced by the U.S. EPA or a delegated authority such as the applicable State, local, or tribal agency. If the U.S. EPA Administrator has delegated authority to a State, local, or tribal agency, then that agency, in addition to the U.S. EPA, has the authority to implement and enforce this subpart. Contact the applicable U.S. EPA Regional Office to find out if implementation and enforcement of this subpart is delegated to a State, local, or tribal agency.

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

(c) The authorities that cannot be delegated to State, local, or tribal agencies are as specified in paragraphs (c)(1) through (3) of this section.

(1) Approval of alternatives to the requirements in §§63.11116 through 63.11118 and 63.11120.

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

(3) Approval of major alternatives to recordkeeping and reporting under §63.10(f), as defined in §63.90, and as required in this subpart.

§ 63.11132 What definitions apply to this subpart?

As used in this subpart, all terms not defined herein shall have the meaning given them in the Clean Air Act (CAA), or in subparts A and BBBBBB of this part. For purposes of this subpart, definitions in this section supersede definitions in other parts or subparts.

Dual-point vapor balance system means a type of vapor balance system in which the storage tank is equipped with an entry port for a gasoline fill pipe and a separate exit port for a vapor connection.

Gasoline cargo tank means a delivery tank truck or railcar which is loading gasoline or which has loaded

gasoline on the immediately previous load.

Gasoline dispensing facility (GDF) means any stationary facility which dispenses gasoline into the fuel tank of a motor vehicle.

Monthly throughput means the total volume of gasoline that is loaded into all gasoline storage tanks during a month, as calculated on a rolling 30-day average.

Submerged filling means, for the purposes of this subpart, the filling of a gasoline storage tank through a submerged fill pipe whose discharge is no more than the applicable distance specified in §63.11117(b) from the bottom of the tank. Bottom filling of gasoline storage tanks is included in this definition.

Vapor balance system means a combination of pipes and hoses that create a closed system between the vapor spaces of an unloading gasoline cargo tank and a receiving storage tank such that vapors displaced from the storage tank are transferred to the gasoline cargo tank being unloaded.

Vapor-tight means equipment that allows no loss of vapors. Compliance with vapor-tight requirements can be determined by checking to ensure that the concentration at a potential leak source is not equal to or greater than 100 percent of the Lower Explosive Limit when measured with a combustible gas detector, calibrated with propane, at a distance of 1 inch from the source.

Table 1 to Subpart CCCCC of Part 63—Applicability Criteria and Management Practices for Gasoline Dispensing Facilities With Monthly Throughput of 100,000 Gallons of Gasoline or More

If you own or operate	Then you must
1. A new, reconstructed, or existing GDF subject to §63.11118	Install and operate a vapor balance system on your gasoline storage tanks that meets the design criteria in paragraphs (a) through (h).
	(a) All vapor connections and lines on the storage tank shall be equipped with closures that seal upon disconnect.
	(b) The vapor line from the gasoline storage tank to the gasoline cargo tank shall be vapor-tight, as defined in §63.11132.
	(c) The vapor balance system shall be designed such that the pressure in the tank truck does not exceed 18 inches water pressure or 5.9 inches water vacuum during product transfer.
	(d) The vapor recovery and product adaptors, and the method of connection with the delivery elbow, shall be designed so as to prevent the over-tightening or loosening of fittings during normal delivery operations.
	(e) If a gauge well separate from the fill tube is used, it shall be provided with a submerged drop tube that extends the same distance from the bottom of the storage tank as specified in §63.11117(b).
	(f) Liquid fill connections for all systems shall be equipped with vapor-tight caps.
	(g) Pressure/vacuum (PV) vent valves shall be installed on the storage tank vent pipes. The pressure specifications for PV vent valves shall be: a positive pressure setting of 2.5 to 6.0 inches of water and a negative pressure setting of 6.0 to 10.0 inches of water. The total leak rate of all PV vent valves at an affected facility, including connections, shall not exceed 0.17 cubic foot per hour at a pressure of 2.0 inches of water and 0.63 cubic foot per hour at a vacuum of 4 inches of water.
	(h) The vapor balance system shall be capable of meeting the static pressure performance requirement of the following equation:

If you own or operate	Then you must
	$Pf = 2e^{-500.887/v}$
	Where:
	Pf = Minimum allowable final pressure, inches of water.
	v = Total ullage affected by the test, gallons.
	e = Dimensionless constant equal to approximately 2.718.
	2 = The initial pressure, inches water.
2. For new or reconstructed GDF, or new storage tank(s) at an existing affected facility subject to §63.11118	Equip your gasoline storage tanks with a dual-point vapor balance system, as defined in §63.11132, and comply with the requirements of item 1 in this Table.

[73 FR 1945, Jan. 10, 2008, as amended at 73 FR 35944, June 25, 2008]

Table 2 to Subpart CCCCCC of Part 63—Applicability Criteria and Management Practices for Gasoline Cargo Tanks Unloading at Gasoline Dispensing Facilities With Monthly Throughput of 100,000 Gallons of Gasoline or More

If you own or operate	Then you must
A gasoline cargo tank	Not unload gasoline into a storage tank at a GDF subject to the control requirements in this subpart unless the following conditions are met:
	(i) All hoses in the vapor balance system are properly connected,
	(ii) The adapters or couplers that attach to the vapor line on the storage tank have closures that seal upon disconnect,
	(iii) All vapor return hoses, couplers, and adapters used in the gasoline delivery are vapor-tight,
	(iv) All tank truck vapor return equipment is compatible in size and forms a vapor-tight connection with the vapor balance equipment on the GDF storage tank, and
	(v) All hatches on the tank truck are closed and securely fastened.
	(vi) The filling of storage tanks at GDF shall be limited to unloading by vapor-tight gasoline cargo tanks. Documentation that the cargo tank has met the specifications of EPA Method 27 shall be carried on the cargo tank.

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Table 3 to Subpart CCCCC of Part 63—Applicability of General Provisions

Citation	Subject	Brief description	Applies to subpart CCCCC
§63.1	Applicability	Initial applicability determination; applicability after standard established; permit requirements; extensions, notifications	Yes, specific requirements given in §63.11111.
§63.1(c)(2)	Title V Permit	Requirements for obtaining a title V permit from the applicable permitting authority	Yes, §63.11111(f) of subpart CCCCC exempts identified area sources from the obligation to obtain title V operating permits.
§63.2	Definitions	Definitions for part 63 standards	Yes, additional definitions in §63.11132.
§63.3	Units and Abbreviations	Units and abbreviations for part 63 standards	Yes.
§63.4	Prohibited Activities and Circumvention	Prohibited activities; Circumvention, severability	Yes.
§63.5	Construction/Reconstruction	Applicability; applications; approvals	Yes.
§63.6(a)	Compliance with Standards/Operation & Maintenance—Applicability	General Provisions apply unless compliance extension; General Provisions apply to area sources that become major	Yes.
§63.6(b)(1)–(4)	Compliance Dates for New and Reconstructed Sources	Standards apply at effective date; 3 years after effective date; upon startup; 10 years after construction or reconstruction commences for CAA section 112(f)	Yes.
§63.6(b)(5)	Notification	Must notify if commenced construction or reconstruction after proposal	Yes.
§63.6(b)(6)	[Reserved]		
§63.6(b)(7)	Compliance Dates for New and Reconstructed Area Sources That Become Major	Area sources that become major must comply with major source standards immediately upon becoming major, regardless of whether required to comply when they were an area source	No.
§63.6(c)(1)–(2)	Compliance Dates for Existing Sources	Comply according to date in this subpart, which must be no later than 3 years after effective date; for CAA section 112(f) standards, comply within 90 days of effective date unless compliance extension	No, §63.11113 specifies the compliance dates.
§63.6(c)(3)–(4)	[Reserved]		
§63.6(c)(5)	Compliance Dates for Existing Area Sources That Become Major	Area sources That become major must comply with major source standards by date indicated in this subpart or by equivalent time period (e.g., 3 years)	No.
§63.6(d)	[Reserved]		
§63.6(e)(1)	Operation & Maintenance	Operate to minimize emissions at	Yes.

Citation	Subject	Brief description	Applies to subpart CCCCCC
		all times; correct malfunctions as soon as practicable; and operation and maintenance requirements independently enforceable; information Administrator will use to determine if operation and maintenance requirements were met	
§63.6(e)(2)	[Reserved]		
§63.6(e)(3)	Startup, Shutdown, and Malfunction (SSM) Plan	Requirement for SSM plan; content of SSM plan; actions during SSM	No.
§63.6(f)(1)	Compliance Except During SSM	You must comply with emission standards at all times except during SSM	No.
§63.6(f)(2)–(3)	Methods for Determining Compliance	Compliance based on performance test, operation and maintenance plans, records, inspection	Yes.
§63.6(g)(1)–(3)	Alternative Standard	Procedures for getting an alternative standard	Yes.
§63.6(h)(1)	Compliance with Opacity/Visible Emission (VE) Standards	You must comply with opacity/VE standards at all times except during SSM	No.
§63.6(h)(2)(i)	Determining Compliance with Opacity/VE Standards	If standard does not State test method, use EPA Method 9 for opacity in appendix A of part 60 of this chapter and EPA Method 22 for VE in appendix A of part 60 of this chapter	No.
§63.6(h)(2)(ii)	[Reserved]		
§63.6(h)(2)(iii)	Using Previous Tests To Demonstrate Compliance With Opacity/VE Standards	Criteria for when previous opacity/VE testing can be used to show compliance with this subpart	No.
§63.6(h)(3)	[Reserved]		
§63.6(h)(4)	Notification of Opacity/VE Observation Date	Must notify Administrator of anticipated date of observation	No.
§63.6(h)(5)(i), (iii)–(v)	Conducting Opacity/VE Observations	Dates and schedule for conducting opacity/VE observations	No.
§63.6(h)(5)(ii)	Opacity Test Duration and Averaging Times	Must have at least 3 hours of observation with 30 6-minute averages	No.
§63.6(h)(6)	Records of Conditions During Opacity/VE Observations	Must keep records available and allow Administrator to inspect	No.
§63.6(h)(7)(i)	Report Continuous Opacity Monitoring System (COMS) Monitoring Data From Performance Test	Must submit COMS data with other performance test data	No.
§63.6(h)(7)(ii)	Using COMS Instead of EPA Method 9	Can submit COMS data instead of EPA Method 9 results even if rule requires EPA Method 9 in appendix A of part 60 of this chapter, but must notify Administrator before performance test	No.

Citation	Subject	Brief description	Applies to subpart CCCCC
§63.6(h)(7)(iii)	Averaging Time for COMS During Performance Test	To determine compliance, must reduce COMS data to 6-minute averages	No.
§63.6(h)(7)(iv)	COMS Requirements	Owner/operator must demonstrate that COMS performance evaluations are conducted according to §63.8(e); COMS are properly maintained and operated according to §63.8(c) and data quality as §63.8(d)	No.
§63.6(h)(7)(v)	Determining Compliance with Opacity/VE Standards	COMS is probable but not conclusive evidence of compliance with opacity standard, even if EPA Method 9 observation shows otherwise. Requirements for COMS to be probable evidence-proper maintenance, meeting Performance Specification 1 in appendix B of part 60 of this chapter, and data have not been altered	No.
§63.6(h)(8)	Determining Compliance with Opacity/VE Standards	Administrator will use all COMS, EPA Method 9 (in appendix A of part 60 of this chapter), and EPA Method 22 (in appendix A of part 60 of this chapter) results, as well as information about operation and maintenance to determine compliance	No.
§63.6(h)(9)	Adjusted Opacity Standard	Procedures for Administrator to adjust an opacity standard	No.
§63.6(i)(1)–(14)	Compliance Extension	Procedures and criteria for Administrator to grant compliance extension	Yes.
§63.6(j)	Presidential Compliance Exemption	President may exempt any source from requirement to comply with this subpart	Yes.
§63.7(a)(2)	Performance Test Dates	Dates for conducting initial performance testing; must conduct 180 days after compliance date	Yes.
§63.7(a)(3)	CAA Section 114 Authority	Administrator may require a performance test under CAA section 114 at any time	Yes.
§63.7(b)(1)	Notification of Performance Test	Must notify Administrator 60 days before the test	Yes.
§63.7(b)(2)	Notification of Re-scheduling	If have to reschedule performance test, must notify Administrator of rescheduled date as soon as practicable and without delay	Yes.
§63.7(c)	Quality Assurance (QA)/Test Plan	Requirement to submit site-specific test plan 60 days before the test or on date Administrator agrees with; test plan approval procedures; performance audit requirements; internal and external QA procedures for testing	Yes.
§63.7(d)	Testing Facilities	Requirements for testing facilities	Yes.
§63.7(e)(1)	Conditions for Conducting Performance Tests	Performance tests must be conducted under representative conditions; cannot conduct performance tests during SSM	Yes.

Citation	Subject	Brief description	Applies to subpart CCCCCC
§63.7(e)(2)	Conditions for Conducting Performance Tests	Must conduct according to this subpart and EPA test methods unless Administrator approves alternative	Yes.
§63.7(e)(3)	Test Run Duration	Must have three test runs of at least 1 hour each; compliance is based on arithmetic mean of three runs; conditions when data from an additional test run can be used	Yes.
§63.7(f)	Alternative Test Method	Procedures by which Administrator can grant approval to use an intermediate or major change, or alternative to a test method	Yes.
§63.7(g)	Performance Test Data Analysis	Must include raw data in performance test report; must submit performance test data 60 days after end of test with the Notification of Compliance Status; keep data for 5 years	Yes.
§63.7(h)	Waiver of Tests	Procedures for Administrator to waive performance test	Yes.
§63.8(a)(1)	Applicability of Monitoring Requirements	Subject to all monitoring requirements in standard	Yes.
§63.8(a)(2)	Performance Specifications	Performance Specifications in appendix B of 40 CFR part 60 apply	Yes.
§63.8(a)(3)	[Reserved]		
§63.8(a)(4)	Monitoring of Flares	Monitoring requirements for flares in §63.11 apply	Yes.
§63.8(b)(1)	Monitoring	Must conduct monitoring according to standard unless Administrator approves alternative	Yes.
§63.8(b)(2)–(3)	Multiple Effluents and Multiple Monitoring Systems	Specific requirements for installing monitoring systems; must install on each affected source or after combined with another affected source before it is released to the atmosphere provided the monitoring is sufficient to demonstrate compliance with the standard; if more than one monitoring system on an emission point, must report all monitoring system results, unless one monitoring system is a backup	No.
§63.8(c)(1)	Monitoring System Operation and Maintenance	Maintain monitoring system in a manner consistent with good air pollution control practices	No.
§63.8(c)(1)(i)–(iii)	Routine and Predictable SSM	Follow the SSM plan for routine repairs; keep parts for routine repairs readily available; reporting requirements for SSM when action is described in SSM plan	No.
§63.8(c)(2)–(8)	Continuous Monitoring System (CMS) Requirements	Must install to get representative emission or parameter measurements; must verify operational status before or at performance test	No.
§63.8(d)	CMS Quality Control	Requirements for CMS quality control,	No.

Citation	Subject	Brief description	Applies to subpart CCCCCC
		including calibration, etc.; must keep quality control plan on record for 5 years; keep old versions for 5 years after revisions	
§63.8(e)	CMS Performance Evaluation	Notification, performance evaluation test plan, reports	No.
§63.8(f)(1)–(5)	Alternative Monitoring Method	Procedures for Administrator to approve alternative monitoring	No.
§63.8(f)(6)	Alternative to Relative Accuracy Test	Procedures for Administrator to approve alternative relative accuracy tests for continuous emissions monitoring system (CEMS)	No.
§63.8(g)	Data Reduction	COMS 6-minute averages calculated over at least 36 evenly spaced data points; CEMS 1 hour averages computed over at least 4 equally spaced data points; data that cannot be used in average	No.
§63.9(a)	Notification Requirements	Applicability and State delegation	Yes.
§63.9(b)(1)–(2), (4)–(5)	Initial Notifications	Submit notification within 120 days after effective date; notification of intent to construct/reconstruct, notification of commencement of construction/reconstruction, notification of startup; contents of each	Yes.
§63.9(c)	Request for Compliance Extension	Can request if cannot comply by date or if installed best available control technology or lowest achievable emission rate	Yes.
§63.9(d)	Notification of Special Compliance Requirements for New Sources	For sources that commence construction between proposal and promulgation and want to comply 3 years after effective date	Yes.
§63.9(e)	Notification of Performance Test	Notify Administrator 60 days prior	Yes.
§63.9(f)	Notification of VE/Opacity Test	Notify Administrator 30 days prior	No.
§63.9(g)	Additional Notifications when Using CMS	Notification of performance evaluation; notification about use of COMS data; notification that exceeded criterion for relative accuracy alternative	Yes, however, there are no opacity standards.
§63.9(h)(1)–(6)	Notification of Compliance Status	Contents due 60 days after end of performance test or other compliance demonstration, except for opacity/VE, which are due 30 days after; when to submit to Federal vs. State authority	Yes, however, there are no opacity standards.
§63.9(i)	Adjustment of Submittal Deadlines	Procedures for Administrator to approve change when notifications must be submitted	Yes.
§63.9(j)	Change in Previous Information	Must submit within 15 days after the change	Yes.
§63.10(a)	Recordkeeping/Reporting	Applies to all, unless compliance extension; when to submit to Federal vs. State authority; procedures for owners of more than one source	Yes.
§63.10(b)(1)	Recordkeeping/Reporting	General requirements; keep all records	Yes.

Citation	Subject	Brief description	Applies to subpart CCCCCC
		readily available; keep for 5 years	
§63.10(b)(2)(i)–(iv)	Records Related to SSM	Occurrence of each for operations (process equipment); occurrence of each malfunction of air pollution control equipment; maintenance on air pollution control equipment; actions during SSM	No.
§63.10(b)(2)(vi)–(xi)	CMS Records	Malfunctions, inoperative, out-of-control periods	No.
§63.10(b)(2)(xii)	Records	Records when under waiver	Yes.
§63.10(b)(2)(xiii)	Records	Records when using alternative to relative accuracy test	Yes.
§63.10(b)(2)(xiv)	Records	All documentation supporting Initial Notification and Notification of Compliance Status	Yes.
§63.10(b)(3)	Records	Applicability determinations	Yes.
§63.10(c)	Records	Additional records for CMS	No.
§63.10(d)(1)	General Reporting Requirements	Requirement to report	Yes.
§63.10(d)(2)	Report of Performance Test Results	When to submit to Federal or State authority	Yes.
§63.10(d)(3)	Reporting Opacity or VE Observations	What to report and when	No.
§63.10(d)(4)	Progress Reports	Must submit progress reports on schedule if under compliance extension	Yes.
§63.10(d)(5)	SSM Reports	Contents and submission	Yes.
§63.10(e)(1)–(2)	Additional CMS Reports	Must report results for each CEMS on a unit; written copy of CMS performance evaluation; two-three copies of COMS performance evaluation	No.
§63.10(e)(3)(i)–(iii)	Reports	Schedule for reporting excess emissions	Yes, note that §63.11130(K) specifies excess emission events for this subpart.
§63.10(e)(3)(iv)–(v)	Excess Emissions Reports	Requirement to revert to quarterly submission if there is an excess emissions and parameter monitor exceedances (now defined as deviations); provision to request semiannual reporting after compliance for 1 year; submit report by 30th day following end of quarter or calendar half; if there has not been an exceedance or excess emissions (now defined as deviations), report contents in a statement that there have been no deviations; must submit report containing all of the information in §§63.8(c)(7)–(8) and 63.10(c)(5)–(13)	No, §63.11130(K) specifies excess emission events for this subpart.

Citation	Subject	Brief description	Applies to subpart CCCCCC
§63.10(e)(3)(vi)–(viii)	Excess Emissions Report and Summary Report	Requirements for reporting excess emissions for CMS; requires all of the information in §§63.10(c)(5)–(13) and 63.8(c)(7)–(8)	No.
§63.10(e)(4)	Reporting COMS Data	Must submit COMS data with performance test data	No.
§63.10(f)	Waiver for Recordkeeping/Reporting	Procedures for Administrator to waive	Yes.
§63.11(b)	Flares	Requirements for flares	No.
§63.12	Delegation	State authority to enforce standards	Yes.
§63.13	Addresses	Addresses where reports, notifications, and requests are sent	Yes.
§63.14	Incorporations by Reference	Test methods incorporated by reference	Yes.
§63.15	Availability of Information	Public and confidential information	Yes.

Resource

EPA Summary of Regulations Controlling Air Emissions from Gasoline Dispensing Facilities (GDF) Fact Sheet
<http://www.epa.gov/ttn/atw/area/gdfb.pdf>

Reference

The US EPA Electronic Code of Federal Regulations - 40 CFR 63, Subpart CCCCCC National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities weblink:
<http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=ec747058ccd5763d83153eaa83fe7220&rqn=div6&view=text&node=40:14.0.1.1.1.15&idno=40>

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

Technical Support Document (TSD) for a Significant Permit Revision (SPR)
Greenhouse Gases (GHGs) Reopening to a Federally Enforceable State
Operating Permit (FESOP)

Source Description and Location

Source Name: Rieth-Riley Construction Company, Inc.
Source Location: 3425 O'Farrell Road, Lafayette, IN 47904
County: Tippecanoe
SIC Code: 2951
Operation Permit No.: F157-28338-05267
Operation Permit Issuance Date: May 6, 2010
Significant Permit Revision No.: F157-31522-05267
Permit Reviewer: Hannah L. Desrosiers

Rieth-Riley Construction Company, Inc. was issued a Federally Enforceable State Operating Permit (FESOP) Renewal No. F157-28338-05267 on May 6, 2010, for a portable drum hot-mix asphalt plant and cold-mix asphalt production operation located at 3425 O'Farrell Road, Lafayette, IN 47904.

On January 5, 2012, the Office of Air Quality (OAQ) provided notice to this source that the Greenhouse Gas (GHG) Tailoring Rule (75 FR 31514) set a date of July 1, 2012 for sources that have the potential to emit (PTE) greenhouse gases (GHGs) equal to or greater than 100,000 tons per year of carbon dioxide equivalent emissions (CO_{2e}) to apply for a Title V permit or revise their current FESOP to add limits on GHGs. This notice specified that companies could request IDEM to reopen their permit to add limits on GHGs. On February 17, 2012, IDEM OAQ received a request from this source to reopen its FESOP to add limits on GHGs, pursuant to the provisions of 326 IAC 2-8-8.

Existing Approvals

The source was issued FESOP Renewal No. F157-28338-05267 on May 6, 2010.

County Attainment Status

The source is located in Tippecanoe County. The following attainment status designations are applicable to Tippecanoe County:

Pollutant	Designation
O ₃	Unclassifiable or attainment effective June 15, 2004, for the 8-hour ozone standard. ¹
PM ₁₀	Unclassifiable effective November 15, 1990.
PM _{2.5}	Unclassifiable or attainment effective April 5, 2005
SO ₂	Better than national standards.
NO ₂	Cannot be classified or better than national standards.
CO	Unclassifiable or attainment effective November 15, 1990.
Pb	Not designated.

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

(a) Ozone Standards

Volatile organic compounds (VOC) and Nitrogen Oxides (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. Tippecanoe 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) PM_{2.5}

Tippecanoe County has been classified as attainment for PM_{2.5}. On May 8, 2008, U.S. EPA promulgated the requirements for Prevention of Significant Deterioration (PSD) for PM_{2.5} emissions. These rules became effective on July 15, 2008. On May 4, 2011 the air pollution control board issued an emergency rule establishing the direct PM_{2.5} significant level at ten (10) tons per year. This rule became effective, June 28, 2011. Therefore, direct PM_{2.5} and SO₂ emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2. See the State Rule Applicability – Entire Source section.

(c) Other Criteria Pollutants

Tippecanoe County has been classified as attainment or unclassifiable in Indiana for all other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

Fugitive Emissions

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

Description of Proposed Revision

Pursuant to 326 IAC 2-7-1(39), starting July 1, 2011, GHGs emissions are subject to regulation at a source with a potential to emit of 100,000 tons per year or more of CO₂e. Therefore, CO₂e emissions have been calculated for this source. Based on the calculations, the PTE greenhouse gases from the entire source is equal to or greater than 100,000 tons of CO₂e per year (see TSD Appendix A for detailed calculations). This source would have been subject to the provisions of 326 IAC 2-7. However, this source will be issued a Significant Permit Revision (SPR) to its existing FESOP because this source will limit its CO₂e emissions to less than the Title V subject to regulation threshold of 100,000 tons per year.

No new emission units are included in this proposed revision.

Emission Calculations

See Appendices A.1 and A.2 of this TSD for detailed emission calculations.

Note: In order to comply with the annual greenhouse gasses limit of 99,000.00 tons per year of CO₂e, Rieth-Riley Construction Company, Inc. will need to reduce the consumption of Butane in the dryer/mixer from 13,200,000 gallons per year to 12,967,711 gallons per year. Since the permit does not contain single fuel limits, and compliance with the SO₂, NOx, GHGs as CO₂e, VOC, and HAPs limits is determined using an equation, no change was made to the permit as a result of the adjustment to the Butane usage in the Dryer Fuel Combustion calculation worksheet, page 2 of 19 of TSD Appendix A.2. The reduction in Butane usage has had a negligible effect on the criteria pollutant and hazardous air pollutant (HAP) emissions.

PTE of the Entire Source After Issuance of the FESOP Revision
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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.

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Process/ Emission Unit	Potential To Emit of the Entire Source After Issuance of Revision (tons/year)									
	PM	PM ₁₀ ¹	PM _{2.5}	SO ₂ ²	NO _x ²	VOC ³	CO	GHGs as CO ₂ e ^{4,5}	Total HAPs	Worst Single HAP
Ducted Emissions										
Dryer Fuel Combustion (worst case) ^α	24.48	19.51	19.51	99.00	99.00	24.90	54.46	99,000.00	11.36	9.90 HCl
Dryer/Mixer ^β (Process)	196.79	82.29	90.60				65.00		5.33	1.55 (formaldehyde)
Dryer/Mixer Slag ^γ Processing ⁽³⁾	0	0	0				0		0	n/a
Hot Oil Heater Fuel ^δ Combustion (worst case)	0.27	0.44	0.44				1.58		0.044	0.034 (hexane)
Worst Case Emissions	197.06	82.73	91.04	99.00	99.00	24.90	66.58	99,000.00	11.40	9.90 HCl
Fugitive Emissions										
Asphalt Load-Out and On-Site Yard ^ε	0.55	0.55	0.55	0	0	see note ³	1.44	0	0.14	0.04 (formaldehyde)
Material Storage Piles	1.71	0.60	0.60	0	0	0	0	0	0	0
Material Processing and Handling ^ε	3.23	1.53	0.23	0	0	0	0	0	0	0
Material Crushing, Screening, and Conveying ^ε	15.87	5.80	5.80	0	0	0	0	0	0	0
Unpaved and Paved Roads (worst case) ^α	30.55	7.79	0.78	0	0	0	0	0	0	0
Cold Mix Asphalt Production ³	0	0	0	0	0	see note ³	0	0	6.49	2.24 (xylenes)
Gasoline Fuel Transfer and Dispensing	0	0	0	0	0	2.04E ⁻⁰³			5.31E ⁻⁰⁴	1.83E ⁻⁰⁴
Volatile Organic Liquid Storage Vessels ^φ	0	0	0	0	0	negl.	0	0	negl.	negl.
Total Fugitive Emissions	51.94	16.27	7.96	0	0	see note³	1.44	0	6.64	2.24 (xylenes)
Total Limited/Controlled Emissions	249.0	99.0	99.0	99.0	99.0	24.9	68.02	99,000.00	18.04	9.90 HCl
Title V Major Source Thresholds	NA	100	100	100	100	100	100	100,000 CO ₂ e	25	10
PSD Major Source Thresholds	250	250	250	250	250	250	250	100,000 CO ₂ e	NA	NA
Emission Offset/Nonattainment NSR Major Source Thresholds	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
negl = negligible NA = Not applicable HCL = hydrogen chloride ¹ Under the Part 70 Permit program (40 CFR 70), particulate matter with an aerodynamic diameter less than or equal to a nominal ten (10) micrometers (PM10), not particulate matter (PM), is considered as a "regulated air pollutant". ² The source will limit the combined SO2 and NOx emissions from the dryer/mixer burner, slag processing (SO2 emissions only), and hot oil heaters such that the SO2 and NOx emissions do not exceed 99.0 tons per year, each. ³ The source will limit the combined VOC emissions from the dryer/mixer, hot oil heaters, asphalt load-out, silo filling, on-site yard, and cold mix asphalt production such that the VOC emissions do not exceed 24.9 tons per year. ⁴ The 100,000 CO2e threshold represents the Title V and PSD subject to regulation thresholds for GHGs in order to determine whether a source's emissions are a regulated NSR pollutant under Title V and PSD. ⁵ The source will limit the combined CO2e emissions from the dryer/mixer and hot oil heaters such that the CO2e emissions do not exceed 99,000 tons per year. ^α Limited PTE based upon annual production and fuel content limits to comply with 326 IAC 2-2 (PSD) and 326 IAC 2-8 (FESOP). ^β Limited PTE based upon annual production limit and lb/ton emission limits to comply with 326 IAC 2-2 (PSD) and 326 IAC 2-8 (FESOP). ^γ Limited PTE based upon annual SO2 and NOx limits, as indicated above in note ² , to comply with 326 IAC 2-2 (PSD) & 326 IAC 2-8 (FESOP). ^δ PM, PM10, PM2.5, CO, and HAPs emissions unlimited. ^ε Limited PTE based upon annual production limit to comply with 326 IAC 2-2 (PSD) & 326 IAC 2-8 (FESOP). ^φ Fugitive emissions from each of the volatile organic liquid storage tanks were calculated using the EPA Tanks 4.0.9d program and were determined to be negligible.										

FESOP and PSD Minor Status for GHGs

- (a) This revision to an existing Title V minor stationary source will not change the minor status, because the potential to emit GHGs 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).
- (b) This modification to an existing PSD minor stationary source will not change the PSD minor status, because the potential to emit of GHGs from the entire source will continue to be less than the PSD major source threshold levels. Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply.

Pursuant to 326 IAC 2-8-4, and 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:

CO2 equivalent emissions (CO2e) from the dryer/mixer burner and hot oil heaters shall not exceed ninety-nine thousand (99,000) tons per twelve (12) consecutive month period, with compliance determined at the end of each month. *This is a new requirement for this source. This is a Title I change.*

Compliance with this limit, combined with the potential to emit GHGs from all other emission units at this source, shall limit the source-wide total potential to emit GHGs to less than 100,000 tons of CO2e per 12 consecutive month period and shall render 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) and 326 IAC 2-7 (Title V) not applicable.

Federal Rule and State Rule Applicability Determination and Compliance Determination, Monitoring and Testing Requirements
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The existing applicable federal, state and compliance requirements will not change as a result of this reopening. The source shall continue to comply with the applicable requirements and permit conditions as contained in FESOP No: F157-28338-05267 issued on May 6, 2010, except as indicated below under Proposed Changes.

Proposed Changes

For this permit reopening, IDEM, OAQ has made the following changes to the permit:

- (a) IDEM has revised Section C - Overall Source Limit to reflect that in order to remain a FESOP, the potential to emit greenhouse gases shall be limited to less than 100,000 tons per year of CO2 equivalent emissions (CO2e).

This is a new requirement for this source. This is a Title I change.

- (b) IDEM has added applicable requirements (standards, limitations, compliance determination, record keeping and reporting) to limit CO2e emissions to be less than 100,000 tons per year in order to render 326 IAC 2-2 (PSD) and 326 IAC 2-7 (Part 70 Permits) not applicable. All subsequent conditions were renumbered as necessary.

This is a new requirement for this source. This is a Title I change.

The permit has been revised as follows with deleted language as ~~strikeouts~~ and new language **bolded**.

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

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

(a) Pursuant to 326 IAC 2-8:

(2) The potential to emit any regulated pollutant from the entire source, except particulate matter (PM) and volatile organic compounds (VOCs) and **greenhouse gases (GHGs)**, shall be limited to less than one hundred (100) tons per twelve (12) consecutive month period;

(5) **The potential to emit greenhouse gases (GHGs) from the entire source shall be limited to less than one hundred thousand (100,000) tons of CO₂ equivalent emissions (CO₂e) per twelve (12) consecutive month period.**

D.1.5 SO₂, NO_x, **GHGs as CO₂e**, VOC, and HCl Limits [326 IAC 2-8-4] [326 IAC 2-2] [326 IAC 2-3] [326 IAC 2-4.1] [326 IAC 8-1-6]

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

(d) **CO₂ equivalent emissions (CO₂e) from the dryer/mixer burner and hot oil heaters shall not exceed ninety-nine thousand (99,000) tons per twelve (12) consecutive month period, with compliance determined at the end of each month.**

(de)

Compliance with these limits, combined with the potential to emit SO₂, NO_x, **greenhouse gasses (CO₂e)**, VOC, and HAPs from all other emission units at this source, shall limit the source-wide total potential to emit of SO₂ and NO_x to less than one hundred (100) tons per twelve (12) consecutive month period, each, **greenhouse gases to less than 100,000 tons CO₂ equivalent emissions (CO₂e) per 12 consecutive month period**, VOC to less than twenty-five (25) tons per twelve (12) consecutive month period, HCl to less than ten (10) tons per twelve (12) consecutive month period, and any combination of HAPs to less than twenty-five (25) tons per twelve (12) consecutive month period and shall render the requirements of 326 IAC 2-7 (Part 70 Permits), 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), 326 IAC 2-3 (Emission Offset), 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAPs)), and 326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities) not applicable.

D.1.12 Asphalt, Fuel, and Slag Limitations

In order to comply with Condition D.1.5, the Permittee shall limit asphalt production, fuel usage in the dryer/mixer burner and hot oil heaters, and slag usage in the dryer/mixer burner according to the following formulas:

(a) VOC emissions from cold mix asphalt production shall be determined using the following equation:

Where:

V_{cm} = tons of VOC emissions from cold mix asphalt production in previous 12 month consecutive period;

S = tons of VOC solvent used for each binder as defined in D.1.5(ef)(1) through (5) in previous 12 months; and

AF = Adjustment factor for each type of liquid binder as defined in D.1.5(ef)(1) through (5);

n = total number of binders used in the production of cold mix asphalt as defined in D.1.5(ef)(6);

i = each binder used in the production of cold mix asphalt as defined in D.1.5(ef)(6);

C = tons of cold mix asphalt produced using each binder as defined in D.1.5(e)(6) in previous 12 months;
B = Percent of binder used in cold mix asphalt for each binder as defined in D.1.5(e)(6);
D = Percent solvent in each binder as defined in D.1.5(e)(6); and
V = Percent of VOC from the solvent that evaporates when heated to 500°F for each binder as defined in D.1.5(e)(6). This shall be determined by using distillation data provided by the vendor or based on a distillation test performed by the source.

(h) **CO₂ equivalent emissions (CO₂e) shall be determined using the following equations:**

$$\text{CO}_2 = \frac{[\text{G}(\text{X}_G) + \text{O}(\text{X}_O) + \text{F}(\text{X}_F) + \text{P}(\text{X}_P) + \text{B}(\text{X}_B) + \text{U}(\text{X}_U)]}{2,000}$$

$$\text{CH}_4 = \frac{[\text{G}(\text{X}_G) + \text{O}(\text{X}_O) + \text{F}(\text{X}_F) + \text{P}(\text{X}_P) + \text{B}(\text{X}_B) + \text{U}(\text{X}_U)]}{2,000}$$

$$\text{N}_2\text{O} = \frac{[\text{G}(\text{X}_G) + \text{O}(\text{X}_O) + \text{F}(\text{X}_F) + \text{P}(\text{X}_P) + \text{B}(\text{X}_B) + \text{U}(\text{X}_U)]}{2,000}$$

$$\text{CO}_2\text{e} = \sum[(\text{CO}_2 \times \text{CO}_2 \text{ GWP}) + (\text{CH}_4 \times \text{CH}_4 \text{ GWP}) + (\text{N}_2\text{O} \times \text{N}_2\text{O} \text{ GWP})]$$

Where:

CO₂ = tons of CO₂ emissions for previous 12 consecutive month period;
CH₄ = tons of CH₄ emissions for previous 12 consecutive month period;
N₂O = tons of N₂O emissions for previous 12 consecutive month period;
CO₂e = tons of CO₂e equivalent emissions for previous 12 consecutive month period;

G = million cubic feet of natural gas used in dryer/mixer and hot oil heaters in previous 12 months;

O = gallons of No. 2 fuel oil used in dryer/mixer and hot oil heaters in previous 12 months;

F = gallons of No. 4 fuel oil used in dryer/mixer in previous 12 months;

P = gallons of propane used in dryer/mixer in previous 12 months;

B = gallons of butane used in dryer/mixer in previous 12 months;

U = gallons of waste oil used in dryer/mixer in previous 12 months.

CO₂:

X_G (dryer/mixer/heaters) = 120,161.84 pounds per million cubic feet of natural gas;

X_O (dryer/mixer/heaters) = 22,501.41 x 10³ pounds per gallon of No. 2 fuel oil;

X_F (dryer/mixer) = 24,153.46 x 10³ pounds per gallon of No. 4 fuel oil;

X_P (dryer/mixer) = 12,500.00 x 10³ pounds per gallon of propane;

X_B (dryer/mixer) = 14,506.73 x 10³ pounds per gallon of butane;

X_U (dryer/mixer) = 22,024.15 x 10³ pounds per gallon of waste oil;

CH₄:

X_G (dryer/mixer/heaters) = 0.00249 pounds per million cubic feet of natural gas;

X_O (dryer/mixer/heaters) = 0.00091 pounds per gallon of No. 2 fuel oil;

X_F (dryer/mixer) = 0.00097 pounds per gallon of No. 4 fuel oil;

X_P (dryer/mixer) = 0.00060 pounds per gallon of propane;

X_B (dryer/mixer) = 0.00067 pounds per gallon of butane;

X_U (dryer/mixer) = 0.00089 pounds per gallon of waste oil;

N₂O:

X_G (dryer/mixer/heaters) = 0.0022 pounds per million cubic feet of natural gas;

X_O (dryer/mixer/heaters) = 0.00026 pounds per gallon of No. 2 fuel oil;

X_F (dryer/mixer) = 0.00019 pounds per gallon of No. 4 fuel oil;

X_P (dryer/mixer) = 0.0009 pounds per gallon of propane;
 X_B (dryer/mixer) = 0.0009 pounds per gallon of butane;
 X_U (dryer/mixer) = 0.00018 pounds per gallon of waste oil;

Greenhouse Warming Potentials (GWP)

Carbon dioxide (CO₂) = 1

Methane (CH₄) = 21

Nitrous oxide (N₂O) = 310

(hi) Hydrogen Chloride (HCl) emissions shall be determined using the following equation:

Where:

HCl = tons of hydrogen chloride emissions for previous 12 consecutive month period; and
U = gallons of waste oil as defined in Condition D.1.12(hi).

D.1.13 Cold Mix Asphalt Content

In order to comply with Condition D.1.5(e)(6), the Permittee shall demonstrate the percent of VOC from the solvent that evaporates in the binder when heated to 500°F for each binder used in the production of cold mix asphalt as defined in D.1.5(e)(6) as follows:

D.1.18 Record Keeping Requirements

(a) To document the compliance status with Conditions D.1.1(a), D.1.2(a), and D.1.5(d) the Permittee shall keep monthly records of the amount of asphalt processed through the dryer/mixer.

(b) To document the compliance status with Conditions D.1.5 and D.1.6, the Permittee shall maintain records in accordance with (1) through (8) below. Records maintained for (1) through (8) below shall be taken monthly and shall be complete and sufficient to establish compliance with the limits established in Conditions D.1.5 and D.1.6.

(5) Actual fuel usage, sulfur content, heat content, and equivalent sulfur dioxide, and nitrogen oxide, and **CO₂ equivalent (CO₂e)** emission rates for each fuel used at the source since the last compliance determination period;

(c) To document the compliance status with Condition D.1.5(e)(1) through (5), the Permittee shall maintain records in accordance with (1) through (4) below. Records maintained shall be taken monthly and shall be complete and sufficient to establish compliance with the VOC emission limits established in Condition D.1.5(e)(1) through (5).

(d) To document the compliance status with Condition D.1.5(e)(6), the Permittee shall maintain records in accordance with (1) through (6) below. Records maintained shall be taken monthly and shall be complete and sufficient to establish compliance with the VOC emission limits established in Condition D.1.5(e)(6).

FESOP Quarterly Report
 Page 1 of 2

Source Name: Rieth-Riley Construction Co., Inc.
 Initial Source Address: 3425 O'Farrell Road, Lafayette, Indiana 47904
 Mailing Address: PO Box 477, Goshen, IN 46527 0477
 FESOP Permit No.: F157 28338 0526
 Facility: Dryer/mixer burner, hot oil heaters, and blast furnace and steel slag processing
 Parameter: SO₂, and NO_x, and CO_{2e} emissions
 Limit: SO₂ emissions from the dryer/mixer burner, hot oil heater, diesel fuel oil-fired portable crusher, and blast furnace and electric arc furnace steel mill slag processing shall not exceed 99.0 tons per twelve (12) consecutive month period, with compliance determined at the end of each month, **using the equation found in Condition D.1.12(f); and**
NO_x emissions from the dryer/mixer burner, hot oil heaters, and diesel fuel oil-fired portable crusher shall not exceed 99.0 tons per twelve (12) consecutive month period, with compliance determined at the end of each month, **using the equation found in Condition D.1.12(g); and**
CO_{2e} emissions from the dryer/mixer burner, hot oil heaters, and diesel fuel oil-fired portable crusher shall not exceed **99,000** tons per twelve (12) consecutive month period, with compliance determined at the end of each month, **using the equation found in Condition D.1.12(h).**

Sulfur dioxide (SO₂) emissions shall be determined using the following equation:

$$S = \frac{[G(0.6) + O(0.071) + F(0.075) + P(0.00002) + B(0.00002) + U(0.147) + A(0.0014) + L(0.5413) + X(0.74)]}{2000}$$

<p><u>Where:</u> S = tons of sulfur dioxide emissions for previous 12 consecutive month period; G = million cubic feet of natural gas used in dryer/mixer and hot oil heaters in previous 12 months; O = gallons of No. 2 fuel oil used in dryer/mixer and hot oil heaters in previous 12 months; F = gallons of No. 4 fuel oil used in dryer/mixer in previous 12 months; P = gallons of propane used in dryer/mixer in previous 12 months; B = gallons of butane used in dryer/mixer in previous 12 months; U = gallons of waste oil as defined by Condition D.1.12(b); A = tons of steel slag used in dryer/mixer in previous 12 months; L = tons of blast furnace slag as defined by Condition D.1.12(c); and X = tons of blast furnace slag as defined by Condition D.1.12(d).</p>	<p><u>Emission Factors:</u> Natural Gas (dryer/mixer and hot oil heaters) = 0.6 lbs/MMcf of natural gas; No. 2 Fuel Oil (dryer/mixer and hot oil heaters) = 0.071 lbs/gal of No. 2 fuel oil; No. 4 Fuel Oil (dryer/mixer) = 0.075 lbs/gal of No. 4 fuel oil; Propane (dryer/mixer) = 0.00002 lbs/gal of propane; Butane (dryer/mixer) = 0.00002 lbs/gal of butane; Waste Oil (dryer/mixer) = 0.147 lbs/gal of waste oil; Steel Slag = 0.0014 lbs/ton of steel slag processed; and Blast Furnace Slag = 0.5413 lbs/ton of blast furnace slag processed, with a sulfur content ≤ 1.11 percent by weight or 0.74 lbs/ton of blast furnace slag processed, with a sulfur content > 1.11 percent by weight.</p>
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Nitrogen oxide (NO_x) emissions shall be determined using the following equation:

$$N = \frac{[G(100) + O(0.02) + F(0.047) + P(0.015) + B(0.013) + U(0.019)]}{2000}$$

<p><u>Where:</u> N = tons of nitrogen oxide emissions for previous 12 consecutive month period; G = million cubic feet of natural gas used in dryer/mixer and hot oil heaters in previous 12 months; O = gallons of No. 2 fuel oil used in dryer/mixer and hot oil heaters in previous 12 months; F = gallons of No. 4 fuel oil used in dryer/mixer in previous 12 months; P = gallons of propane used in dryer/mixer in previous 12 months; B = gallons of butane used in dryer/mixer in previous 12 months; and U = gallons of waste oil used in dryer/mixer in previous 12 months.</p>	<p><u>Emission Factors</u> Natural Gas (dryer/mixer and hot oil heaters) = 100 lbs/MMcf of natural gas; No. 2 Fuel Oil (dryer/mixer and hot oil heaters) = 0.02 lbs/gal of No. 2 fuel oil; No. 4 Fuel Oil (dryer/mixer) = 0.047 lbs/gal of No. 4 fuel oil; Propane (dryer/mixer) = 0.015 lbs/gal of propane; Butane (dryer/mixer) = 0.013 lbs/gal of butane; and Waste Oil (dryer/mixer) = 0.019 lbs/gal of waste oil.</p>
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FESOP Fuel Usage, Slag Usage, and SO₂ and NO_x and CO_{2e} Emissions Quarterly Reporting Form Page 2 of 2

Quarter: _____ Year: _____

Month	Fuel Types (units)	Column 1	Column 2	Column 1 + Column 2	Total SO ₂ Emissions From All Fuels and Slag Used (tons per 12 month consecutive period)	Total NO _x Emissions From All Fuels Used (tons per 12 month consecutive period)	Total CO _{2e} Emissions From All Fuels Used (tons per 12 month consecutive period)
		Usage This Month	Usage Previous 11 Months	Usage 12 Month Total			
Month 1	Natural gas (mmcf)						

IDEM, OAQ has decided to make additional revisions to the permit, as described, as follows:

- (a) IDEM, OAQ has decided to remove all references to the source mailing address, as follows. IDEM, OAQ will continue to maintain records of the mailing address.

Mailing Address: _____ PO Box 477, Goshen, IN 46527-0477

- (b) IDEM, OAQ has decided to clarify Section B - Certification to be consistent with the rule.
- (c) On October 27, 2010, the Indiana Air Pollution Control Board issued revisions to 326 IAC 2. These revisions resulted in changes to the rule sites listed in the permit. These changes are not changes to the underlining provisions. The change is only to site of these rules in Section B - Operational Flexibility. IDEM, OAQ has clarified the rule sites for the Preventive Maintenance Plan.
- (d) IDEM, OAQ has clarified Condition C.8 - Fugitive Particulate Matter Emissions.
- (e) IDEM, OAQ has clarified Condition C.16 - Continuous Compliance Plan. The requirements only apply when the source is located in Lake County.
- (f) IDEM, OAQ has clarified the Permittee's responsibility with regards to record keeping, in Section C.
- (g) IDEM, OAQ has clarified the interaction of the Quarterly Deviation and Compliance Monitoring Report and the Emergency Provisions contained in Section C.
- (h) OAQ has decided to clarify Condition D.1.16 - Parametric Monitoring.
- (i) OAQ has decided to clarify Condition D.1.18(c), since it does not appear to include record keeping requirements for the emulsion asphalt binders and other asphalt binders listed in Condition D.1.5(f).
- (j) The following corrections have been made to the information contained within TSD Appendices A.1 and A.2;
 - (1) The AP-42 Emission Factors for No. 2, 4, 5, and 6 fuel oils, Chapter 1.3, have been updated from the 09/98 version to the 05/10 version on the following worksheets:

Dryer Fuel Combustion, Dryer Fuel Combustion - CO_{2e}, Hot Oil Heater Fuel Combustion, and Hot Oil Heater Fuel Combustion - CO_{2e}.

- (2) A typographical misspelling of the word “speciation” has been corrected in the methodology section of the Loadout-Yard-HAP worksheets.
- (3) A typographical misspelling of the word “handling” has been corrected in the statement just below “Batch or Continuous Drop Operations (AP-42 Section 13.2.4)” in the Processing-Handling worksheet.
- (4) All references to “greenhouse warming potential” (GWP) have been revised to “global warming potential” (GWP), as included the rule.
- (5) The following statement in the limited Cold Mix Asphalt worksheet has been revised for clarity:

~~Cold Mix Asphalt VOC Usage Limitation~~ **Limited VOC Emissions from the Sum of the Liquid Binders**

- (6) The following statement has been deleted from the cold mix asphalt and gasoline dispensing worksheets:

~~“Available on the Internet at:
<http://www.aehs.com/publications/catalog/contents/tph.htm>”~~

The permit has been revised as follows with deleted language as ~~strikeouts~~ and new language **bolded**. Permit conditions and the Table of Contents have been renumbered as needed to accommodate the above-listed revisions.

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

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

- (ii) the certification ~~is~~ **states that**, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

B.11 Preventive Maintenance Plan [326 IAC 1-6-3][326 IAC 2-8-4(9)][326 IAC 2-8-5(a)(1)]

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

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

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

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

- (b) Emission Trades [326 IAC 2-8-15 ~~(e)~~ **(b)**]

The Permittee may trade emissions increases and decreases at the source, where the applicable SIP provides for such emission trades without requiring a permit revision, subject to the constraints of Section (a) of this condition and those in 326 IAC 2-8-15 ~~(e)~~ **(b)**.

(c) Alternative Operating Scenarios [326 IAC 2-8-15 (d) (c)]

~~G.8 Fugitive Dust Emissions [326 IAC 6.8-10-3]~~

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

- ~~(a) The average instantaneous opacity of fugitive particulate emissions from a paved road shall not exceed ten percent (10%).~~
- ~~(b) The average instantaneous opacity of fugitive particulate emissions from an unpaved road shall not exceed ten percent (10%).~~
- ~~(c) The average instantaneous opacity of fugitive particulate emissions from batch transfer shall not exceed ten percent (10%).~~
- ~~(d) The opacity of fugitive particulate emissions from continuous transfer of material onto and out of storage piles shall not exceed ten percent (10%) on a three (3) minute average.~~
- ~~(e) The opacity of fugitive particulate emissions from storage piles shall not exceed ten percent (10%) on a six (6) minute average.~~
- ~~(f) There shall be a zero (0) percent frequency of visible emission observations of a material during the inplant transportation of material by truck or rail at any time.~~
- ~~(g) The opacity of fugitive particulate emissions from the inplant transportation of material by front-end loaders and skip hoists shall not exceed ten percent (10%).~~
- ~~(h) There shall be a zero (0) percent frequency of visible emission observations from a building enclosing all or part of the material processing equipment, except from a vent in the building.~~
- ~~(i) The PM10 emissions from building vents shall not exceed twenty-two thousandths (0.022) grains per dry standard cubic foot and ten percent (10%) opacity.~~
- ~~(j) The opacity of particulate emissions from dust handling equipment shall not exceed ten percent (10%).~~
- ~~(k) The PM10 emissions from each material processing stack shall not exceed twenty-two thousandths (0.022) grains per dry standard cubic foot and ten percent (10%) opacity.~~
- ~~(l) Fugitive particulate matter from the material processing facilities shall not exceed ten percent (10%) opacity.~~
- ~~(m) Slag and kish handling activities at integrated iron and steel plants shall comply with the following particulate emissions limits:
 - ~~(1) The opacity of fugitive particulate emissions from transfer from pots and trucks into pits shall not exceed twenty percent (20%) on a six (6) minute average.~~
 - ~~(2) The opacity of fugitive particulate emissions from transfer from pits into front end loaders and from transfer from front end loaders into trucks shall comply with the fugitive particulate emission limits in 326 IAC 6.8-10-3(9).~~~~
- ~~(n) Any facility or operation not specified in 326 IAC 6.8-10-3 shall meet a twenty percent (20%), three (3) minute average opacity standard.~~

~~The Permittee shall achieve these limits by controlling fugitive particulate matter emissions according to the attached Fugitive Dust Control Plan.~~

C.8 Fugitive Particulate Matter Emissions [326 IAC 6.8-10-3]

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

- (a) The average instantaneous opacity of fugitive particulate emissions from a paved road shall not exceed ten percent (10%).
- (b) The average instantaneous opacity of fugitive particulate emissions from an unpaved road shall not exceed ten percent (10%).
- (c) The opacity of fugitive particulate emissions from exposed areas shall not exceed ten percent (10%) on a six (6) minute average.
- (d) The opacity of fugitive particulate emissions from continuous transfer of material onto and out of storage piles shall not exceed ten percent (10%) on a three (3) minute average.
- (e) The opacity of fugitive particulate emissions from storage piles shall not exceed ten percent (10%) on a six (6) minute average.
- (f) There shall be a zero (0) percent frequency of visible emission observations of a material during the inplant transportation of material by truck or rail at any time. Material transported by truck or rail that is enclosed and covered shall be considered in compliance with the inplant transportation requirement.
- (g) The opacity of fugitive particulate emissions from the inplant transportation of material by front end loaders and skip hoists shall not exceed ten percent (10%).
- (h) Material processing facilities shall include the following:
 - (1) There shall be a zero (0) percent frequency of visible emission observations from a building enclosing all or part of the material processing equipment, except from a vent in the building.
 - (2) The PM10 emissions from building vents shall not exceed twenty-two thousandths (0.022) grains per dry standard cubic foot and ten percent (10%) opacity.
 - (3) The PM10 stack emissions from a material processing facility shall not exceed twenty-two thousandths (0.022) grains per dry standard cubic foot and ten percent (10%) opacity.
 - (4) The opacity of fugitive particulate emissions from the material processing facilities, except a crusher at which a capture system is not used, shall not exceed ten percent (10%) opacity.
 - (5) The opacity of fugitive particulate emissions from a crusher at which a capture system is not used shall not exceed fifteen percent (15%).
- (i) The opacity of particulate emissions from dust handling equipment shall not exceed ten percent (10%).

- (j) **Material transfer limits shall be as follows:**
- (1) **The average instantaneous opacity of fugitive particulate emissions from batch transfer shall not exceed ten percent (10%).**
 - (2) **Where adequate wetting of the material for fugitive particulate emissions control is prohibitive to further processing or reuse of the material, the opacity shall not exceed ten percent (10%), three (3) minute average.**
- (k) **Any facility or operation not specified in 326 IAC 6.8-10-3 shall meet a twenty percent (20%), three (3) minute average opacity standard.**

The Permittee shall achieve these limits by controlling fugitive particulate matter emissions according to the attached Fugitive Dust Control Plan.

C.16 **Continuous Compliance Plan [326 IAC 6.8-8-1] [326 IAC 6.8-8-8]**

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

C.22 **General Record Keeping Requirements [326 IAC 2-8-4(3)] [326 IAC 2-8-5]**

- (a) ~~Records of all required monitoring data, reports, and support information required by this permit shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. ~~These records shall be physically present or electronically accessible at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.~~~~

- (1) **Support information includes the following:**
 - (A) **All calibration and maintenance records.**
 - (B) **All original strip chart recordings for continuous monitoring instrumentation.**
 - (C) **Copies of all reports required by the FESOP.**
- (2) **Records of required monitoring information include the following:**
 - (A) **The date, place, as defined in this permit, and time of sampling or measurements.**
 - (B) **The dates analyses were performed.**
 - (C) **The company or entity that performed the analyses.**
 - (D) **The analytical techniques or methods used.**
 - (E) **The results of such analyses.**

(F) The operating conditions as existing at the time of sampling or measurement.

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

C.23 General Reporting Requirements [326 IAC 2-8-4(3)(C)] [326 IAC 2-1.1-11]

- (a) The Permittee shall submit the attached Quarterly Deviation and Compliance Monitoring Report or its equivalent. **Proper notice submittal under Section B –Emergency Provisions satisfies the reporting requirements of this paragraph.** Any deviation from permit requirements, the date(s) of each deviation, the cause of the deviation, and the response steps taken must be reported except that a deviation required to be reported pursuant to an applicable requirement that exists independent of this permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report. This report shall be submitted not later than thirty (30) days after the end of the reporting period. The Quarterly Deviation and Compliance Monitoring Report shall include a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1). A deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit.

D.1.16 Parametric Monitoring

The Permittee shall record the pressure drop across the baghouse used in conjunction with the dryer/mixer, at least once per day when the dryer/mixer is in operation. When, for any one reading, the pressure drop across the baghouse is outside the normal range, **the Permittee shall take a reasonable response. The normal range for this unit is a pressure drop between of two (2.0) one (1.0) and eight (8.0) nine (9.0) inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps unless a different upper-bound or lower-bound value for this range is determined during the latest stack test.** Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. A pressure reading that is outside the above-mentioned range is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit.

D.1.18 Record Keeping Requirements

- (c) To document the compliance status with Condition D.1.5(f)(1) through (5), the Permittee shall maintain records in accordance with (1) through (4) below. Records maintained shall be taken monthly and shall be complete and sufficient to establish compliance with the VOC emission limits established in Condition D.1.5(f)(1) through (5).
- (1) Calendar dates covered in the compliance determination period;
 - (2) **Actual Cutback** asphalt binder usage in the production of cold mix asphalt since the last compliance determination period;
 - (3) **Actual** VOC solvent content by weight of the ~~cutback~~ asphalt binder used in the production of cold mix asphalt since the last compliance determination period; and
 - (4) **Actual A** amount of VOC solvent used in the production of cold mix asphalt, and the amount of VOC emitted since the last compliance determination period.

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

Source Name: Rieth-Riley Construction Co., Inc.
Initial Source Address: 3425 O'Farrell Road, Lafayette, Indiana 47904
Mailing Address: PO Box 477, Goshen, IN 46527-0477
FESOP Permit No.: F157-28338-05267

Months: _____ to _____ Year: _____

Page 1 of 2

This report shall be submitted quarterly based on a calendar year. **Proper notice submittal under Section B – Emergency Provisions satisfies the reporting requirements of paragraph (a) of Section C-General Reporting.** Any deviation from the requirements of this permit, the date(s) of each deviation, the probable cause of the deviation, and the response steps taken must be reported. A deviation required to be reported pursuant to an applicable requirement that exists independent of the permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report. Additional pages may be attached if necessary. If no deviations occurred, please specify in the box marked "No deviations occurred this reporting period".

No other changes have been made to the permit as a result of this revision.

Conclusion and Recommendation

Unless otherwise stated, information used in this review was derived from the greenhouse gas reopening request and additional information submitted by the applicant. A greenhouse gas reopening request for the purposes of this review was received on February 17, 2012.

The operation of this proposed revision shall be subject to the conditions of the attached proposed FESOP Significant Permit Revision Greenhouse Gas Reopening No. F157-31522-05267. The staff recommends to the Commissioner that this FESOP Significant Permit Revision Greenhouse Gas Reopening be approved.

IDEM Contact

- (a) Questions regarding this proposed permit can be directed to Ms. Hannah Desrosiers at the Indiana Department Environmental Management, Office of Air Quality, Permits Branch, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana 46204-2251 or by telephone at (317) 234-5374 or toll free at 1-800-451-6027 extension 4-5374.
- (b) A copy of the findings is available on the Internet at: <http://www.in.gov/ai/appfiles/idem-caats/>
- (c) For additional information about air permits and how the public and interested parties can participate, refer to the IDEM's Guide for Citizen Participation and Permit Guide on the Internet at: www.idem.in.gov

**Appendix A.1: Unlimited Emissions Calculations
Entire Source - Drum Mix**

Company Name: Rieth-Riley Construction Co., Inc.
Current Source Location: 3425 O'Farrell Road, Lafayette, IN 47904
Permit Number: 157-28338-05267
Revision Number: 157-31522-05267
Reviewer: Hannah L. Desrosiers
Date Received: 2/17/2012

Asphalt Plant Maximum Capacity - Drum Mix

Maximum Hourly Asphalt Production =	450	ton/hr									
Maximum Annual Asphalt Production =	3,942,000	ton/yr									
Maximum Annual Blast Furnace Slag Usage =	1,655,640	ton/yr	1.50	% sulfur							
Maximum Annual Steel Slag Usage =	1,655,640	ton/yr	0.66	% sulfur							
Maximum Dryer Fuel Input Rate =	150.0	MMBtu/hr									
Natural Gas Usage =	1,314	MMCF/yr									
No. 2 Fuel Oil Usage =	9,385,714	gal/yr, and	0.50	% sulfur							
No. 4 Fuel Oil Usage =	9,385,714	gal/yr, and	0.50	% sulfur							
Residual (No. 5 or No. 6) Fuel Oil Usage =	0	gal/yr, and	0	% sulfur							
Propane Usage =	14,519,337	gal/yr, and	0.20	gr/100 ft3 sulfur							
Butane Usage =	13,490,760	gal/yr, and	0.22	gr/100 ft3 sulfur							
Used/Waste Oil Usage =	9,385,714	gal/yr, and	1.00	% sulfur	1.02	% ash	0.400	% chlorine,	0.010	% lead	
Diesel Fuel Usage - Generator < 600 HP =	0	gal/yr, and									
Diesel Fuel Usage - Generator > 600 HP =	0	gal/yr	0	% sulfur							
Unlimited PM Dryer/Mixer Emission Factor =	28.0	lb/ton of asphalt production									
Unlimited PM10 Dryer/Mixer Emission Factor =	6.5	lb/ton of asphalt production									
Unlimited PM2.5 Dryer/Mixer Emission Factor =	1.5	lb/ton of asphalt production									
Unlimited VOC Dryer/Mixer Emission Factor =	0.032	lb/ton of asphalt production									
Unlimited CO Dryer/Mixer Emission Factor =	0.13	lb/ton of asphalt production									
Unlimited Blast Furnace Slag SO2 Dryer/Mixer Emission Factor =	0.74	lb/ton of slag processed									
Unlimited Steel Slag SO2 Dryer/Mixer Emission Factor =	0.0014	lb/ton of slag processed									

Unlimited/Uncontrolled Emissions

Process Description	Unlimited/Uncontrolled Potential to Emit (tons/year)										
	Criteria Pollutants							Greenhouse Gas Pollutants	Hazardous Air Pollutants		
	PM	PM10	PM2.5	SO2	NOx	VOC	CO	CO ₂ e	Total HAPs	Worst Case HAP	
Ducted Emissions											
Dryer Fuel Combustion (worst case)	306.35	244.12	244.12	689.85	220.56	7.42	56.66	113,724.87	129.63	123.89	(hydrogen chloride)
Dryer/Mixer (Process)	55,188.00	12,811.50	2,956.50	114.32	108.41	63.07	256.23	65,539.69	21.01	6.11	(formaldehyde)
Dryer/Mixer Slag Processing (worst case)	0	0	0	612.59	0	0	0	0	0	0	
Hot Oil Heater Fuel Combustion (worst case)	0.27	0.44	0.44	9.55	2.69	0.10	1.58	3,040.50	0.044	0.034	(hexane)
Diesel-Fired Generator < 600 HP	0	0	0	0	0	0	0	0	0	0	
Diesel-Fired Generator > 600 HP	0	0	0	0	0	0	0	0	0	0	
Worst Case Emissions*	55,188.27	12,811.94	2,956.94	1,311.99	223.25	63.18	257.81	116,765.38	129.67	123.89	(hydrogen chloride)
Fugitive Emissions											
Asphalt Load-Out, Silo Filling, On-Site Yard	2.18	2.18	2.18	0	0	33.76	5.68	0	0.56	0.17	(formaldehyde)
Material Storage Piles	1.71	0.60	0.60	0	0	0	0	0	0	0	
Material Processing and Handling	12.73	6.02	0.91	0	0	0	0	0	0	0	
Material Crushing, Screening, and Conveying	62.54	22.84	22.84	0	0	0	0	0	0	0	
Unpaved and Paved Roads (worst case)	120.55	30.72	3.07	0	0	0	0	0	0	0	
Cold Mix Asphalt Production	0	0	0	0	0	47,372.99	0	0	12,356.63	4,263.57	(xylenes)
Gasoline Fuel Transfer and Dispensing	0	0	0	0	0	2.04E-03	0	0	5.31E-04	1.83E-04	(xylenes)
Volatile Organic Liquid Storage Vessels	0	0	0	0	0	negl	0	0	negl	0	
Total Fugitive Emissions	199.72	62.37	29.61	0	0	47,406.75	5.68	0	12,357.19	4,263.57	(xylenes)
Totals Unlimited/Uncontrolled PTE	55,387.99	12,874.32	2,986.56	1,311.99	223.25	47,469.93	263.49	116,765.38	12,486.87	4,263.57	(xylenes)

negl = negligible

Worst Case Fuel Combustion is based on the fuel with the highest emissions for each specific pollutant.

*Worst Case Emissions (tons/yr) = Worst Case Emissions from Dryer Fuel Combustion and Dryer/Mixer + Worst Case Emissions From Dryer/Mixer Slag Processing + Worst Case Emissions from Hot Oil Heater Fuel Combustion + Diesel-Fired Generator < 600 HP + Diesel-Fired Generator > 600 HP

Fuel component percentages provided by the source.

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

Company Name: Rieth-Riley Construction Co., Inc.
Current Source Location: 3425 O'Farrell Road, Lafayette, IN 47904
Permit Number: 157-28338-05267
Revision Number: 157-31522-05267
Reviewer: Hannah L. Desrosiers
Date Received: 2/17/2012

The following calculations determine the unlimited/uncontrolled emissions created from the combustion of natural gas, fuel oil, propane, butane, or used/waste oil in the dryer/mixer at the source.

Maximum Capacity

Maximum Hourly Asphalt Production =	450	ton/hr
Maximum Annual Asphalt Production =	3,942,000	ton/yr
Maximum Fuel Input Rate =	150	MMBtu/hr
Natural Gas Usage =	1,314	MMCF/yr
No. 2 Fuel Oil Usage =	9,385,714	gal/yr, and
No. 4 Fuel Oil Usage =	9,385,714	gal/yr, and
Residual (No. 5 or No. 6) Fuel Oil Usage =	0	gal/yr, and
Propane Usage =	14,519,337	gal/yr, and
Butane Usage =	13,490,760	gal/yr, and
Used/Waste Oil Usage =	9,385,714	gal/yr, and
	0.50	% sulfur
	0.50	% sulfur
	0	% sulfur
	0.20	gr/100 ft3 sulfur
	0.22	gr/100 ft3 sulfur
	1.00	% sulfur
	1.02	% ash
	0.400	% chlorine
	0.010	% lead

Unlimited/Uncontrolled Emission:

Criteria Pollutant	Emission Factor (units)										Unlimited/Uncontrolled Potential to Emit (tons/yr)					Worse Case Fuel (tons/yr)
	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	No. 4 Fuel Oil* (lb/kgal)	Residual (No. 5 or No. 6) Fuel Oil (lb/kgal)	Propane (lb/kgal)	Butane (lb/kgal)	Used/Waste Oil (lb/kgal)	Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)	No. 4 Fuel Oil (tons/yr)	Residual (No. 5 or No. 6) Fuel Oil (tons/yr)	Propane (tons/yr)	Butane (tons/yr)	Used/Waste Oil (tons/yr)		
PM	1.9	2.0	7.0	3.22	0.5	0.6	65.3	1.25	9.39	32.85	0	3.630	4.047	306.35	306.35	
PM10/PM2.5	7.6	3.3	8.3	4.72	0.5	0.6	52.02	4.99	15.49	38.95	0	3.630	4.047	244.12	244.12	
SO2	0.6	71.0	75.0	0	0.020	0.020	147.0	0.39	333.19	351.96	0	0.145	0.134	689.85	689.85	
NOx	190	24.0	47.0	47.0	13.0	15.0	124.83	112.63	220.56	0	94.38	101.18	89.16	742	220.56	
VOC	5.5	0.20	0.20	0.28	1.00	1.10	1.0	3.61	0.94	0.94	0	7.28	7.42	4.89	7.42	
CO	84	5.0	5.0	5.0	7.5	8.4	5.0	55.188	23.46	23.46	0	54.45	56.66	23.46	56.66	
Hazardous Air Pollutant																
HCl							26.4							123.89	123.89	
Antimony			5.25E-03	5.25E-03			negl			2.46E-02	0			negl	2.5E-02	
Arsenic	2.0E-04	5.6E-04	1.32E-03	1.32E-03			1.1E-01	1.3E-04	2.63E-03	6.19E-03	0			5.16E-01	5.2E-01	
Beryllium	1.2E-05	4.2E-04	2.78E-05	2.78E-05			negl	7.9E-06	1.97E-03	1.30E-04	0			negl	2.0E-03	
Cadmium	1.1E-03	4.2E-04	3.98E-04	3.98E-04			9.3E-03	7.2E-04	1.97E-03	1.87E-03	0			4.36E-02	4.4E-02	
Chromium	1.4E-03	4.2E-04	8.45E-04	8.45E-04			2.0E-02	9.2E-04	1.97E-03	3.97E-03	0			9.39E-02	9.4E-02	
Cobalt	8.4E-05	6.02E-03	6.02E-03	6.02E-03			2.1E-04	5.5E-05	2.83E-02	2.83E-02	0			9.86E-04	2.8E-02	
Lead	5.0E-04	1.3E-03	1.51E-03	1.51E-03			0.55	3.3E-04	5.91E-03	7.09E-03	0			2.6E+00	2.88	
Manganese	3.8E-04	8.4E-04	3.00E-03	3.00E-03			6.8E-02	2.5E-04	3.94E-03	1.41E-02	0			3.19E-01	0.32	
Mercury	2.6E-04	4.2E-04	1.13E-04	1.13E-04			1.7E-04	1.97E-03	5.30E-04	5.30E-04	0			5.16E-02	2.0E-03	
Nickel	2.1E-03	4.2E-04	8.45E-02	8.45E-02			1.1E-02	1.4E-03	1.97E-03	3.97E-01	0			5.16E-02	0.397	
Selenium	2.4E-05	2.1E-03	6.83E-04	6.83E-04			negl	1.6E-05	9.86E-03	3.21E-03	0			negl	9.9E-03	
1,1,1-Trichloroethane			2.36E-04	2.36E-04						1.11E-03	0				1.1E-03	
1,3-Butadiene															0	
Acetaldehyde															0	
Acrolein															0	
Benzene	2.1E-03		2.14E-04	2.14E-04				1.4E-03		1.00E-03	0			1.03E-02	1.4E-03	
Bis(2-ethylhexyl)phthalate							2.2E-03							3.75E-06	1.0E-02	
Dichlorobenzene	1.2E-03						8.0E-07	7.9E-04							7.9E-04	
Ethylbenzene			6.36E-05	6.36E-05						2.98E-04	0				3.0E-04	
Formaldehyde	7.5E-02	6.10E-02	3.30E-02	3.30E-02				4.9E-02	2.86E-01	1.55E-01	0				0.286	
Hexane	1.8E+00							1.18							1.183	
Phenol							2.4E-03							1.13E-02	1.1E-02	
Toluene	3.4E-03		6.20E-03	6.20E-03				2.2E-03		2.91E-02	0				2.9E-02	
Total PAH Haps	negl		1.13E-03	1.13E-03			3.9E-02			5.30E-03	0			1.83E-01	1.8E-01	
Polycyclic Organic Matter		3.30E-03							1.55E-02						1.5E-02	
Xylene			1.09E-04	1.09E-04						5.12E-04	0				5.1E-04	
							Total HAPs	1.24	0.33	0.68	0	0	0	127.70	129.63	
							Worst Single HAP	123.89								

Methodology

Natural Gas Usage (MMCF/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 MMCF/1,000 MMBtu]
 Oil Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.140 MMBtu]
 Propane Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.0905 MMBtu]
 Butane Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.0974 MMBtu]
 Natural Gas: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Natural Gas Usage (MMCF/yr)] * [Emission Factor (lb/MMCF)] * [ton/2000 lbs]
 All Other Fuels: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Fuel Usage (gals/yr)] * [Emission Factor (lb/kgal)] * [kgal/1000 gal] * [ton/2000 lbs]
 Sources of AP-42 Emission Factors for fuel combustion:
 Natural Gas: AP-42 Chapter 1.4 (dated 7/98), Tables 1.4-1, 1.4-2, 1.4-3, and 1.4-4
 No. 2, No. 4, and No. 6 Fuel Oil: AP-42 Chapter 1.3 (dated 5/10), Tables 1.3-1, 1.3-2, 1.3-3, 1.3-8, 1.3-9, 1.3-10, and 1.3-11
 Propane and Butane: AP-42 Chapter 1.5 (dated 7/08), Tables 1.5-1 (assuming PM = PM10)
 Waste Oil: AP-42 Chapter 1.11 (dated 10/96), Tables 1.11-1, 1.11-2, 1.11-3, 1.11-4, and 1.11-5

Abbreviations

PM = Particulate Matter
 PM10 = Particulate Matter (<10 um)
 PM2.5 = Particulate Matter (< 2.5 um)
 SO2 = Sulfur Dioxide
 NOx = Nitrous Oxides
 VOC = Volatile Organic Compounds
 CO = Carbon Monoxide
 HAP = Hazardous Air Pollutant

HCl = Hydrogen Chloride
 PAH = Polyaromatic Hydrocarbon

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

**Appendix A.1: Unlimited Emissions Calculation:
Greenhouse Gas (CO₂e) Emissions from the
Dryer/Mixer Fuel Combustion with Maximum Capacity: 100 MMBtu/hr**

Company Name: Rieth-Riley Construction Co., Inc.
Current Source Location: 3425 O Farrell Road, Lafayette, IN 47904
Permit Number: 157-28338-05267
Revision Number: 157-31522-05267
Reviewer: Hannah L. Desrosiers
Date Received: 2/17/2012

The following calculations determine the unlimited/uncontrolled emissions created from the combustion of natural gas, fuel oil, propane, butane, or used/waste oil in the dryer/mixer at the source.

Maximum Capacity

Maximum Hourly Asphalt Production	=	450	ton/hr						
Maximum Annual Asphalt Production	=	3,942,000	ton/yr						
Maximum Fuel Input Rate	=	150	MMBtu/hr						
Natural Gas Usage	=	1,314	MMCF/yr						
No. 2 Fuel Oil Usage	=	9,385,714	gal/yr, and		0.50	% sulfur			
No. 4 Fuel Oil Usage	=	9,385,714	gal/yr, and		0.50	% sulfur			
Residual (No. 5 or No. 6) Fuel Oil Usage	=	0	gal/yr, and		0	% sulfur			
Propane Usage	=	14,519,337	gal/yr, and		0.20	gr/100 ft3 sulfur			
Butane Usage	=	13,490,760	gal/yr, and		0.22	gr/100 ft3 sulfur			
Used/Waste Oil Usage	=	9,385,714	gal/yr, and		1.00	% sulfur	1.02	% ash	0.400 % chlorine, 0.010 % lead

Unlimited/Uncontrolled Emissions

CO ₂ e Fraction	Emission Factor (units)							Global Warming Potentials (GWP)		
	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	No. 4 Fuel Oil (lb/kgal)	Residual (No. 5 or No. 6) Fuel Oil (lb/kgal)	Propane (lb/kgal)	Butane (lb/kgal)	Used/Waste Oil (lb/kgal)	Name	Chemical Formula	Global warming potential
CO ₂	120,161.84	22,501.41	24,153.46	24,835.04	12,500.00	14,506.73	22,024.15	Carbon dioxide	CO ₂	1
CH ₄	2.49	0.91	0.97	1.00	0.60	0.67	0.89	Methane	CH ₄	21
N ₂ O	2.2	0.26	0.19	0.53	0.9	0.9	0.18	Nitrous oxide	N ₂ O	310

CO ₂ e Fraction	Unlimited/Uncontrolled Potential to Emit (tons/yr)						
	Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)	No. 4 Fuel Oil (tons/yr)	Residual (No. 5 or No. 6) Fuel Oil (tons/yr)	Propane (tons/yr)	Butane (tons/yr)	Used/ Waste Oil (tons/yr)
CO ₂	78,946.33	105,595.90	113,348.76	0	90745.86	97853.41	103,356.21
CH ₄	1.64	4.28	4.53	0	4.37	4.51	4.19
N ₂ O	1.45	1.22	0.91	0	6.53	6.07	0.84
Total	78,949.41	105,601.41	113,354.19	0	90,756.76	97,863.98	103,361.24

CO₂e for Worst Case Fuel* (tons/yr)
113,724.87

CO ₂ e Equivalent Emissions (tons/yr)	79,428.81	106,064.11	113,724.87	0	92,863.06	99,829.99	103,706.06
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Methodology

Fuel Usage from TSD Appendix A.1, page 1 of 14.
Natural Gas Usage (MMCF/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 MMCF/1,000 MMBtu]
Fuel Oil Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.140 MMBtu]
Propane Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.0915 MMBtu]
Butane Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.102 MMBtu]
Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.

Abbreviations

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

Sources of Emission Factors for fuel combustion: (Note: To form a conservative estimate, the "worst case" emission factors have been used.)

Natural Gas: Emission Factors for CO₂ and CH₄ from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/MMCF. Emission Factor for N₂O from AP-42 Chapter 1.4 (dated 7/98), Table 1.4-2

No. 2, No. 4, and Residual (No. 5 or No. 6) Emission Factors for CO₂ and CH₄ from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/kgal. Emission Factor for N₂O from AP-42 Chapter 1.3 (dated Fuel Oil: 5/10), Table 1.3-8

Propane: Emission Factor for CH₄ from 40 CFR Part 98 Subpart C, Tables C-1 and 2, has been converted from kg/mmBtu to lb/kgal. Emission Factors for CO₂ and N₂O from AP-42 Chapter 1.5 (dated 7/08), Table 1.5-1

Butane: Emission Factors for CO₂ and CH₄ from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/kgal. Emission Factor for N₂O from AP-42 Chapter 1.5 (dated 7/08), Table 1.5-1

Waste Oil: Emission Factors for CO₂, CH₄, and N₂O from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/kgal.

Emission Factor (EF) Conversions:

Natural Gas: EF (lb/MMCF) = [EF (kg/MMBtu) * Conversion Factor (2.20462 lbs/kg) * Heating Value of Natural Gas (MMBtu/scf) * Conversion Factor (1,000,000 scf/MMCF)]

Fuel Oils: EF (lb/kgal) = [EF (kg/MMBtu) * Conversion Factor (2.20462 lbs/kg) * Heating Value of the Fuel Oil (MMBtu/gal) * Conversion Factor (1000 gal/kgal)]

Natural Gas: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Natural Gas Usage (MMCF/yr)] * [Emission Factor (lb/MMCF)] * [ton/2000 lbs]

All Other Fuels: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Fuel Usage (gals/yr)] * [Emission Factor (lb/kgal)] * [kgal/1000 gal] * [ton/2000 lbs]

Unlimited Potential to Emit CO₂e (tons/yr) = Unlimited Potential to Emit CO₂ of "worst case" fuel (ton/yr) x CO₂ GWP (1) + Unlimited Potential to Emit CH₄ of "worst case" fuel (ton/yr) x CH₄ GWP (21) + Unlimited Potential to Emit N₂O of "worst case" fuel (ton/yr) x N₂O GWP (310).

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

Company Name: Rieth-Riley Construction Co., Inc.
Current Source Location: 3425 O'Farrell Road, Lafayette, IN 47904
Permit Number: 157-28338-05267
Revision Number: 157-31522-05267
Reviewer: Hannah L. Desrosiers
Date Received: 2/17/2012

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

Maximum Hourly Asphalt Production = 450 ton/hr
 Maximum Annual Asphalt Production = 3,942,000 ton/yr

Criteria Pollutant	Uncontrolled Emission Factors (lb/ton)			Unlimited/Uncontrolled Potential to Emit (tons/yr)			Worse Case PTE
	Drum-Mix Plant (dryer/mixer)			Drum-Mix Plant (dryer/mixer)			
	Natural Gas	No. 2 Fuel Oil	Waste Oil	Natural Gas	No. 2 Fuel Oil	Waste Oil	
PM*	28	28	28	55,188.00	55,188.00	55,188.00	55,188.00
PM10*	6.5	6.5	6.5	12,811.50	12,811.50	12,811.50	12,811.50
PM2.5*	1.5	1.5	1.5	2,956.50	2,956.50	2,956.50	2,956.50
SO2**	0.0034	0.011	0.058	6.70	21.68	114.32	114.32
NOx**	0.026	0.055	0.055	51.25	108.41	108.41	108.41
VOC**	0.032	0.032	0.032	63.07	63.07	63.07	63.07
CO***	0.13	0.13	0.13	256.23	256.23	256.23	256.23
Hazardous Air Pollutant							
HCl			2.10E-04			4.14E-01	0.41
Antimony	1.80E-07	1.80E-07	1.80E-07	3.55E-04	3.55E-04	3.55E-04	3.55E-04
Arsenic	5.60E-07	5.60E-07	5.60E-07	1.10E-03	1.10E-03	1.10E-03	1.10E-03
Beryllium	negl	negl	negl	negl	negl	negl	0.00E+00
Cadmium	4.10E-07	4.10E-07	4.10E-07	8.08E-04	8.08E-04	8.08E-04	8.08E-04
Chromium	5.50E-06	5.50E-06	5.50E-06	1.08E-02	1.08E-02	1.08E-02	1.08E-02
Cobalt	2.60E-08	2.60E-08	2.60E-08	5.12E-05	5.12E-05	5.12E-05	5.12E-05
Lead	6.20E-07	1.50E-05	1.50E-05	1.22E-03	2.96E-02	2.96E-02	2.96E-02
Manganese	7.70E-06	7.70E-06	7.70E-06	1.52E-02	1.52E-02	1.52E-02	1.52E-02
Mercury	2.40E-07	2.60E-06	2.60E-06	4.73E-04	5.12E-03	5.12E-03	5.12E-03
Nickel	6.30E-05	6.30E-05	6.30E-05	0.12	0.12	0.12	0.12
Selenium	3.50E-07	3.50E-07	3.50E-07	6.90E-04	6.90E-04	6.90E-04	6.90E-04
2,2,4 Trimethylpentane	4.00E-05	4.00E-05	4.00E-05	0.08	0.08	0.08	0.08
Acetaldehyde			1.30E-03			2.56	2.56
Acrolein			2.60E-05			5.12E-02	5.12E-02
Benzene	3.90E-04	3.90E-04	3.90E-04	0.77	0.77	0.77	0.77
Ethylbenzene	2.40E-04	2.40E-04	2.40E-04	0.47	0.47	0.47	0.47
Formaldehyde	3.10E-03	3.10E-03	3.10E-03	6.11	6.11	6.11	6.11
Hexane	9.20E-04	9.20E-04	9.20E-04	1.81	1.81	1.81	1.81
Methyl chloroform	4.80E-05	4.80E-05	4.80E-05	0.09	0.09	0.09	0.09
MEK			2.00E-05			0.04	0.04
Propionaldehyde			1.30E-04			0.26	0.26
Quinone			1.60E-04			0.32	0.32
Toluene	1.50E-04	2.90E-03	2.90E-03	0.30	5.72	5.72	5.72
Total PAH Haps	1.90E-04	8.80E-04	8.80E-04	0.37	1.73	1.73	1.73
Xylene	2.00E-04	2.00E-04	2.00E-04	0.39	0.39	0.39	0.39
Total HAPs							21.01
Worst Single HAP							6.11 (formaldehyde)

Methodology

Unlimited/Uncontrolled Potential to Emit (tons/yr) = (Maximum Annual Asphalt Production (tons/yr)) * (Emission Factor (lb/ton)) * (ton/2000 lbs)
 Emission Factors from AP-42 Chapter 11.1 (dated 3/04), Tables 11.1-3, 11.1-7, 11.1-8, 11.1-10, and 11.1-12
 Natural gas, No. 2 fuel oil, and waste oil represent the worst possible emissions scenario. AP-42 did not provide emission factors for any other fuels.

* PM, PM10, and PM2.5 AP-42 emission factors based on drum mix dryer fired with natural gas, propane, fuel oil, and waste oil. According to AP-42 fuel type does not significantly effect PM, PM10, and PM2.5 emissions.

** SO2, NOx, and VOC AP-42 emission factors are for natural gas, No. 2 fuel oil, and waste oil only.

*** CO AP-42 emission factor determined by combining data from drum mix dryer fired with natural gas, No. 6 fuel oil, and No. 2 fuel oil to develop single CO emission factor.

Abbreviations

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

**Appendix A.1: Unlimited Emissions Calculations
Greenhouse Gas (CO₂e) Emissions from the
Drum-Mix Plant (Dryer/Mixer) Process Emissions**

Company Name: Rieth-Riley Construction Co., Inc.
Current Source Location: 3425 O'Farrell Road, Lafayette, IN 47904
Permit Number: 157-28338-05267
Revision Number: 157-31522-05267
Reviewer: Hannah L. Desrosiers
Date Received: 2/17/2012

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

Maximum Hourly Asphalt Production = 450 ton/hr
 Maximum Annual Asphalt Production = 3,942,000 ton/yr

Criteria Pollutant	Emission Factor (lb/ton) Drum-Mix Plant (dryer/mixer)			Global Warming Potentials (GWP)	Unlimited/Uncontrolled Potential to Emit (tons/yr) Drum-Mix Plant (dryer/mixer)			CO ₂ e for Worst Case Fuel (tons/yr)
	Natural Gas	No. 2 Fuel Oil	Waste Oil		Natural Gas	No. 2 Fuel Oil	Waste Oil	
CO ₂	33	33	33	1	65,043.00	65,043.00	65,043.00	65,539.69
CH ₄	0.0120	0.0120	0.0120	21	23.65	23.65	23.65	
N ₂ O				310	0	0	0	
Total					65,066.65	65,066.65	65,066.65	
CO₂e Equivalent Emissions (tons/yr)					65,539.69	65,539.69	65,539.69	

Methodology

Natural gas, No. 2 fuel oil, and waste oil represent the worst possible emissions scenario. AP-42 did not provide emission factors for any other fuels. Emission Factors from AP-42 Chapter 11.1 (dated 3/04), Tables 11.1-7 and 11.1-8

There are no emission factors for N₂O available in either the 40 CFR 98, Subpart C or AP-42 Chapter 11.1. Therefore, it is assumed that there are no N₂O emission anticipated from this process.

Unlimited/Uncontrolled Potential to Emit (tons/yr) = (Maximum Annual Asphalt Production (tons/yr)) * (Emission Factor (lb/ton)) * (ton/2000 lbs)

Unlimited Potential to Emit CO₂e (tons/yr) = Unlimited Potential to Emit CO₂ of "worst case" fuel (ton/yr) x CO₂ GWP (1) + Unlimited Potential to Emit CH₄ of "worst case" fuel (ton/yr) x CH₄ GWP (21) + Unlimited Potential to Emit N₂O of "worst case" fuel (ton/yr) x N₂O GWP (310).

Abbreviations

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

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

Company Name: Rieth-Riley Construction Co., Inc.
Current Source Location: 3425 O'Farrell Road, Lafayette, IN 47904
Permit Number: 157-28338-05267
Revision Number: 157-31522-05267
Reviewer: Hannah L. Desrosiers
Date Received: 2/17/2012

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

Maximum Annual Blast Furnace Slag Usage* = ton/yr % sulfur
 Maximum Annual Steel Slag Usage* = ton/yr % sulfur

Type of Slag	SO2 Emission Factor (lb/ton)**	Unlimited Potential to Emit SO2 (tons/yr)
Blast Furnace Slag	0.74	612.59
Steel Slag	0.0014	1.16

Methodology

* The maximum annual slag usage was provided by the source.

** Testing results for blast furnace slag, obtained January 9, 2009 from similar operations at Rieth-Riley Construction Co., Inc. facility located in Valparaiso, IN (permit #127-27075-05241), produced an Emission Factor of 0.54 lb/ton from blast furnace slag containing 1.10% sulfur content. The source has requested a safety factor of 0.20 lb/ton be added to the tested value for use at this location to allow for a sulfur content up to 1.5%.

** Testing results for steel slag, obtained June 2009 from E & B Paving, Inc. facility located in Huntington, IN. The testing results showed a steel slag emission factor of 0.0007 lb/ton from slag containing 0.33% sulfur content.

Unlimited Potential to Emit SO2 from Slag (tons/yr) = [(Maximum Annual Slag Usage (ton/yr)) * [Emission Factor (lb/ton)] * [ton/2000 lbs]

Abbreviations

SO2 = Sulfur Dioxide

Appendix A.1: Unlimited Emissions Calculations

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

Company Name: Rieth-Riley Construction Co., Inc.
Current Source Location: 3425 O'Farrell Road, Lafayette, IN 47904
Permit Number: 157-28338-05267
Revision Number: 157-31522-05267
Reviewer: Hannah L. Desrosiers
Date Received: 2/17/2012

Maximum Hot Oil Heater Fuel Input Rate = 4.30 MMBtu/hr (2 units at 2.15 MMBtu/hr, each)
 Natural Gas Usage = 38 MMCF/yr
 No. 2 Fuel Oil Usage = 269,057 gal/yr, and 0.50 % sulfur

Unlimited/Uncontrolled Emissions

Criteria Pollutant	Emission Factor (units)		Unlimited/Uncontrolled Potential to Emit (tons/yr)		Worse Case Fuel (tons/yr)
	Hot Oil Heater		Hot Oil Heater		
	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)	
PM	1.9	2.0	0.036	0.269	0.27
PM10/PM2.5	7.6	3.3	0.143	0.444	0.44
SO2	0.6	71.0	0.011	9.552	9.55
NOx	100	20.0	1.883	2.691	2.69
VOC	5.5	0.20	0.104	0.027	0.10
CO	84	5.0	1.582	0.673	1.58
Hazardous Air Pollutant					
Arsenic	2.0E-04	5.6E-04	3.8E-06	7.53E-05	7.5E-05
Beryllium	1.2E-05	4.2E-04	2.3E-07	5.65E-05	5.7E-05
Cadmium	1.1E-03	4.2E-04	2.1E-05	5.65E-05	5.7E-05
Chromium	1.4E-03	4.2E-04	2.6E-05	5.65E-05	5.7E-05
Cobalt	8.4E-05		1.6E-06		1.6E-06
Lead	5.0E-04	1.3E-03	9.4E-06	1.70E-04	1.7E-04
Manganese	3.8E-04	8.4E-04	7.2E-06	1.13E-04	1.1E-04
Mercury	2.6E-04	4.2E-04	4.9E-06	5.65E-05	5.7E-05
Nickel	2.1E-03	4.2E-04	4.0E-05	5.65E-05	5.7E-05
Selenium	2.4E-05	2.1E-03	4.5E-07	2.83E-04	2.8E-04
Benzene	2.1E-03		4.0E-05		4.0E-05
Dichlorobenzene	1.2E-03		2.3E-05		2.3E-05
Ethylbenzene					0.0E+00
Formaldehyde	7.5E-02	6.10E-02	1.4E-03	8.21E-03	8.2E-03
Hexane	1.8E+00		0.03		3.4E-02
Phenol					0.0E+00
Toluene	3.4E-03		6.4E-05		6.4E-05
Total PAH Haps	negl		negl		0.0E+00
Polycyclic Organic Matter		3.30E-03		4.44E-04	4.4E-04
Total HAPs =			3.6E-02	9.6E-03	0.044

Methodology

Equivalent Natural Gas Usage (MMCF/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 MMCF/1,000 MMBtu]
 Equivalent Oil Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.140 MMBtu]
 Natural Gas: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Natural Gas Usage (MMCF/yr)] * [Emission Factor (lb/MMCF)] * [ton/2000 lbs]
 All Other Fuels: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Fuel Usage (gals/yr)] * [Emission Factor (lb/kgal)] * [kgal/1000 gal] * [ton/2000 lbs]
 Sources of AP-42 Emission Factors for fuel combustion:

Natural Gas : AP-42 Chapter 1.4 (dated 7/98), Tables 1.4-1, 1.4-2, 1.4-3, and 1.4-4
 No. 2 Fuel Oil: AP-42 Chapter 1.3 (dated 5/10), Tables 1.3-1, 1.3-2, 1.3-3, 1.3-8, 1.3-9, 1.3-10, and 1.3-11

Abbreviations

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

**Appendix A.1: Unlimited Emissions Calculations
Greenhouse Gas (CO₂e) Emissions from
Hot Oil Heater Fuel Combustion with Maximum Capacity < 100 MMBtu/hr**

Company Name: Rieth-Riley Construction Co., Inc.
Current Source Location: 3425 O'Farrell Road, Lafayette, IN 47904
Permit Number: 157-28338-05267
Revision Number: 157-31522-05267
Reviewer: Hannah L. Desrosiers
Date Received: 2/17/2012

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

Unlimited/Uncontrolled Emissions

Criteria Pollutant	Emission Factor (units)		Global Warming Potentials (GWP)	Unlimited/Uncontrolled Potential to Emit (tons/yr)	
	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)		Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)
CO ₂	120,161.84	22,501.41	1	2,263.13	3,027.08
CH ₄	2.49	0.91	21	0.05	0.12
N ₂ O	2.2	0.26	310	0.04	0.03
				2,263.22	3,027.24

Worse Case CO₂e Emissions (tons/yr)
3,040.50

CO ₂ e Equivalent Emissions (tons/yr)	2,276.96	3,040.50
--	----------	----------

Methodology

Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.

Equivalent Natural Gas Usage (MMCF/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 MMCF/1,000 MMBtu]

Equivalent Oil Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.140 MMBtu]

Sources of Emission Factors for fuel combustion: (Note: To form a conservative estimate, the "worst case" emission factors have been used.)

Natural Gas: Emission Factors for CO₂ and CH₄ from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/MMCF. Emission Factor for N₂O from AP-42 Chapter 1.4 (dated 7/98), Table 1.4-2

No. 2 Fuel Oil: Emission Factors for CO₂ and CH₄ from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/kgal. Emission Factor for N₂O from AP-42 Chapter 1.3 (dated 5/10), Table 1.3-8

Emission Factor (EF) Conversions

Natural Gas: EF (lb/MMCF) = [EF (kg/MMBtu) * Conversion Factor (2.20462 lbs/kg) * Heating Value of Natural Gas (MMBtu/scf) * Conversion Factor (1,000,000 scf/MMCF)]

Fuel Oils: EF (lb/kgal) = [EF (kg/MMBtu) * Conversion Factor (2.20462 lbs/kg) * Heating Value of the Fuel Oil (MMBtu/gal) * Conversion Factor (1000 gal/kgal)]

Natural Gas: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Natural Gas Usage (MMCF/yr)] * [Emission Factor (lb/MMCF)] * [ton/2000 lbs]

All Other Fuels: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Fuel Usage (gals/yr)] * [Emission Factor (lb/kgal)] * [kgal/1000 gal] * [ton/2000 lbs]

Unlimited Potential to Emit CO₂e (tons/yr) = Unlimited Potential to Emit CO₂ of "worst case" fuel (ton/yr) x CO₂ GWP (1) + Unlimited Potential to Emit CH₄ of "worst case" fuel (ton/yr) x CH₄ GWP (21) + Unlimited Potential to Emit N₂O of "worst case" fuel (ton/yr) x N₂O GWP (310).

Abbreviations

CO₂ = Carbon Dioxide
 CH₄ = Methane

N₂O = Nitrogen Dioxide
 PTE = Potential to Emit

**Appendix A.1: Unlimited Emissions Calculations
Reciprocating Internal Combustion Engines - Diesel Fuel
Output Rating (<=600 HP)**

Company Name: Rieth-Riley Construction Co., Inc.
Current Source Location: 3425 O'Farrell Road, Lafayette, IN 47904
Permit Number: 157-28338-05267
Revision Number: 157-31522-05267
Reviewer: Hannah L. Desrosiers
Date Received: 2/17/2012

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

	Pollutant						
	PM ²	PM10 ²	direct PM2.5 ²	SO2	NOx	VOC	CO
Emission Factor in lb/hp-hr	0.0022	0.0022	0.0022	0.0021	0.0310	0.0025	0.0067
Emission Factor in lb/kgal ¹	43.07	43.07	43.07	40.13	606.85	49.22	130.77
Potential Emission in tons/yr	0.00	0.00	0.00	0.00	0.00	0.00	0.00

¹ The AP-42 Chapter 3.3-1 emission factors in lb/hp-hr were converted to lb/kgal emission factors using an average brake specific fuel consumption of 7,000 Btu / hp-hr, diesel heating value of 19,300 Btu / lb, and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

¹Emission factor (lb/kgal) = AP-42 EF (lb/hp-hr) * 1/7,000 (hp-hr/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

²PM and PM2.5 emission factors are assumed to be equivalent to PM10 emission factors. No information was given regarding which method was used to determine the factor or the fraction of PM10 which is condensable.

Hazardous Air Pollutants (HAPs)

	Pollutant							Total PAH HAPs ³
	Benzene	Toluene	Xylene	1,3-Butadiene	Formaldehyde	Acetaldehyde	Acrolein	
Emission Factor in lb/MMBtu	9.33E-04	4.09E-04	2.85E-04	3.91E-05	1.18E-03	7.67E-04	9.25E-05	1.68E-04
Emission Factor in lb/kgal ⁴	1.28E-01	5.60E-02	3.91E-02	5.36E-03	1.62E-01	1.05E-01	1.27E-02	2.30E-02
Potential Emission in tons/yr	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

³PAH = Polyaromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)

⁴The AP-42 Chapter 3.3-1 emission factors in lb/MMBtu were converted to lb/kgal emission factors using an average diesel heating value of 19,300 Btu / lb and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

⁴Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) * 1/10⁶ (MMBtu/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

Potential Emission of Total HAPs (tons/yr)	0.00E+00
Potential Emission of Worst Case HAPs (tons/yr)	0.00E+00

Green House Gas Emissions (GHG)

	Pollutant		
	CO2 ⁵	CH4 ⁶	N2O ⁶
Emission Factor in lb/hp-hr	1.15	NA	NA
Emission Factor in kg/MMBtu	NA	0.003	0.0006
Emission Factor in lb/kgal	22,512.07	0.91	0.18
Potential Emission in tons/yr	0.00	0.000	0.000

⁵The AP-42 Chapter 3.3-1 emission factor in lb/hp-hr was converted to lb/kgal emission factor using an average brake specific fuel consumption of 7,000 Btu / hp-hr, diesel heating value of 19,300 Btu / lb, and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

⁵Emission factor (lb/kgal) = AP-42 EF (lb/hp-hr) * 1/7,000 (hp-hr/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

⁶The 40 CFR 98 Subpart C emission factors in kg/MMBtu were converted to lb/kgal emission factors using an average diesel heating value of 19,300 Btu / lb and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

⁶Emission factor (lb/kgal) = 40 CFR 98 EF (kg/MMBtu) * 2.20462 (lb/kg) * 1/10⁶ (MMBtu/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

Summed Potential Emissions in tons/yr	0.00
CO2e Total in tons/yr	0.00

Methodology

Potential Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] * [Maximum Hours Operated per Year]

Maximum Diesel Fuel Usage (gal/yr) = Potential Throughput (hp-hr/yr) * 7000 (Btu/hp-hr) * 1/19300 (lb/Btu) * 1/7.1 (gal/lb)

Emission Factors are from AP42 (Supplement B 10/96), Tables 3.3-1 and 3.3-2 and have been converted to lb/kgal

CH4 and N2O Emission Factor from 40 CFR 98 Subpart C Table C-2 and have been converted to lb/kgal

Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.

Potential Emissions (tons/yr) = [Maximum Diesel Fuel Usage (gal/yr) x Emission Factor (lb/kgal)] / (1,000 ga/kgal) / (2,000 lb/ton)

CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).

Appendix A.1: Unlimited Emissions Calculations
Large Reciprocating Internal Combustion Engines - Diesel Fuel
Output Rating (>600 HP)

Company Name: Rieth-Riley Construction Co., Inc.
Current Source Location: 3425 O'Farrell Road, Lafayette, IN 47904
Permit Number: 157-28338-05267
Revision Number: 157-31522-05267
Reviewer: Hannah L. Desrosiers
Date Received: 2/17/2012

Output Horsepower Rating (hp)	0	Sulfur Content (S) of Fuel (% by weight)	0
Maximum Hours Operated per Year	0		
Potential Throughput (hp-hr/yr)	0		
Maximum Diesel Fuel Usage (gal/yr)	0		

	Pollutant						
	PM	PM10 ²	direct PM2.5 ²	SO2	NOx	VOC	CO
Emission Factor in lb/hp-hr	7.00E-04			0.00E+00 (.00609S)	2.40E-02	7.05E-04	5.50E-03
Emission Factor in lb/MMBtu		0.0573	0.0573				
Emission Factor in lb/kgal ¹	13.70	7.85	7.85	0.00	469.82	13.80	107.67
Potential Emission in tons/yr	0.00	0.00	0.00	0.00	0.00	0.00	0.00

¹ The AP-42 Chapter 3.4-1 emission factors in lb/hp-hr were converted to lb/kgal emission factors using an average brake specific fuel consumption of 7,000 Btu / hp-hr, diesel heating value of 19,300 Btu / lb, and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

¹ Emission factor (lb/kgal) = AP-42 EF (lb/hp-hr) * 1/7,000 (hp-hr/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

² Emission factors in lb/kgal were converted from the AP-42 Chapter 3.4-1 emission factors in lb/MMBtu using an average diesel heating value of 19,300 Btu / lb and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

² Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) * 1/10⁶ (MMBtu/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

Hazardous Air Pollutants (HAPs)

	Pollutant						Total PAH HAPs ³
	Benzene	Toluene	Xylene	Formaldehyde	Acetaldehyde	Acrolein	
Emission Factor in lb/MMBtu	7.76E-04	2.81E-04	1.93E-04	7.89E-05	2.52E-05	7.88E-06	2.12E-04
Emission Factor in lb/kgal ⁴	1.06E-01	3.85E-02	2.64E-02	1.08E-02	3.45E-03	1.08E-03	2.91E-02
Potential Emission in tons/yr	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

³ PAH = Polyaromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)

⁴ Emission factors in lb/kgal were converted from the AP-42 Chapter 3.4-1 emission factors in lb/MMBtu using an average diesel heating value of 19,300 Btu / lb and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

⁴ Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) * 1/10⁶ (MMBtu/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

Potential Emission of Total HAPs (tons/yr)	0.00E+00
Potential Emission of Worst Case HAPs (tons/yr)	0.00E+00

Green House Gas Emissions (GHG)

	Pollutant		
	CO2 ⁵	CH4 ^{5,6}	N2O ⁷
Emission Factor in lb/hp-hr	1.16	6.35E-05	NA
Emission Factor in kg/MMBtu	NA	NA	0.0006
Emission Factor in lb/kgal	22,707.83	1.24	0.18
Potential Emission in tons/yr	0.00	0.00	0.00

⁵ The AP-42 Chapter 3.4-1 emission factors in lb/hp-hr were converted to lb/kgal emission factors using an average brake specific fuel consumption of 7,000 Btu / hp-hr, diesel heating value of 19,300 Btu / lb, and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

⁵ Emission factor (lb/kgal) = AP-42 EF (lb/hp-hr) * 1/7,000 (hp-hr/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

⁶ According to AP-42, Table 3.4-1, TOC (as CH4) is 9% methane by weight. As a result, the lb/hp-hr emission factor for TOC (as CH4) in AP-42 has been multiplied by 9% to determine the portion that is emitted as methane.

⁷ The 40 CFR 98 Subpart C emission factors in kg/MMBtu were converted to lb/kgal emission factors using an average diesel heating value of 19,300 Btu / lb and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

⁷ Emission factor (lb/kgal) = 40 CFR 98 EF (kg/MMBtu) * 2.20462 (lb/kg) * 1/10⁶ (MMBtu/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

Summed Potential Emissions in tons/yr	0.00
CO2e Total in tons/yr	0.00

Methodology

Potential Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] * [Maximum Hours Operated per Year]
Maximum Diesel Fuel Usage (gal/yr) = Potential Throughput (hp-hr/yr) * 7000 (Btu/hp-hr) * 1/19300 (lb/Btu) * 1/7.1 (gal/lb)
Emission Factors are from AP 42 (Supplement B 10/96) Tables 3.4-1, 3.4-2, 3.4-3, and 3.4-4 and have been converted to lb/kgal.
N2O Emission Factor from 40 CFR 98 Subpart C Table C-2 and have been converted to lb/kgal.
Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Potential Emissions (tons/yr) = [Maximum Diesel Fuel Usage (gal/yr) x Emission Factor (lb/kgal)] / (1,000 gal/kgal) / (2,000 lb/ton)
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).

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

Company Name: Rieth-Riley Construction Co., Inc.
Current Source Location: 3425 O'Farrell Road, Lafayette, IN 47904
Permit Number: 157-28338-05267
Revision Number: 157-31522-05267
Reviewer: Hannah L. Desrosiers
Date Received: 2/17/2012

The following calculations determine the unlimited/uncontrolled fugitive emissions from hot asphalt mix load-out, silo filling, and on-site yard for a drum mix hot mix asphalt plant

Asphalt Temperature, T =	325	F
Asphalt Volatility Factor, V =	-0.5	
Maximum Annual Asphalt Production =	3,942,000	tons/yr

Pollutant	Emission Factor (lb/ton asphalt)			Unlimited/Uncontrolled Potential to Emit (tons/yr)			
	Load-Out	Silo Filling	On-Site Yard	Load-Out	Silo Filling	On-Site Yard	Total
Total PM*	5.2E-04	5.9E-04	NA	1.03	1.15	NA	2.18
Organic PM	3.4E-04	2.5E-04	NA	0.67	0.500	NA	1.17
TOC	0.004	0.012	0.001	8.20	24.02	2.168	34.4
CO	0.001	0.001	3.5E-04	2.66	2.326	0.694	5.68

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

PM/HAPs	0.048	0.056	0	0.104
VOC/HAPs	0.121	0.305	0.032	0.459
non-VOC/HAPs	6.3E-04	6.5E-05	1.7E-04	8.6E-04
non-VOC/non-HAPs	0.59	0.34	0.16	1.09

Total VOCs	7.71	24.02	2.0	33.8
Total HAPs	0.17	0.36	0.032	0.56
			Worst Single HAP	0.175
				(formaldehyde)

Methodology

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

Unlimited/Uncontrolled Potential to Emit (tons/yr) = (Maximum Annual Asphalt Production (tons/yr)) * (Emission Factor (lb/ton)) * (ton/2000 lbs)

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

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

Total PM/PM10/PM2.5 Ef = 0.000181 + 0.00141(-V)e^{-(0.0251)(T+460)-20.43}

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

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

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

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

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

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

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

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

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

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

Abbreviations

TOC = Total Organic Compounds

CO = Carbon Monoxide

PM = Particulate Matter

PM10 = Particulate Matter (<10 um)

PM2.5 = Particulate Matter (<2.5 um)

HAP = Hazardous Air Pollutant

VOC = Volatile Organic Compound

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

Company Name: Rieth-Riley Construction Co., Inc.
Current Source Location: 3425 O'Farrell Road, Lafayette, IN 47904
Permit Number: 157-28338-05267
Revision Number: 157-31522-05267
Reviewer: Hannah L. Desrosiers
Date Received: 2/17/2012

Organic Particulate-Based Compounds (Table 11.1-15)

Pollutant	CASRN	Category	HAP Type	Source	Speciation Profile		Unlimited/Uncontrolled Potential to Emit (tons/yr)				
					Load-out and Onsite Yard (% by weight of Total Organic PM)	Silo Filling and Asphalt Storage Tank (% by weight of Total Organic PM)	Load-out	Silo Filling	Onsite Yard	Total	
PAH HAPs											
Acenaphthene	83-32-9	PM/HAP	POM	Organic PM	0.26%	0.47%	1.7E-03	2.4E-03	NA		4.1E-03
Acenaphthylene	208-96-8	PM/HAP	POM	Organic PM	0.028%	0.014%	1.9E-04	7.0E-05	NA		2.6E-04
Anthracene	120-12-7	PM/HAP	POM	Organic PM	0.07%	0.13%	4.7E-04	6.5E-04	NA		1.1E-03
Benzo(a)anthracene	56-55-3	PM/HAP	POM	Organic PM	0.019%	0.056%	1.3E-04	2.8E-04	NA		4.1E-04
Benzo(b)fluoranthene	205-99-2	PM/HAP	POM	Organic PM	0.0076%	0	5.1E-05	0	NA		5.1E-05
Benzo(k)fluoranthene	207-08-9	PM/HAP	POM	Organic PM	0.0022%	0	1.5E-05	0	NA		1.5E-05
Benzo(g,h,i)perylene	191-24-2	PM/HAP	POM	Organic PM	0.0019%	0	1.3E-05	0	NA		1.3E-05
Benzo(a)pyrene	50-32-8	PM/HAP	POM	Organic PM	0.0023%	0	1.5E-05	0	NA		1.5E-05
Benzo(e)pyrene	192-97-2	PM/HAP	POM	Organic PM	0.0078%	0.0095%	5.2E-05	4.8E-05	NA		1.0E-04
Chrysene	218-01-9	PM/HAP	POM	Organic PM	0.103%	0.21%	6.9E-04	1.1E-03	NA		1.7E-03
Dibenz(a,h)anthracene	53-70-3	PM/HAP	POM	Organic PM	0.00037%	0	2.5E-06	0	NA		2.5E-06
Fluoranthene	206-44-0	PM/HAP	POM	Organic PM	0.05%	0.15%	3.4E-04		NA		3.4E-04
Fluorene	86-73-7	PM/HAP	POM	Organic PM	0.77%	1.01%	5.2E-03	5.1E-03	NA		1.0E-02
Indeno(1,2,3-cd)pyrene	193-39-5	PM/HAP	POM	Organic PM	0.00047%	0	3.2E-06	0	NA		3.2E-06
2-Methylnaphthalene	91-57-6	PM/HAP	POM	Organic PM	2.38%	5.27%	1.6E-02	2.6E-02	NA		0.042
Naphthalene	91-20-3	PM/HAP	POM	Organic PM	1.25%	1.82%	8.4E-03	9.1E-03	NA		1.8E-02
Perylene	198-55-0	PM/HAP	POM	Organic PM	0.022%	0.03%	1.5E-04	1.5E-04	NA		3.0E-04
Phenanthrene	85-01-8	PM/HAP	POM	Organic PM	0.81%	1.80%	5.4E-03	9.0E-03	NA		1.4E-02
Pyrene	129-00-0	PM/HAP	POM	Organic PM	0.15%	0.44%	1.0E-03	2.2E-03	NA		3.2E-03
Total PAH HAPs							0.040	0.056	NA		0.096
Other semi-volatile HAPs											
Phenol		PM/HAP	---	Organic PM	1.18%	0	7.9E-03	0	0		7.9E-03

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

Methodology

Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Speciation Profile (%)] * [Organic PM (tons/yr)]
 Speciation Profiles from AP-42 Chapter 11.1 (dated 3/04), Tables 11.1-15 and 11.1-16

Abbreviations

PM = Particulate Matter
 HAP = Hazardous Air Pollutant
 POM = Polycyclic Organic Matter

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

Organic Volatile-Based Compounds (Table 11.1-16)

Pollutant	CASRN	Category	HAP Type	Source	Speciation Profile		Unlimited/Uncontrolled Potential to Emit (tons/yr)			
					Load-out and Onsite Yard (% by weight of TOC)	Silo Filling and Asphalt Storage Tank (% by weight of TOC)	Load-out	Silo Filling	Onsite Yard	Total
VOC		VOC	---	TOC	94%	100%	7.71	24.02	2.04	33.76
non-VOC/non-HAPS										
Methane	74-82-8	non-VOC/non-HAP	---	TOC	6.50%	0.26%	5.3E-01	6.2E-02	1.4E-01	0.736
Acetone	67-64-1	non-VOC/non-HAP	---	TOC	0.046%	0.055%	3.8E-03	1.3E-02	1.0E-03	0.018
Ethylene	74-85-1	non-VOC/non-HAP	---	TOC	0.71%	1.10%	5.8E-02	2.6E-01	1.5E-02	0.338
Total non-VOC/non-HAPS					7.30%	1.40%	0.598	0.336	0.158	1.09
Volatile organic HAPs										
Benzene	71-43-2	VOC/HAP	---	TOC	0.052%	0.032%	4.3E-03	7.7E-03	1.1E-03	1.3E-02
Bromomethane	74-83-9	VOC/HAP	---	TOC	0.0096%	0.0049%	7.9E-04	1.2E-03	2.1E-04	2.2E-03
2-Butanone	78-93-3	VOC/HAP	---	TOC	0.049%	0.039%	4.0E-03	9.4E-03	1.1E-03	1.4E-02
Carbon Disulfide	75-15-0	VOC/HAP	---	TOC	0.013%	0.016%	1.1E-03	3.8E-03	2.8E-04	5.2E-03
Chloroethane	75-00-3	VOC/HAP	---	TOC	0.00021%	0.004%	1.7E-05	9.6E-04	4.6E-06	9.8E-04
Chloromethane	74-87-3	VOC/HAP	---	TOC	0.015%	0.023%	1.2E-03	5.5E-03	3.3E-04	7.1E-03
Cumene	92-82-8	VOC/HAP	---	TOC	0.11%	0	9.0E-03	0	2.4E-03	1.1E-02
Ethylbenzene	100-41-4	VOC/HAP	---	TOC	0.28%	0.038%	2.3E-02	9.1E-03	6.1E-03	0.038
Formaldehyde	50-00-0	VOC/HAP	---	TOC	0.088%	0.69%	7.2E-03	1.7E-01	1.9E-03	0.175
n-Hexane	100-54-3	VOC/HAP	---	TOC	0.15%	0.10%	1.2E-02	2.4E-02	3.3E-03	0.040
Isooctane	540-84-1	VOC/HAP	---	TOC	0.0018%	0.00031%	1.5E-04	7.4E-05	3.9E-05	2.6E-04
Methylene Chloride	75-09-2	non-VOC/HAP	---	TOC	0	0.00027%	0	6.5E-05	0	6.5E-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%	6.0E-04	1.3E-03	1.6E-04	2.1E-03
Tetrachloroethene	127-18-4	non-VOC/HAP	---	TOC	0.0077%	0	6.3E-04	0	1.7E-04	8.0E-04
Toluene	100-88-3	VOC/HAP	---	TOC	0.21%	0.062%	1.7E-02	1.5E-02	4.6E-03	0.037
1,1,1-Trichloroethane	71-55-6	VOC/HAP	---	TOC	0	0	0	0	0	0
Trichloroethene	79-01-6	VOC/HAP	---	TOC	0	0	0	0	0	0
Trichlorofluoromethane	75-69-4	VOC/HAP	---	TOC	0.0013%	0	1.1E-04	0	2.8E-05	1.3E-04
m-p-Xylene	1330-20-7	VOC/HAP	---	TOC	0.41%	0.20%	3.4E-02	4.8E-02	8.9E-03	0.091
o-Xylene	95-47-6	VOC/HAP	---	TOC	0.08%	0.057%	6.6E-03	1.4E-02	1.7E-03	2.2E-02
Total volatile organic HAPs					1.50%	1.30%	0.123	0.312	0.033	0.468

Methodology

Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Speciation Profile (%)] * [TOC (tons/yr)]
Speciation Profiles from AP-42 Chapter 11.1 (dated 3/04), Tables 11.1-15 and 11.1-16

Abbreviations

TOC = Total Organic Compounds
HAP = Hazardous Air Pollutant

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

Company Name: Rieth-Riley Construction Co., Inc.
Current Source Location: 3425 O'Farrell Road, Lafayette, IN 47904
Permit Number: 157-28338-05267
Revision Number: 157-31522-05267
Reviewer: Hannah L. Desrosiers
Date Received: 2/17/2012

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

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

Material	Silt Content (wt %)*	Emission Factor (lb/acre/day)	Maximum Anticipated Pile Size (acres)**	PTE of PM (tons/yr)	PTE of PM10/PM2.5 (tons/yr)
Sand	2.6	3.01	1.00	0.549	0.192
Limestone	1.6	1.85	1.30	0.439	0.154
RAP	0.5	0.58	1.00	0.106	0.037
Gravel	1.6	1.85	0.05	0.017	0.006
Slag	3.8	4.40	0.75	0.602	0.211
Totals				1.71	0.60

Methodology

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

PTE of PM10/PM2.5 (tons/yr) = (Potential PM Emissions (tons/yr)) * 35%

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

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

PM2.5 = PM10

Abbreviations

PM = Particulate Matter

PM10 = Particulate Matter (<10 um)

PM2.5 = Particulate Matter (<2.5 um)

PTE = Potential to Emit

RAP - recycled asphalt pavement

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

Company Name: Rieth-Riley Construction Co., Inc.
Current Source Location: 3425 O'Farrell Road, Lafayette, IN 47904
Permit Number: 157-28338-05267
Revision Number: 157-31522-05267
Reviewer: Hannah L. Desrosiers
Date Received: 2/17/2012

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

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

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

where: E_f = Emission factor (lb/ton)

k (PM) =	0.74	= particle size multiplier (0.74 assumed for aerodynamic diameter <=100 um)
k (PM10) =	0.35	= particle size multiplier (0.35 assumed for aerodynamic diameter <=10 um)
k (PM2.5) =	0.053	= particle size multiplier (0.053 assumed for aerodynamic diameter <=2.5 um)
U =	10.2	= worst case annual mean wind speed (Source: NOAA, 2006*)
M =	4.0	= material % moisture content of aggregate (Source: AP-42 Section 11.1.1.1)
E_f (PM) =	2.27E-03	lb PM/ton of material handled
E_f (PM10) =	1.07E-03	lb PM10/ton of material handled
E_f (PM2.5) =	1.62E-04	lb PM2.5/ton of material handled

Maximum Annual Asphalt Production =	3,942,000	tons/yr
Percent Asphalt Cement/Binder (weight %) =	5.0%	
Maximum Material Handling Throughput =	3,744,900	tons/yr

Type of Activity	Unlimited/Uncontrolled PTE of PM (tons/yr)	Unlimited/Uncontrolled PTE of PM10 (tons/yr)	Unlimited/Uncontrolled PTE of PM2.5 (tons/yr)
Truck unloading of materials into storage piles	4.24	2.01	0.30
Front-end loader dumping of materials into feeder bins	4.24	2.01	0.30
Conveyor dropping material into dryer/mixer or batch tower	4.24	2.01	0.30
Total (tons/yr)	12.73	6.02	0.91

Methodology

The percent asphalt cement/binder provided by the source.

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

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

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

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

Material Screening and Conveying (AP-42 Section 11.19.2)

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

Operation	Uncontrolled Emission Factor for PM (lbs/ton)*	Uncontrolled Emission Factor for PM10 (lbs/ton)*	Unlimited/Uncontrolled PTE of PM (tons/yr)	Unlimited/Uncontrolled PTE of PM10/PM2.5 (tons/yr)**
Crushing	0.0054	0.0024	10.11	4.49
Screening	0.025	0.0087	46.81	16.29
Conveying	0.003	0.0011	5.62	2.06
Unlimited Potential to Emit (tons/yr) =			62.54	22.84

Methodology

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

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

Raw materials may include stone/gravel, slag, and recycled asphalt pavement (RAP)

Emission Factors from AP-42 Chapter 11.19.2 (dated 8/04), Table 11.19.2-2

*Uncontrolled emissions factors for PM/PM10 represent tertiary crushing of stone with moisture content ranging from 0.21 to 1.3 percent by weight (Table 11.19.2-2). The bulk moisture content of aggregate in the storage piles at a hot mix asphalt production plant typically stabilizes between 3 to 5 percent by weight (Source: AP-42 Section 11.1.1.1).

**Assumes PM10 = PM2.5

Abbreviations

PM = Particulate Matter
 PM10 = Particulate Matter (<10 um)
 PM2.5 = Particulate matter (< 2.5 um)
 PTE = Potential to Emit

Appendix A.1: Unlimited Emissions Calculations
Unpaved Roads

Company Name: Rieth-Riley Construction Co., Inc.
Current Source Location: 3425 O'Farrell Road, Lafayette, IN 47904
Permit Number: 157-28338-05267
Revision Number: 157-31522-05267
Reviewer: Hannah L. Desrosiers
Date Received: 2/17/2012

Unpaved Roads at Industrial Site

The following calculations determine the amount of emissions created by unpaved roads, based on 8,760 hours of use and AP-42, Ch 13.2.2 (12/2003).

Maximum Annual Asphalt Production = 3,942,000 tons/yr
Percent Asphalt Cement/Binder (weight %) = 5.0%
Maximum Material Handling Throughput = 3,744,900 tons/yr
Maximum Asphalt Cement/Binder Throughput = 197,100 tons/yr
Maximum No. 2 Fuel Oil Usage = 9,385,714 gallons/yr

Process	Vehicle Type	Maximum Weight of Vehicle (tons)	Maximum Weight of Load (tons)	Maximum Weight of Vehicle and Load (tons/trip)	Maximum trips per year (trip/yr)	Total Weight driven per year (ton/yr)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	17.0	22.4	39.4	1.7E+05	6.6E+06	300	0.057	9499.0
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	17.0	0	17.0	1.7E+05	2.8E+06	300	0.057	9499.0
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	12.0	36.0	48.0	5.5E+03	2.6E+05	0	0	0
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.0	5.5E+03	6.6E+04	0	0	0
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	12.0	32.0	44.0	9.9E+02	4.4E+04	0	0	0
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.0	9.9E+02	1.2E+04	0	0	0
Aggregate/RAP Loader Full	Front-end loader (3 CY)	15.0	4.2	19.2	8.9E+05	1.7E+07	300	0.057	50661.5
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	15.0	0	15.0	8.9E+05	1.3E+07	300	0.057	50661.5
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	17.0	24.0	41.0	1.6E+05	6.7E+06	0	0	0
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	17.0	0	17.0	1.6E+05	2.8E+06	0	0	0
Total						2.5E+06	5.0E+07		1.2E+05

Average Vehicle Weight Per Trip = 20.3 tons/trip
Average Miles Per Trip = 0.049 miles/trip

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

	PM	PM10	PM2.5	
where k =	4.9	1.5	0.15	lb/mi = particle size multiplier (AP-42 Table 13.2.2-2 for Industrial Roads)
s =	4.9	4.8	4.8	% = mean % silt content of unpaved roads (AP-42 Table 13.2.2-3 Sand/Gravel Processing Plant Road)
a =	0.7	0.9	0.9	= constant (AP-42 Table 13.2.2-2)
W =	20.3	20.3	20.3	tons = average vehicle weight (provided by source)
b =	0.45	0.45	0.45	= constant (AP-42 Table 13.2.2-2)

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

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

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

	PM	PM10	PM2.5	
Unmitigated Emission Factor, E_f =	6.09	1.55	0.16	lb/mile
Mitigated Emission Factor, E_{ext} =	4.01	1.02	0.10	lb/mile
Dust Control Efficiency =	50%	50%	50%	(pursuant to control measures outlined in fugitive dust control plan)

Process	Vehicle Type	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	28.95	7.38	0.74	19.03	4.85	0.49	9.52	2.43	0.24
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	28.95	7.38	0.74	19.03	4.85	0.49	9.52	2.43	0.24
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	0	0	0	0	0	0	0	0	0
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	0	0	0	0	0	0	0	0	0
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	0	0	0	0	0	0	0	0	0
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	0	0	0	0	0	0	0	0	0
Aggregate/RAP Loader Full	Front-end loader (3 CY)	154.39	39.35	3.93	101.52	25.87	2.59	50.76	12.94	1.29
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	154.39	39.35	3.93	101.52	25.87	2.59	50.76	12.94	1.29
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	0	0	0	0	0	0	0	0	0
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	0	0	0	0	0	0	0	0	0
Totals		366.68	93.45	9.35	241.10	61.45	6.14	120.55	30.72	3.07

Methodology

Maximum Material Handling Throughput = [Annual Asphalt Production Limitation (tons/yr)] * [1 - Percent Asphalt Cement/Binder (weight %)]
Maximum Asphalt Cement/Binder Throughput = [Annual Asphalt Production Limitation (tons/yr)] * [Percent Asphalt Cement/Binder (weight %)]
Maximum Weight of Vehicle and Load (tons/trip) = [Maximum Weight of Vehicle (tons/trip)] + [Maximum Weight of Load (tons/trip)]
Maximum trips per year (trip/yr) = [Throughput (tons/yr)] / [Maximum Weight of Load (tons/trip)]
Total Weight driven per year (ton/yr) = [Maximum Weight of Vehicle and Load (tons/trip)] * [Maximum trips per year (trip/yr)]
Maximum one-way distance (mi/trip) = [Maximum one-way distance (feet/trip)] / [5280 ft/mile]
Maximum one-way miles (miles/yr) = [Maximum trips per year (trip/yr)] * [Maximum one-way distance (mi/trip)]
Average Vehicle Weight Per Trip (ton/trip) = SUM[Total Weight driven per year (ton/yr)] / SUM[Maximum trips per year (trip/yr)]
Average Miles Per Trip (miles/trip) = SUM[Maximum one-way miles (miles/yr)] / SUM[Maximum trips per year (trip/yr)]
Unmitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Unmitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
Mitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Mitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
Controlled PTE (tons/yr) = (Mitigated PTE (tons/yr)) * (1 - Dust Control Efficiency)

Abbreviations

PM = Particulate Matter
PM10 = Particulate Matter (<10 um)
PM2.5 = Particulate Matter (<2.5 um)
PM2.5 = PM10
PTE = Potential to Emit

Appendix A: Unlimited Emissions Calculations
Paved Roads

Company Name: Rieth-Riley Construction Co., Inc.
Current Source Location: 3425 O'Farrell Road, Lafayette, IN 47904
Permit Number: 157-28338-05267
Revision Number: 157-31522-05267
Reviewer: Hannah L. Desrosiers
Date Received: 2/17/2012

Paved Roads at Industrial Site

The following calculations determine the amount of emissions created by paved roads, based on 8,760 hours of use and AP-42, Ch 13.2.1 (12/2003).

Maximum Annual Asphalt Production = 3,942,000 tons/yr
 Percent Asphalt Cement/Binder (weight %) = 5.0%
 Maximum Material Handling Throughput = 3,744,900 tons/yr
 Maximum Asphalt Cement/Binder Throughput = 197,100 tons/yr
 Maximum No. 2 Fuel Oil Usage = 9,385,714 gallons/yr

Process	Vehicle Type	Maximum Weight of Vehicle (tons)	Maximum Weight of Load (tons)	Maximum Weight of Vehicle and Load (tons/trip)	Maximum trips per year (trip/yr)	Total Weight driven per day (ton/yr)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	17.0	22.4	39.40	1.7E+05	6.6E+06	1,800	0.341	56994.2
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	17.0	0	17.00	1.7E+05	2.8E+06	1,800	0.341	56994.2
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	12.0	36.0	48.00	5.5E+03	2.6E+05	1,800	0.341	1866.5
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.00	5.5E+03	6.6E+04	1,800	0.341	1866.5
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	12.0	32.0	44.00	9.9E+02	4.4E+04	1,800	0.341	338.0
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.00	9.9E+02	1.2E+04	1,800	0.341	338.0
Aggregate/RAP Loader Full	Front-end loader (3 CY)	15.0	4.2	19.20	8.9E+05	1.7E+07	0	0	0
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	15.0	0	15.00	8.9E+05	1.3E+07	0	0	0
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	17.0	24.0	41.00	1.6E+05	6.7E+06	1,800	0.341	55994.3
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	17.0	0	17.00	1.6E+05	2.8E+06	1,800	0.341	55994.3
Total					2.5E+06	5.0E+07			2.3E+05

Average Vehicle Weight Per Trip = 20.3 tons/trip
 Average Miles Per Trip = 0.094 miles/trip

Unmitigated Emission Factor, Ef = [k * (sL)^{0.91} * (W)^{1.02}] (Equation 1 from AP-42 13.2.1)

	PM	PM10	PM2.5
where k =	0.011	0.0022	0.00054
W =	20.3	20.3	20.3
sL =	0.6	0.6	0.6

lb/mi = particle size multiplier (AP-42 Table 13.2.1-1)
 tons = average vehicle weight (provided by source)
 g/m² = Ubiquitous Baseline Silt Loading Values of paved roads (Table 13.2.1-3 for summer months)

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

Mitigated Emission Factor, Eext = Ef * [1 - (p/4N)]

where p = 125 days of rain greater than or equal to 0.01 inches (see Fig. 13.2.1-2)
 N = 365 days per year

	PM	PM10	PM2.5	lb/mile
Unmitigated Emission Factor, Ef =	0.15	0.03	0.01	lb/mile
Mitigated Emission Factor, Eext =	0.14	0.03	0.01	lb/mile
Dust Control Efficiency =	50%	50%	50%	(pursuant to control measures outlined in fugitive dust control plan)

Process	Vehicle Type	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	4.24	0.85	0.21	3.88	0.78	0.19	1.94	0.39	0.10
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	4.24	0.85	0.21	3.88	0.78	0.19	1.94	0.39	0.10
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	0.139	0.028	6.8E-03	0.127	0.025	6.2E-03	0.063	1.3E-02	3.1E-03
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	0.139	0.028	6.8E-03	0.127	0.025	6.2E-03	0.063	1.3E-02	3.1E-03
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	2.5E-02	5.0E-03	1.2E-03	2.3E-02	4.6E-03	1.1E-03	1.1E-02	2.3E-03	5.6E-04
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	2.5E-02	5.0E-03	1.2E-03	2.3E-02	4.6E-03	1.1E-03	1.1E-02	2.3E-03	5.6E-04
Aggregate/RAP Loader Full	Front-end loader (3 CY)	0	0	0	0	0	0	0	0	0
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	0	0	0	0	0	0	0	0	0
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	4.16	0.83	0.20	3.81	0.76	0.19	1.90	0.38	0.09
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	4.16	0.83	0.20	3.81	0.76	0.19	1.90	0.38	0.09
Totals		17.13	3.43	0.84	15.67	3.13	0.77	7.83	1.57	0.38

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 (miles/yr) = [Maximum one-way distance (feet/trip)] / [5280 ft/mile]
 Maximum one-way miles (miles/yr) = [Maximum trips per year (trip/yr)] * [Maximum one-way distance (mi/trip)]
 Average Vehicle Weight Per Trip (ton/trip) = SUM[Total Weight driven per year (ton/yr)] / SUM[Maximum trips per year (trip/yr)]
 Average Miles Per Trip (miles/trip) = SUM[Maximum one-way miles (miles/yr)] / SUM[Maximum trips per year (trip/yr)]
 Unmitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Unmitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
 Mitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Mitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
 Controlled PTE (tons/yr) = (Mitigated PTE (tons/yr)) * (1 - Dust Control Efficiency)

Abbreviations

PM = Particulate Matter
 PM10 = Particulate Matter (<10 um)
 PM2.5 = Particulate Matter (<2.5 um)
 PM2.5 = PM10
 PTE = Potential to Emit

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

Company Name: Rieth-Riley Construction Co., Inc.
Current Source Location: 3425 O'Farrell Road, Lafayette, IN 47904
Permit Number: 157-28338-05267
Revision Number: 157-31522-05267
Reviewer: Hannah L. Desrosiers
Date Received: 2/17/2012

The following calculations determine the amount of VOC and HAP emissions created from volatilization of solvent used as diluent in the liquid binder for cold mix asphalt production

Maximum Annual Asphalt Production = $\frac{3,942,000}{5.0\%}$ tons/yr
 Percent Asphalt Cement/Binder (weight %) = 5.0%
 Maximum Asphalt Cement/Binder Throughput = 197,100 tons/yr

Volatile Organic Compounds

	Maximum weight % of VOC solvent in binder*	Weight % VOC solvent in binder that evaporates	Maximum VOC Solvent Usage (tons/yr)	PTE of VOC (tons/yr)
Cut back asphalt rapid cure (assuming gasoline or naphtha solvent)	25.3%	95.0%	49,866.30	47,372.99
Cut back asphalt medium cure (assuming kerosene solvent)	28.6%	70.0%	56,370.60	39,459.42
Cut back asphalt slow cure (assuming fuel oil solvent)	20.0%	25.0%	39,420.00	9,855.00
Emulsified asphalt with solvent (assuming water, emulsifying agent, and 15% fuel oil solvent)	15.0%	46.4%	29,565.00	13,718.16
Other asphalt with solvent binder	25.9%	2.5%	51,048.90	1,276.22
Worst Case PTE of VOC =				47,372.99

Hazardous Air Pollutants

Worst Case Total HAP Content of VOC solvent (weight %)* =	26.08%
Worst Case Single HAP Content of VOC solvent (weight %)* =	9.0% Xylenes
PTE of Total HAPs (tons/yr) =	12,356.63
PTE of Single HAP (tons/yr) =	4,263.57 Xylenes

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

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

Methodology

Maximum Asphalt Cement/Binder Throughput = [Annual Asphalt Production Limitation (tons/yr)] * [Percent Asphalt Cement/Binder (weight %)]
 Maximum VOC Solvent Usage (tons/yr) = [Maximum Asphalt Cement/Binder Throughput (tons/yr)] * [Maximum Weight % of VOC Solvent in Binder]
 PTE of VOC (tons/yr) = [Weight % VOC solvent in binder that evaporates] * [Maximum VOC Solvent Usage (tons/yr)]
 PTE of Total HAPs (tons/yr) = [Worst Case Total HAP Content of VOC solvent (weight %)] * [Worst Case Limited PTE of VOC (tons/yr)]
 PTE of Single HAP (tons/yr) = [Worst Case Single HAP Content of VOC solvent (weight %)] * [Worst Case Limited PTE of VOC (tons/yr)]

*Source: Petroleum Liquids. Potter, T.L. and K.E. Simmons. 1998. Total Petroleum Hydrocarbon Criteria Working Group Series, Volume 2. Composition of Petroleum Mixtures. The Association for Environmental Health and Science.

Abbreviations

VOC = Volatile Organic Compounds
 PTE = Potential to Emit

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

Company Name: Rieth-Riley Construction Co., Inc.
Current Source Location: 3425 O'Farrell Road, Lafayette, IN 47904
Permit Number: 157-28338-05267
Revision Number: 157-31522-05267
Reviewer: Hannah L. Desrosiers
Date Received: 2/17/2012

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

$$\begin{aligned} \text{Gasoline Throughput} &= 3.6 \text{ gallons/day} \\ &= 1.3 \text{ kgal/yr} \end{aligned}$$

Volatile Organic Compounds

Emission Source	Emission Factor (lb/kgal of throughput)	PTE of VOC (tons/yr)*
Filling storage tank (balanced submerged filling)	0.3	1.97E-04
Tank breathing and emptying	1.0	6.57E-04
Vehicle refueling (displaced losses - controlled)	1.1	7.23E-04
Spillage	0.7	4.60E-04
Total		2.04E-03

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) =	5.31E-04
Limited PTE of Single HAP (tons/yr) =	1.83E-04 Xylenes

Methodology

The gasoline throughput was provided by the source.

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

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

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

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

*Source: Petroleum Liquids. Potter, T.L. and K.E. Simmons. 1998. Total Petroleum Hydrocarbon Criteria Working Group Series, Volume 2. Composition of Petroleum Mixtures. The Association for Environmental Health and Science.

Abbreviations

VOC = Volatile Organic Compounds

PTE = Potential to Emit

Appendix A.2: Limited Emissions Summary
Entire Source - Drum Mix

Company Name: Rieth-Riley Construction Co., Inc.
Current Source Location: 3425 O'Farrell Road, Lafayette, IN 47904
Permit Number: 157-28338-05267
Revision Number: 157-31522-05267
Reviewer: Hannah L. Desrosiers
Date Received: 2/17/2012

Asphalt Plant Limitations - Drum Mix

Maximum Hourly Asphalt Production =	450	ton/hr
Annual Asphalt Production Limitation =	1,000,000	ton/yr
Blast Furnace Slag Usage Limitation =	1.50	% sulfur
Steel Slag Usage Limitation =	0.66	% sulfur
No. 2 Fuel Oil Limitation =	0.50	% sulfur
No. 4 Fuel Oil Limitation =	0.50	% sulfur
Residual (No. 5 or No. 6) Fuel Oil Limitation =	0.50	% sulfur
Used/Waste Oil Limitation =	1.00	% sulfur
Diesel Fuel Limitation - Generator < 600 HP =	0	% sulfur
Diesel Fuel Limitation - Generator > 600 HP =	0	% sulfur
	1.02	% ash
	0.400	% chlorine
	0.010	% lead
PM Dryer/Mixer Limitation =	0.394	lb/ton of asphalt production
PM10 Dryer/Mixer Limitation =	0.165	lb/ton of asphalt production
PM2.5 Dryer/Mixer Limitation =	0.181	lb/ton of asphalt production
VOC Dryer/Mixer Limitation =	0.032	lb/ton of asphalt production
CO Dryer/Mixer Limitation =	0.130	lb/ton of asphalt production
Blast Furnace Slag SO ₂ Dryer/Mixer Limitation =	0.740	lb/ton of slag processed
Steel Slag SO ₂ Dryer/Mixer Limitation =	0.0014	lb/ton of slag processed
Cold Mix Asphalt VOC Limitation =	24.90	tons/yr
HCl Limitation =	26.40	lb/kgal

Limited/Controlled Emissions

Process Description	Limited/Controlled Potential Emissions (tons/year)									
	Criteria Pollutants							Greenhouse Gas Pollutants	Hazardous Air Pollutants	
	PM	PM10	PM2.5	SO ₂ ²	NO _x ²	VOC ³	CO	CO ₂ e ⁴	Total HAPs	Worst Case HAP
Ducted Emissions										
Dryer Fuel Combustion (worst case)	24.48	19.51	19.51	99.00	98.99	24.90	54.46	99,000.00	11.36	9.90 (hydrogen chloride)
Dryer/Mixer (Process) ¹	196.79	82.29	90.60				65.00		5.33	1.55 (formaldehyde)
Dryer/Mixer Slag Processing	0	0	0				0		0	0
Hot Oil Heater Fuel Combustion (worst case)	0.27	0.44	0.44				1.58		0.044	0.034 (hexane)
Diesel-Fired Generator < 600 HP	0	0	0				0		0	0
Diesel-Fired Generator > 600 HP	0	0	0				0		0	0
Worst Case Emissions⁴	197.06	82.73	91.04				99.00		98.99	24.90
Fugitive Emissions										
Asphalt Load-Out, Silo Filling, On-Site Yard	0.55	0.55	0.55	0	0	see note ³	1.44	0	0.14	0.04 (formaldehyde)
Material Storage Piles	1.71	0.60	0.60	0	0	0	0	0	0	0
Material Processing and Handling	3.23	1.53	0.23	0	0	0	0	0	0	0
Material Crushing, Screening, and Conveying	15.87	5.80	5.80	0	0	0	0	0	0	0
Unpaved and Paved Roads (worst case)	30.58	7.79	0.78	0	0	0	0	0	0	0
Cold Mix Asphalt Production	0	0	0	0	0	see note ³	0	0	6.49	2.24 (xylenes)
Gasoline Fuel Transfer and Dispensing	0	0	0	0	0	2.04E-03	0	0	5.31E-04	1.83E-04 (xylenes)
Volatile Organic Liquid Storage Vessels	0	0	0	0	0	negl	0	0	negl	negl
Total Fugitive Emissions	51.94	16.27	7.96	0	0	see note ³	1.44	0	6.64	2.24 (xylenes)
Totals Limited/Controlled Emissions	249.00	99.00	99.00	99.00	98.99	24.90	68.02	99,000.00	18.04	9.90 (hydrogen chloride)

negl = negligible

Fuel component percentages provided by the source.

Worst Case Fuel Combustion is based on the fuel with the highest emissions for each specific pollutant.

¹ Based on the unlimited potential to emit, the dryer/mixer process (page 3 of Appendix A.1) represents the worst case emissions of PM, PM10, PM2.5, VOC, and CO. Therefore, the source has elected to limit PM, PM10, PM2.5, VOC, and CO emissions to less than Title V and PSD applicability by accepting an asphalt production limit and a lb/ton emission limit (see page 3 of Appendix A.2 for more detail).

² The source will limit the combined SO₂ emissions from the dryer mixer burner, hot oil heater, and slag processing, and the combined NO_x emissions from the dryer mixer burner and hot oil heater such that the SO₂ and NO_x emissions do not exceed 99.0 tons per year, each. In addition, the source will limit the HCl emissions from the combustion of waste oil such that they do not exceed 9.9 tons per year. Compliance with these limits will be demonstrated using equations.

³ The source will limit the combined VOC emissions from the dryer/mixer process, hot oil heaters, asphalt load-out, silo filling, on-site yard, and cold mix asphalt production such that the VOC emissions do not exceed 24.9 tons per year. Compliance will be determined using an equation.

⁴ The source will limit the combined CO₂e emissions from the dryer/mixer and hot oil heaters such that the CO₂e emissions do not exceed 99,000 tons per year. Compliance will be determined using an equation.

⁵ Worst Case PM, PM10, PM2.5, CO, and Total HAPs Emissions (tons/yr) = Worst Case Emissions from Dryer Fuel Combustion and Dryer/Mixer + Worst Case Emissions from the Hot Oil Heaters + Diesel-Fired Generator < 600 HP + Diesel-Fired Generator > 600 HP.

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

Company Name: Rieth-Riley Construction Co., Inc.
Current Source Location: 3425 O'Farrell Road, Lafayette, IN 47904
Permit Number: 157-28338-05267
Revision Number: 157-31522-05267
Reviewer: Hannah L. Desrosiers
Date Received: 2/17/2012

The following calculations determine the limited emissions created from the combustion of natural gas, fuel oil, propane, butane, or used/waste oil in the dryer/mixer and all other fuel combustion sources at the source.

Production and Fuel Limitations

Maximum Hourly Asphalt Production	450	ton/hr
Annual Asphalt Production Limitation	1,000,000	ton/yr
Natural Gas Usage ¹	1,042	MMCF/yr
No. 2 Fuel Oil Usage ²	2,519,675	gal/yr, and
No. 4 Fuel Oil Usage ²	2,640,000	gal/yr, and
Residual (No. 5 or No. 6) Fuel Oil Usage ²	0	gal/yr, and
Propane Usage ³	14,519,337	gal/yr, and
Butane Usage ³	12,967,711	gal/yr, and
Used/Waste Oil Usage ⁴	750,000	gal/yr, and
		0.50 % sulfur
		0.50 % sulfur
		0 % sulfur
		0.20 gr/100 ft3 sulfur
		0.22 gr/100 ft3 sulfur
		1.00 % sulfur
		1.02 % ash
		0.400 % chlorine
		0.010 % lead

Limited Emissions

Criteria Pollutant	Emission Factor (units)										Limited Potential to Emit (tons/yr)					
	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	No. 4 Fuel Oil ¹ (lb/kgal)	Residual (No. 5 or No. 6) (lb/kgal)	Propane (lb/kgal)	Butane (lb/kgal)	Used/Waste Oil (lb/kgal)	Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)	No. 4 Fuel Oil (tons/yr)	Residual (No. 5 or No. 6) (tons/yr)	Propane (tons/yr)	Butane (tons/yr)	Used/Waste Oil (tons/yr)	Worse Case Fuel (tons/yr)	
PM	1.9	2	7	3.22	0.5	0.6	65.28	0.99	2.52	9.24	0	3.63	3.89	24.48	24.48	
PM10	7.6	3.3	8.3	4.72	0.5	0.6	52.02	3.96	4.16	10.96	0	3.63	3.89	19.51	19.51	
SO2	0.6	71.0	75.0	0	0.020	0.020	147.0	0.31	89.45	99.00	0	0.15	0.13	55.13	99.00	
NOx	190	24.0	47.0	47.0	13.0	15.0	19.0	98.99	30.24	62.04	0	94.38	97.26	7.13	98.99	
VOC	5.5	0.20	0.20	0.28	1.00	1.10	1.0	2.87	0.25	0.26	0	7.26	7.13	0.38	7.26	
CO	84	5.0	5.0	5.0	7.5	8.4	5.0	43.76	6.30	6.60	0	54.45	54.46	1.88	54.46	
Hazardous Air Pollutant																
HCl							26.40							9.90	9.90	
Antimony			5.25E-03	5.25E-03			negl							negl	6.9E-03	
Arsenic	2.0E-04	5.6E-04	1.32E-03	1.32E-03			1.1E-01	1.0E-04	7.0E-04	1.74E-03	0			4.13E-02	4.1E-02	
Beryllium	1.2E-05	4.2E-04	2.78E-05	2.78E-05			negl	6.3E-06	5.29E-04	3.67E-05	0			negl	5.3E-04	
Cadmium	1.1E-03	4.2E-04	3.98E-04	3.98E-04			9.3E-03	5.7E-04	5.29E-04	5.25E-04	0			3.49E-03	3.5E-03	
Chromium	1.4E-03	4.2E-04	8.45E-04	8.45E-04			2.0E-02	7.3E-04	5.29E-04	1.12E-03	0			7.50E-03	7.5E-03	
Cobalt	8.4E-05		6.02E-03	6.02E-03			2.1E-04	4.4E-05		7.95E-03	0			7.88E-05	7.9E-03	
Lead	5.0E-04	1.3E-03	1.51E-03	1.51E-03			0.55	2.6E-04	1.59E-03	1.99E-03	0			2.1E-01	0.21	
Manganese	3.8E-04	8.4E-04	3.00E-03	3.00E-03			6.8E-02	2.0E-04	1.06E-03	3.96E-03	0			2.55E-02	0.03	
Mercury	2.6E-04	4.2E-04	1.13E-04	1.13E-04				1.4E-04	5.29E-04	1.49E-04	0				5.3E-04	
Nickel	2.1E-03	4.2E-04	8.45E-02	8.45E-02			1.1E-02	1.1E-03	5.29E-04	1.12E-01	0			4.13E-03	0.11	
Selenium	2.4E-05	2.1E-03	6.83E-04	6.83E-04			negl	1.3E-05	2.65E-03	9.02E-04	0			negl	2.6E-03	
1,1,1-Trichloroethane			2.36E-04	2.36E-04						3.12E-04	0				3.1E-04	
1,3-Butadiene															0	
Acetaldehyde															0	
Acroten															0	
Benzene	2.1E-03		2.14E-04	2.14E-04				1.1E-03		2.82E-04	0				1.1E-03	
Bis(2-ethylhexyl)phthalate							2.2E-03							8.25E-04	8.3E-04	
Dichlorobenzene	1.2E-03						8.0E-07	6.3E-04						3.00E-07	6.3E-04	
Ethylbenzene			6.36E-05	6.36E-05						8.40E-05	0				8.4E-05	
Formaldehyde	7.5E-02	6.10E-02	3.30E-02	3.30E-02				3.9E-02	7.69E-02	4.36E-02	0				0.08	
Hexane	1.8E+00							0.94							0.94	
Phenol							2.4E-03							9.00E-04	9.0E-04	
Toluene	3.4E-03		6.20E-03	6.20E-03				1.8E-03		8.18E-03	0				8.2E-03	
Total PAH Haps	negl		1.13E-03	1.13E-03			3.9E-02	negl		1.49E-03	0			1.47E-02	1.5E-02	
Polycyclic Organic Matter		3.30E-03							4.16E-03						4.2E-03	
Xylene			1.09E-04	1.09E-04						1.44E-04	0				1.4E-04	
Total HAPs							0.98	0.09	0.19	0	0	0	0	10.20	11.36	

Methodology

¹ Based on the unlimited potential to emit, the dryer/mixer process (page 3 of Appendix A.1) represents the worst case emissions of PM, PM10, PM2.5, VOC, and CO. Therefore, the source has elected to limit PM, PM10, PM2.5, VOC, and CO emissions to less than Title V and PSD applicability by accepting an asphalt production limit and a lb/ton emission limit (see page 3 of Appendix A.2 for more detail).

² The source will limit the combined SO2 emissions from the dryer mixer burner, hot oil heater, and slag processing, and the combined NOx emissions from the dryer mixer burner and hot oil heater, such that the SO2 and NOx emissions do not exceed 99.0 tons per year, each. Compliance with these limits will be demonstrated using equations.

³ SO2 emissions from the dryer/mixer, hot oil heater, and slag processing shall not exceed 99.0 tons per year. This would be equivalent to combusting 1061 MMCF of Natural Gas, in the dryer/mixer burner and hot oil heater, or 13,200,000 gallons of Butane, in the dryer/mixer burner, if the source only used Natural Gas or Butane.

⁴ NOx emissions from the dryer/mixer and hot oil heater shall not exceed 99.0 tons per year. This would be equivalent to combusting 2,788,733 gallons of No. 2 Fuel Oil, in the dryer/mixer burner and hot oil heater, or 2,640,000 gallons of No. 4 Fuel Oil, in the dryer/mixer burner, if the source only used No. 2 or No. 4 fuel oil.

⁵ The propane fuel usage rate was determined using the maximum fuel input rate for the dryer (see Appendix A.1 for more details).

⁶ Hydrogen Chloride emissions from waste oil combustion shall not exceed 9.9 tons per year. This would be equivalent to combusting 750,000 gallons of waste oil per year with a chlorine content of 0.4%. Compliance with this limit will be demonstrated using an equation.

Natural Gas: Limited Potential to Emit (tons/yr) = (Natural Gas Limitation (MMCF/yr)) * (Emission Factor (lb/MMCF)) * (ton/2000 lbs)
 All Other Fuels: Limited Potential to Emit (tons/yr) = (Fuel Limitation (gals/yr)) * (Emission Factor (lb/kgal)) * (kgal/1000 gal) * (ton/2000 lbs)
 Sources of AP-42 Emission Factors for fuel combustion:

Natural Gas: AP-42 Chapter 1.4 (dated 7/98), Tables 1.4-1, 1.4-2, 1.4-3, and 1.4-4
 No. 2, No. 4, and No. 6 Fuel Oil: AP-42 Chapter 1.3 (dated 5/10), Tables 1.3-1, 1.3-2, 1.3-3, 1.3-8, 1.3-9, 1.3-10, and 1.3-11
 Propane and Butane: AP-42 Chapter 1.5 (dated 7/08), Tables 1.5-1 (assuming PM = PM10)
 Waste Oil: AP-42 Chapter 1.11 (dated 10/96), Tables 1.11-1, 1.11-2, 1.11-3, 1.11-4, and 1.11-5

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

Abbreviations
 PM = Particulate Matter
 PM10 = Particulate Matter (<10 um)
 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.2: Limited Emissions Summary
Greenhouse Gas (CO₂e) Emissions from the
Dryer/Mixer Fuel Combustion with Maximum Capacity ≥ 100 MMBtu/hr**

Company Name: Rieth-Riley Construction Co., Inc.
Current Source Location: 3425 O'Farrell Road, Lafayette, IN 47904
Permit Number: 157-28338-05267
Revision Number: 157-31522-05267
Reviewer: Hannah L. Desrosiers
Date Received: 2/17/2012

The following calculations determine the limited emissions created from the combustion of natural gas, fuel oil, propane, butane, or used/waste oil in the dryer/mixer and all other fuel combustion sources at the source.

Production and Fuel Limitations

Maximum Hourly Asphalt Production =	450	ton/hr								
Annual Asphalt Production Limitation =	1,000,000	ton/yr								
Natural Gas Limitation =	1,042	MMCF/yr								
No. 2 Fuel Oil Limitation =	2,519.675	gal/yr, and	0.50	% sulfur						
No. 4 Fuel Oil Limitation =	2,640,000	gal/yr, and	0.50	% sulfur						
Residual (No. 5 or No. 6) Fuel Oil Limitation =	0	gal/yr, and	0	% sulfur						
Propane Limitation =	14,519.337	gal/yr, and	0.20	gr/100 ft ³ sulfur						
Butane Limitation =	12,967.711	gal/yr, and	0.22	gr/100 ft ³ sulfur						
Used/Waste Oil Limitation =	750,000	gal/yr, and	1.00	% sulfur	1.02	% ash	0.400	% chlorine,	0.010	% lead

Limited Emissions

CO ₂ e Fraction	Emission Factor (units)							Global Warming Potentials (GWP)		
	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	No. 4 Fuel Oil (lb/kgal)	Residual (No. 5 or No. 6) Fuel Oil (lb/kgal)	Propane (lb/kgal)	Butane (lb/kgal)	Used/Waste Oil (lb/kgal)	Name	Chemical Formula	Global warming potential
CO ₂	120,161.84	22,501.41	24,153.46	24,835.04	12,500.00	14,506.73	22,024.15	Carbon dioxide	CO ₂	1
CH ₄	2.49	0.91	0.97	1.00	0.60	0.67	0.89	Methane	CH ₄	21
N ₂ O	2.20	0.26	0.19	0.53	0.90	0.90	0.18	Nitrous oxide	N ₂ O	310

CO ₂ e Fraction	Limited Potential to Emit (tons/yr)						
	Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)	No. 4 Fuel Oil (tons/yr)	Residual (No. 5 or No. 6) Fuel Oil (tons/yr)	Propane (tons/yr)	Butane (tons/yr)	Used/Waste Oil (tons/yr)
CO ₂	62,603.50	28,348.12	31,882.57	0	90,745.86	94,059.54	8,259.06
CH ₄	1.30	1.15	1.27	0	4.37	4.33	0.33
N ₂ O	1.15	0.33	0.25	0	6.53	5.84	0.07
Total	62,605.94	28,349.60	31,884.10	0	90,756.76	94,069.71	8,259.46

CO₂e for Worst Case Fuel (tons/yr)
95,959.49

CO ₂ e Equivalent Emissions (tons/yr)	62,986.10	28,473.82	31,988.37	0	92,863.06	95,959.49	8,287.01
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Methodology

¹The source will limit the combined CO₂e emissions from the dryer/mixer and hot oil heaters such that the CO₂e emissions do not exceed 99,000 tons per year. Compliance will be determined using an equation.

Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.

Sources of Emission Factors for fuel combustion: (Note: To form a conservative estimate, the "worst case" emission factors have been used.)

Natural Gas: Emission Factors for CO₂ and CH₄ from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/MMCF. Emission Factor for N₂O from AP-42 Chapter

No. 2, No. 4, and Residual (No. 5 or No. 6) Fuel Emission Factors for CO₂ and CH₄ from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/kgal. Emission Factor for N₂O from AP-42 Chapter 1.3

Oil: (dated 5/10), Table 1.3-8

Propane and Butane: Emission Factors for CO₂ and CH₄ from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/kgal. Emission Factor for N₂O from AP-42 Chapter 1.5 (dated 7/08), Table 1.5-1

Waste Oil: Emission Factors for CO₂, CH₄, and N₂O from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/kgal.

Emission Factor (EF) Conversions

Natural Gas: EF (lb/MMCF) = [EF (kg/MMBtu) * Conversion Factor (2.20462 lbs/kg) * Heating Value of Natural Gas (MMBtu/scf) * Conversion Factor (1,000,000 scf/MMCF)]

Fuel Oils: EF (lb/kgal) = [EF (kg/MMBtu) * Conversion Factor (2.20462 lbs/kg) * Heating Value of the Fuel Oil (MMBtu/gal) * Conversion Factor (1000 gal/kgal)]

Natural Gas: Limited Potential to Emit (tons/yr) = (Natural Gas Limitation (MMCF/yr)) * (Emission Factor (lb/MMCF)) * (ton/2000 lbs)

All Other Fuels: Limited Potential to Emit (tons/yr) = (Fuel Limitation (gals/yr)) * (Emission Factor (lb/kgal)) * (kgal/1000 gal) * (ton/2000 lbs)

Limited CO₂e Emissions (tons/yr) = CO₂ Potential Emission of "worst case" fuel (ton/yr) x CO₂ GWP (1) + CH₄ Potential Emission of "worst case" fuel (ton/yr) x CH₄ GWP (21) + N₂O Potential Emission of "worst case" fuel (ton/yr) x N₂O GWP (310).

Abbreviations

CH₄ = Methane

CO₂ = Carbon Dioxide

N₂O = Nitrogen Dioxide

PTE = Potential to Emit

**Appendix A.2: Limited Emissions Summary
Dryer/Mixer**

Company Name: Rieth-Riley Construction Co., Inc.
Current Source Location: 3425 O'Farrell Road, Lafayette, IN 47904
Permit Number: 157-28338-05267
Revision Number: 157-31522-05267
Reviewer: Hannah L. Desrosiers
Date Received: 2/17/2012

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

Maximum Hourly Asphalt Production =	450	ton/hr
Annual Asphalt Production Limitation =	1,000,000	ton/yr
PM Dryer/Mixer Limitation =	0.394	lb/ton of asphalt production
PM10 Dryer/Mixer Limitation =	0.165	lb/ton of asphalt production
PM2.5 Dryer/Mixer Limitation =	0.181	lb/ton of asphalt production
CO Dryer/Mixer Limitation =	0.130	lb/ton of asphalt production
VOC Dryer/Mixer Limitation =	0.032	lb/ton of asphalt production

Criteria Pollutant	Emission Factor or Limitation (lb/ton)			Limited/Controlled Potential to Emit (tons/yr)			Worse Case PTE
	Drum-Mix Plant (dryer/mixer, controlled by fabric filter)			Drum-Mix Plant (dryer/mixer, controlled by fabric filter)			
	Natural Gas	No. 2 Fuel Oil	Waste Oil	Natural Gas	No. 2 Fuel Oil	Waste Oil	
PM*	0.394	0.394	0.394	196.79	196.79	196.79	196.79
PM10*	0.165	0.165	0.165	82.29	82.29	82.29	82.29
PM2.5*	0.181	0.181	0.181	90.60	90.60	90.60	90.60
SO2**	0.003	0.011	0.058	1.70	5.50	29.00	29.00
NOx**	0.026	0.055	0.055	13.00	27.50	27.50	27.50
VOC**	0.032	0.032	0.032	16.00	16.00	16.00	16.00
CO***	0.130	0.130	0.130	65.00	65.00	65.00	65.00
Hazardous Air Pollutant							
HCl			2.10E-04			0.11	0.11
Antimony	1.80E-07	1.80E-07	1.80E-07	9.00E-05	9.00E-05	9.00E-05	9.00E-05
Arsenic	5.60E-07	5.60E-07	5.60E-07	2.80E-04	2.80E-04	2.80E-04	2.80E-04
Beryllium	negl	negl	negl	negl	negl	negl	0.00E+00
Cadmium	4.10E-07	4.10E-07	4.10E-07	2.05E-04	2.05E-04	2.05E-04	2.05E-04
Chromium	5.50E-06	5.50E-06	5.50E-06	2.75E-03	2.75E-03	2.75E-03	2.75E-03
Cobalt	2.60E-08	2.60E-08	2.60E-08	1.30E-05	1.30E-05	1.30E-05	1.30E-05
Lead	6.20E-07	1.50E-05	1.50E-05	3.10E-04	7.50E-03	7.50E-03	7.50E-03
Manganese	7.70E-06	7.70E-06	7.70E-06	3.85E-03	3.85E-03	3.85E-03	3.85E-03
Mercury	2.40E-07	2.60E-06	2.60E-06	1.20E-04	1.30E-03	1.30E-03	1.30E-03
Nickel	6.30E-05	6.30E-05	6.30E-05	3.15E-02	3.15E-02	3.15E-02	3.15E-02
Selenium	3.50E-07	3.50E-07	3.50E-07	1.75E-04	1.75E-04	1.75E-04	1.75E-04
2,2,4 Trimethylpentane	4.00E-05	4.00E-05	4.00E-05	2.00E-02	2.00E-02	2.00E-02	2.00E-02
Acetaldehyde			1.30E-03			0.65	0.65
Acrolein			2.60E-05			1.30E-02	1.30E-02
Benzene	3.90E-04	3.90E-04	3.90E-04	0.20	0.20	0.20	0.20
Ethylbenzene	2.40E-04	2.40E-04	2.40E-04	0.12	0.12	0.12	0.12
Formaldehyde	3.10E-03	3.10E-03	3.10E-03	1.55	1.55	1.55	1.55
Hexane	9.20E-04	9.20E-04	9.20E-04	0.46	0.46	0.46	0.46
Methyl chloroform	4.80E-05	4.80E-05	4.80E-05	0.02	0.02	0.02	0.02
MEK			2.00E-05			0.01	0.01
Propionaldehyde			1.30E-04			0.07	0.07
Quinone			1.60E-04			0.08	0.08
Toluene	1.50E-04	2.90E-03	2.90E-03	0.08	1.45	1.45	1.45
Total PAH Haps	1.90E-04	8.80E-04	8.80E-04	0.10	0.44	0.44	0.44
Xylene	2.00E-04	2.00E-04	2.00E-04	0.10	0.10	0.10	0.10
				Total HAPs			5.33
				Worst Single HAP			1.55 (formaldehyde)

Methodology

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

Emission Factors from AP-42 Chapter 11.1 (dated 3/04), Tables 11.1-3, 11.1-4, 11.1-7, 11.1-8, 11.1-10, and 11.1-12

Natural gas, No. 2 fuel oil, and waste oil represent the worst possible emissions scenario. AP-42 did not provide emission factors for any other fuels.

* PM, PM10, and PM2.5 AP-42 emission factors based on drum mix dryer fired with natural gas, propane, fuel oil, and waste oil. According to AP-42 fuel type does not significantly effect PM, PM10, and PM2.5 emissions.

** SO2, NOx, and VOC AP-42 emission factors are for natural gas, No. 2 fuel oil, and waste oil only.

*** CO AP-42 emission factor determined by combining data from drum mix dryer fired with natural gas, No. 6 fuel oil, and No. 2 fuel oil to develop single CO emission factor.

**** The source will limit the combined SO2 emissions from the dryer mixer burner, hot oil heater, and slag processing and the combined NOx emissions from the dryer mixer burner, and hot oil heater such that the SO2 and NOx emissions do not exceed 99.0 tons per year, each. Compliance with these limits will be demonstrated using equations.

***** The source will limit the combined VOC emissions from the dryer/mixer process, hot oil heaters, asphalt load-out, silo filling, on-site yard, and cold mix asphalt production such that the VOC emissions do not exceed 24.9 tons per year. Compliance will be determined using an equation.

Abbreviations

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

HAP = Hazardous Air Pollutant
PAH = Polyaromatic Hydrocarbon

**Appendix A.2: Limited Emissions Summary
Greenhouse Gas (CO₂e) Emissions from the
Drum-Mix Plant (Dryer/Mixer) Process Emissions**

Company Name: Rieth-Riley Construction Co., Inc.
Current Source Location: 3425 O'Farrell Road, Lafayette, IN 47904
Permit Number: 157-28338-05267
Revision Number: 157-31522-05267
Reviewer: Hannah L. Desrosiers
Date Received: 2/17/2012

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

Maximum Hourly Asphalt Production = ton/hr
 Annual Asphalt Production Limitation = ton/yr

Criteria Pollutant	Emission Factor (lb/ton) Drum-Mix Plant (dryer/mixer)			Global Warming Potentials (GWP)	Limited Potential to Emit (tons/yr) Drum-Mix Plant (dryer/mixer)			CO ₂ e for Worst Case Fuel ¹ (tons/yr)
	Natural Gas	No. 2 Fuel Oil	Waste Oil		Natural Gas	No. 2 Fuel Oil	Waste Oil	
CO ₂	33	33	33	1	16,500.00	16,500.00	16,500.00	16,626.00
CH ₄	0.0120	0.0120	0.0120	21	6.00	6.00	6.00	
N ₂ O				310	0	0	0	
Total					16,506.00	16,506.00	16,506.00	
CO ₂ e Equivalent Emissions (tons/yr)					16,626.00	16,626.00	16,626.00	

Methodology

¹The source will limit the combined CO₂e emissions from the dryer/mixer and hot oil heaters such that the CO₂e emissions do not exceed 99,000 tons per year. Compliance will be determined using an equation.

Emission Factors from AP-42 Chapter 11.1 (dated 3/04), Tables 11.1-7 and 11.1-8

There are no emission factors for N₂O available in either the 40 CFR 98, Subpart C or AP-42 Chapter 11.1. Therefore, it is assumed that there are no N₂O emission anticipated from this process.

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

Natural gas, No. 2 fuel oil, and waste oil represent the worst possible emissions scenario. AP-42 did not provide emission factors for any other fuels.

Limited CO₂e Emissions (tons/yr) = CO₂ Potential Emission of "worst case" fuel (ton/yr) x CO₂ GWP (1) + CH₄ Potential Emission of "worst case" fuel (ton/yr) x CH₄ GWP (21) + N₂O Potential Emission of "worst case" fuel (ton/yr) x N₂O GWP (310).

Abbreviations

CO₂ = Carbon Dioxide

CH₄ = Methane

N₂O = Nitrogen Dioxide

PTE = Potential to Emit

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

Company Name: Rieth-Riley Construction Co., Inc.
Current Source Location: 3425 O'Farrell Road, Lafayette, IN 47904
Permit Number: 157-28338-05267
Revision Number: 157-31522-05267
Reviewer: Hannah L. Desrosiers
Date Received: 2/17/2012

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

Limited Blast Furnace Slag Usage = ton/yr BF Slag SO2 Limitation = % sulfur
 Limited Annual Steel Slag Usage = ton/yr St Slag SO2 Limitation = % sulfur

Type of Slag	SO2 Emission Factor (lb/ton)*	Limited Potential to Emit SO2 (tons/yr)
Blast Furnace Slag	0.7400	see note***
Steel Slag	0.0014	see note***

Methodology

* Testing results for Slag, obtained January 9, 2009 from similar operations at Rieth-Riley Construction Co., Inc. facility located in Valparaiso, IN (permit #127-27075-05241), produced an Emission Factor of 0.54 lb/ton from slag containing 1.10% sulfur content. The source has requested a safety factor of 0.20 lb/ton be added to the tested value for use at this location to allow for a sulfur content up to 1.5%. When the 30 day calendar month average sulfur content is less than or equal to 1.11% by weight, an emission factor of 0.5413 lb of SO2 per ton of slag will be used. When the 30 day calendar month average sulfur content is greater than 1.11% and less than or equal to 1.5% by weight, an emission factor of 0.74 lb of SO2 per ton of slag will be used.

** Testing results for steel slag, obtained June 2009 from E & B Paving, Inc. facility located in Huntington, IN. The testing results showed a steel slag emission factor of 0.0007 lb/ton from slag containing 0.33% sulfur content.

*** The source will limit the combined SO2 emissions from the dryer mixer burner, hot oil heater, and slag processing such that the SO2 emissions do not exceed 99.0 tons per year. Compliance with this limit will be demonstrated using an equation.

Limited Potential to Emit SO2 from Slag (tons/yr) = [(Limited Slag Usage (ton/yr)) * [Emission Factor (lb/ton)] * [ton/2000 lbs]

Abbreviations

SO2 = Sulfur Dioxide

**Appendix A.2: Limited Emissions Summary
Hot Oil Heater**

Fuel Combustion with Maximum Capacity < 100 MMBtu/hr

Company Name: Rieth-Riley Construction Co., Inc.
Current Source Location: 3425 O'Farrell Road, Lafayette, IN 47904
Permit Number: 157-28338-05267
Revision Number: 157-31522-05267
Reviewer: Hannah L. Desrosiers
Date Received: 2/17/2012

Maximum Hot Oil Heater Fuel Input Rate = 4.30 MMBtu/hr (2 units at 2.15 MMBtu/hr, each)
 Natural Gas Usage = 38 MMCF/yr
 No. 2 Fuel Oil Usage = 269,057 gal/yr, and 0.50 % sulfur

Unlimited/Uncontrolled Emissions

Criteria Pollutant	Emission Factor (units)		Unlimited/Uncontrolled Potential to Emit (tons/yr)		Worse Case Fuel (tons/yr)
	Hot Oil Heater		Hot Oil Heater		
	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)	
PM	1.9	2.0	0.036	0.269	0.27
PM10/PM2.5	7.6	3.3	0.143	0.444	0.44
SO2 ¹	0.6	71.0	0.011	9.552	9.55
Nox ¹	100	20.0	1.883	2.691	2.69
VOC ²	5.5	0.20	0.104	0.027	0.10
CO	84	5.0	1.582	0.673	1.58
Hazardous Air Pollutant					
Arsenic	2.0E-04	5.6E-04	3.8E-06	7.53E-05	7.5E-05
Beryllium	1.2E-05	4.2E-04	2.3E-07	5.65E-05	5.7E-05
Cadmium	1.1E-03	4.2E-04	2.1E-05	5.65E-05	5.7E-05
Chromium	1.4E-03	4.2E-04	2.6E-05	5.65E-05	5.7E-05
Cobalt	8.4E-05		1.6E-06		1.6E-06
Lead	5.0E-04	1.3E-03	9.4E-06	1.70E-04	1.7E-04
Manganese	3.8E-04	8.4E-04	7.2E-06	1.13E-04	1.1E-04
Mercury	2.6E-04	4.2E-04	4.9E-06	5.65E-05	5.7E-05
Nickel	2.1E-03	4.2E-04	4.0E-05	5.65E-05	5.7E-05
Selenium	2.4E-05	2.1E-03	4.5E-07	2.83E-04	2.8E-04
Benzene	2.1E-03		4.0E-05		4.0E-05
Dichlorobenzene	1.2E-03		2.3E-05		2.3E-05
Ethylbenzene					0
Formaldehyde	7.5E-02	6.10E-02	1.4E-03	8.21E-03	0.008
Hexane	1.8E+00		0.03		0.034
Phenol					0
Toluene	3.4E-03		6.4E-05		6.4E-05
Total PAH Haps	negl		negl		0
Polycyclic Organic Matter		3.30E-03		4.44E-04	4.4E-04
Total HAPs =			3.6E-02	9.6E-03	0.044

Methodology

¹ The source will limit the combined SO2 emissions from the dryer mixer burner, hot oil heater, and slag processing and the combined NOx emissions from the dryer mixer burner, and hot oil heater such that the SO2 and NOx emissions do not exceed 99.0 tons per year, each.

² The source will limit the combined VOC emissions from the dryer/mixer process, hot oil heaters, asphalt load-out, silo filling, on-site yard, and cold mix asphalt production such that the VOC emissions do not exceed 24.9 tons per year.

Equivalent Natural Gas Usage (MMCF/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 MMCF/1,000 MMBtu]

Equivalent Oil Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.140 MMBtu]

Natural Gas: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Natural Gas Usage (MMCF/yr)] * [Emission Factor (lb/MMCF)] * [ton/2000 lbs]

All Other Fuels: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Fuel Usage (gals/yr)] * [Emission Factor (lb/kgal)] * [kgal/1000 gal] * [ton/2000 lbs]

Sources of AP-42 Emission Factors for fuel combustion:

Natural Gas : AP-42 Chapter 1.4 (dated 7/98), Tables 1.4-1, 1.4-2, 1.4-3, and 1.4-4
 No. 2 Fuel Oil: AP-42 Chapter 1.3 (dated 5/10), Tables 1.3-1, 1.3-2, 1.3-3, 1.3-8, 1.3-9, 1.3-10, and 1.3-11

Abbreviations

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

**Appendix A.2: Limited Emissions Summary
Greenhouse Gas (CO₂e) Emissions from
Hot Oil Heater Fuel Combustion with Maximum Capacity < 100 MMBtu/hr**

Company Name: Rieth-Riley Construction Co., Inc.
Current Source Location: 3425 O'Farrell Road, Lafayette, IN 47904
Permit Number: 157-28338-05267
Revision Number: 157-31522-05267
Reviewer: Hannah L. Desrosiers
Date Received: 2/17/2012

Maximum Hot Oil Heater Fuel Input Rate = 4.30 MMBtu/hr
 Natural Gas Usage = 38 MMCF/yr
 No. 2 Fuel Oil Usage = 269,057 gal/yr, 0.50 % sulfur

Unlimited/Uncontrolled Emissions

Criteria Pollutant	Emission Factor (units)		Global Warming Potentials (GWP)	Unlimited/Uncontrolled Potential to Emit (tons/yr)	
	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)		Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)
CO ₂	120,161.84	22,501.41	1	2,263.13	3,027.08
CH ₄	2.49	0.91	21	0.047	1.23E-01
N ₂ O	2.20	0.26	310	0.041	3.50E-02
Total				2,263.22	3,027.24

Worse Case CO₂e Emissions (tons/yr)¹
3,040.50

CO ₂ e Equivalent Emissions (tons/yr)	2,276.96	3,040.50
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Methodology

¹The source will limit the combined CO₂e emissions from the dryer/mixer and hot oil heaters such that the CO₂e emissions do not exceed 99,000 tons per year. Compliance will be determined using an equation.

Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.

Sources of Emission Factors for fuel combustion: (Note: To form a conservative estimate, the "worst case" emission factors have been used.)

Natural Gas : Emission Factors for CO₂ and CH₄ from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/MMCF. Emission Factor for N₂O from AP-42 Chapter 1.4 (dated 7/98), Table 1.4-2

No. 2 Fuel Oil: Emission Factors for CO₂ and CH₄ from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/kgal. Emission Factor for N₂O from AP-42 Chapter 1.3 (dated 5/10), Table 1.3-8

Emission Factor (EF) Conversions

Natural Gas: EF (lb/MMCF) = [EF (kg/MMBtu) * Conversion Factor (2.20462 lbs/kg) * Heating Value of Natural Gas (MMBtu/scf) * Conversion Factor (1,000,000 scf/MMCF)]

Fuel Oils: EF (lb/kgal) = [EF (kg/MMBtu) * Conversion Factor (2.20462 lbs/kg) * Heating Value of the Fuel Oil (MMBtu/gal) * Conversion Factor (1000 gal/kgal)]

Equivalent Natural Gas Usage (MMCF/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 MMCF/1,000 MMBtu]

Equivalent Oil Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.140 MMBtu]

Natural Gas: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Natural Gas Usage (MMCF/yr)] * [Emission Factor (lb/MMCF)] * [ton/2000 lbs]

All Other Fuels: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Fuel Usage (gals/yr)] * [Emission Factor (lb/kgal)] * [kgal/1000 gal] * [ton/2000 lbs]

Unlimited Potential to Emit CO₂e (tons/yr) = Unlimited Potential to Emit CO₂ of "worst case" fuel (ton/yr) x CO₂ GWP (1) + Unlimited Potential to Emit CH₄ of "worst case" fuel (ton/yr) x CH₄ GWP (21) + Unlimited Potential to Emit N₂O of "worst case" fuel (ton/yr) x N₂O GWP (310).

Abbreviations

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

Appendix A.2: Limited Emissions Summary
Reciprocating Internal Combustion Engines - Diesel Fuel
Output Rating (<=600 HP)

Company Name: Rieth-Riley Construction Co., Inc.
Current Source Location: 3425 O'Farrell Road, Lafayette, IN 47904
Permit Number: 157-28338-05267
Revision Number: 157-31522-05267
Reviewer: Hannah L. Desrosiers
Date Received: 2/17/2012

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

	Pollutant						
	PM ²	PM10 ²	direct PM2.5 ²	SO2	NOx	VOC	CO
Emission Factor in lb/hp-hr	0.0022	0.0022	0.0022	0.0021	0.0310	0.0025	0.0067
Emission Factor in lb/kgal ¹	43.07	43.07	43.07	40.13	606.85	49.22	130.77
Limited Emission in tons/yr	0.00	0.00	0.00	0.00	0.00	0.00	0.00

¹The AP-42 Chapter 3.3-1 emission factors in lb/hp-hr were converted to lb/kgal emission factors using an average brake specific fuel consumption of 7,000 Btu / hp-hr, diesel heating value of 19,300 Btu / lb, and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

¹Emission factor (lb/kgal) = AP-42 EF (lb/hp-hr) * 1/7,000 (hp-hr/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

²PM and PM2.5 emission factors are assumed to be equivalent to PM10 emission factors. No information was given regarding which method was used to determine the factor or the fraction of PM10 which is condensable.

Hazardous Air Pollutants (HAPs)

	Pollutant							Total PAH HAPs ³
	Benzene	Toluene	Xylene	1,3-Butadiene	Formaldehyde	Acetaldehyde	Acrolein	
Emission Factor in lb/MMBtu	9.33E-04	4.09E-04	2.85E-04	3.91E-05	1.18E-03	7.67E-04	9.25E-05	1.68E-04
Emission Factor in lb/kgal ⁴	1.28E-01	5.60E-02	3.91E-02	5.36E-03	1.62E-01	1.05E-01	1.27E-02	2.30E-02
Limited Emission in tons/yr	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

³PAH = Polyaromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)

⁴The AP-42 Chapter 3.3-1 emission factors in lb/MMBtu were converted to lb/kgal emission factors using an average diesel heating value of 19,300 Btu / lb and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

⁴Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) * 1/10⁶ (MMBtu/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

Limited Emission of Total HAPs (tons/yr)	0.00E+00
Limited Emission of Worst Case HAPs (tons/yr)	0.00E+00

Green House Gas Emissions (GHG)

	Pollutant		
	CO2 ⁵	CH4 ⁶	N2O ⁶
Emission Factor in lb/hp-hr	1.15	NA	NA
Emission Factor in kg/MMBtu	NA	0.003	0.0006
Emission Factor in lb/kgal	22,512.07	0.91	0.18
Limited Emission in tons/yr	0.00	0.000	0.000

⁵The AP-42 Chapter 3.3-1 emission factor in lb/hp-hr was converted to lb/kgal emission factor using an average brake specific fuel consumption of 7,000 Btu / hp-hr, diesel heating value of 19,300 Btu / lb, and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

⁵Emission factor (lb/kgal) = AP-42 EF (lb/hp-hr) * 1/7,000 (hp-hr/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

⁶The 40 CFR 98 Subpart C emission factors in kg/MMBtu were converted to lb/kgal emission factors using an average diesel heating value of 19,300 Btu / lb and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

⁶Emission factor (lb/kgal) = 40 CFR 98 EF (kg/MMBtu) * 2.20462 (lb/kg) * 1/10⁶ (MMBtu/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

Summed Limited Emissions in tons/yr	0.00
CO2e Total in tons/yr	0.00

Methodology

Limited Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] * [Limited Hours Operated per Year]

Limited Diesel Fuel Usage (gal/yr) = Limited Throughput (hp-hr/yr) * 7000 (Btu/hp-hr) * 1/19300 (lb/Btu) * 1/7.1 (gal/lb)

Emission Factors are from AP42 (Supplement B 10/96), Tables 3.3-1 and 3.3-2 and have been converted to lb/kgal

CH4 and N2O Emission Factor from 40 CFR 98 Subpart C Table C-2 and have been converted to lb/kgal

Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.

Limited Emissions (tons/yr) = [Limited Diesel Fuel Usage (gal/yr) x Emission Factor (lb/kgal)] / (1,000 gal/kgal) / (2,000 lb/ton)

CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).

Appendix A.2: Limited Emissions Summary
Large Reciprocating Internal Combustion Engines - Diesel Fuel
Output Rating (>600 HP)

Company Name: Rieth-Riley Construction Co., Inc.
Current Source Location: 3425 O'Farrell Road, Lafayette, IN 47904
Permit Number: 157-28338-05267
Revision Number: 157-31522-05267
Reviewer: Hannah L. Desrosiers
Date Received: 2/17/2012

Output Horsepower Rating (hp)	0	Sulfur Content (S) of Fuel (% by weight)	0
Limited Hours Operated per Year	0		
Limited Throughput (hp-hr/yr)	0		
Limited Diesel Fuel Usage (gal/yr)	0		

	Pollutant						
	PM	PM10 ²	direct PM2.5 ²	SO2	NOx	VOC	CO
Emission Factor in lb/hp-hr	7.00E-04			0.00E+00 (.00809S)	2.40E-02	7.05E-04	5.50E-03
Emission Factor in lb/MMBtu		0.0573	0.0573				
Emission Factor in lb/kgal ¹	13.70	7.85	7.85	0.00	469.82	13.80	107.67
Limited Emission in tons/yr	0.00	0.00	0.00	0.00	0.00	0.00	0.00

¹The AP-42 Chapter 3.4-1 emission factors in lb/hp-hr were converted to lb/kgal emission factors using an average brake specific fuel consumption of 7,000 Btu / hp-hr, diesel heating value of 19,300 Btu / lb, and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

²Emission factor (lb/kgal) = AP-42 EF (lb/hp-hr) * 1/7,000 (hp-hr/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

²Emission factors in lb/kgal were converted from the AP-42 Chapter 3.4-1 emission factors in lb/MMBtu using an average diesel heating value of 19,300 Btu / lb and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

²Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) * 1/10⁶ (MMBtu/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

Hazardous Air Pollutants (HAPs)

	Pollutant						
	Benzene	Toluene	Xylene	Formaldehyde	Acetaldehyde	Acrolein	Total PAH HAPs ³
Emission Factor in lb/MMBtu	7.76E-04	2.81E-04	1.93E-04	7.89E-05	2.52E-05	7.88E-06	2.12E-04
Emission Factor in lb/kgal ⁴	1.06E-01	3.85E-02	2.64E-02	1.08E-02	3.45E-03	1.08E-03	2.91E-02
Limited Emission in tons/yr	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

³PAH = Polyaromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)

⁴Emission factors in lb/kgal were converted from the AP-42 Chapter 3.4-1 emission factors in lb/MMBtu using an average diesel heating value of 19,300 Btu / lb and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

⁴Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) * 1/10⁶ (MMBtu/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

Limited Emission of Total HAPs (tons/yr)	0.00E+00
Limited Emission of Worst Case HAPs (tons/yr)	0.00E+00

Green House Gas Emissions (GHG)

	Pollutant		
	CO2 ⁵	CH4 ^{5,6}	N2O ⁷
Emission Factor in lb/hp-hr	1.16	6.35E-05	NA
Emission Factor in kg/MMBtu	NA	NA	0.0006
Emission Factor in lb/kgal	22,707.83	1.24	0.18
Limited Emission in tons/yr	0.00	0.00	0.00

⁵The AP-42 Chapter 3.4-1 emission factors in lb/hp-hr were converted to lb/kgal emission factors using an average brake specific fuel consumption of 7,000 Btu / hp-hr, diesel heating value of 19,300 Btu / lb, and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

⁵Emission factor (lb/kgal) = AP-42 EF (lb/hp-hr) * 1/7,000 (hp-hr/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

⁶According to AP-42, Table 3.4-1, TOC (as CH4) is 9% methane by weight. As a result, the lb/hp-hr emission factor for TOC (as CH4) in AP-42 has been multiplied by 9% to determine the portion that is emitted as methane.

⁷The 40 CFR 98 Subpart C emission factors in kg/MMBtu were converted to lb/kgal emission factors using an average diesel heating value of 19,300 Btu / lb and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

⁷Emission factor (lb/kgal) = 40 CFR 98 EF (kg/MMBtu) * 2.20462 (lb/kg) * 1/10⁶ (MMBtu/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

Summed Potential Emissions in tons/yr	0.00
CO2e Total in tons/yr	0.00

Methodology

Limited Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] * [Limited Hours Operated per Year]

Limited Diesel Fuel Usage (gal/yr) = Limited Throughput (hp-hr/yr) * 7000 (Btu/hp-hr) * 1/19300 (lb/Btu) * 1/7.1 (gal/lb)

Emission Factors are from AP 42 (Supplement B 10/96) Tables 3.4-1, 3.4-2, 3.4-3, and 3.4-4 and have been converted to lb/kgal.

N2O Emission Factor from 40 CFR 98 Subpart C Table C-2 and have been converted to lb/kgal.

Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.

Limited Emissions (tons/yr) = [Limited Diesel Fuel Usage (gal/yr) x Emission Factor (lb/kgal)] / (1,000 gal/kgal) / (2,000 lb/ton)

CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O

Potential Emission ton/yr x N2O GWP (310).

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

Company Name: Rieth-Riley Construction Co., Inc.
Current Source Location: 3425 O'Farrell Road, Lafayette, IN 47904
Permit Number: 157-28338-05267
Revision Number: 157-31522-05267
Reviewer: Hannah L. Desrosiers
Date Received: 2/17/2012

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 =	1,000,000	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	0.26	0.29	NA	0.55
Organic PM	3.4E-04	2.5E-04	NA	0.17	0.127	NA	0.30
TOC	0.004	0.012	0.001	2.08	6.09	0.550	8.7
CO	0.001	0.001	3.5E-04	0.67	0.590	0.176	1.44

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

PM/HAPs	0.012	0.014	0	0.027
VOC/HAPs	0.031	0.077	0.008	0.116
non-VOC/HAPs	1.6E-04	1.6E-05	4.2E-05	2.2E-04
non-VOC/non-HAPs	0.15	0.09	0.04	0.28

Total VOCs	1.95	6.09	0.5	8.6
Total HAPs	0.04	0.09	0.008	0.14
Worst Single HAP				0.044
				(formaldehyde)

Methodology

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

** The source will limit the combined VOC emissions from the dryer/mixer process, hot oil heaters, asphalt load-out, silo filling, on-site yard, and cold mix asphalt production such that the VOC emissions do not exceed 24.9 tons per year. Compliance will be determined using an equation.

Abbreviations

TOC = Total Organic Compounds
 CO = Carbon Monoxide
 PM = Particulate Matter

PM10 = Particulate Matter (<10 um)
 PM2.5 = Particulate Matter (<2.5 um)
 HAP = Hazardous Air Pollutant

VOC = Volatile Organic Compound

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

Company Name: Rieth-Riley Construction Co., Inc.
Current Source Location: 3425 O'Farrell Road, Lafayette, IN 47904
Permit Number: 157-28338-05267
Revision Number: 157-31522-05267
Reviewer: Hannah L. Desrosiers
Date Received: 2/17/2012

Organic Particulate-Based Compounds (Table 11.1-15)

Pollutant	CASRN	Category	HAP Type	Source	Speciation Profile		Limited Potential to Emit (tons/yr)			
					Load-out and Onsite Yard (% by weight of Total Organic PM)	Silo Filling and Asphalt Storage Tank (% by weight of Total Organic PM)	Load-out	Silo Filling	Onsite Yard	Total
PAH HAPs										
Acenaphthene	83-32-9	PM/HAP	POM	Organic PM	0.26%	0.47%	4.4E-04	6.0E-04	NA	1.0E-03
Acenaphthylene	208-96-8	PM/HAP	POM	Organic PM	0.028%	0.014%	4.8E-05	1.8E-05	NA	6.6E-05
Anthracene	120-12-7	PM/HAP	POM	Organic PM	0.07%	0.13%	1.2E-04	1.7E-04	NA	2.8E-04
Benzo(a)anthracene	56-55-3	PM/HAP	POM	Organic PM	0.019%	0.056%	3.2E-05	7.1E-05	NA	1.0E-04
Benzo(b)fluoranthene	205-99-2	PM/HAP	POM	Organic PM	0.0076%	0	1.3E-05	0	NA	1.3E-05
Benzo(k)fluoranthene	207-08-9	PM/HAP	POM	Organic PM	0.0022%	0	3.8E-06	0	NA	3.8E-06
Benzo(g,h,i)perylene	191-24-2	PM/HAP	POM	Organic PM	0.0019%	0	3.2E-06	0	NA	3.2E-06
Benzo(a)pyrene	50-32-8	PM/HAP	POM	Organic PM	0.0023%	0	3.9E-06	0	NA	3.9E-06
Benzo(e)pyrene	192-97-2	PM/HAP	POM	Organic PM	0.0078%	0.0095%	1.3E-05	1.2E-05	NA	2.5E-05
Chrysene	218-01-9	PM/HAP	POM	Organic PM	0.103%	0.21%	1.8E-04	2.7E-04	NA	4.4E-04
Dibenz(a,h)anthracene	53-70-3	PM/HAP	POM	Organic PM	0.00037%	0	6.3E-07	0	NA	6.3E-07
Fluoranthene	206-44-0	PM/HAP	POM	Organic PM	0.05%	0.15%	8.5E-05	1.9E-04	NA	2.8E-04
Fluorene	86-73-7	PM/HAP	POM	Organic PM	0.77%	1.01%	1.3E-03	1.3E-03	NA	2.6E-03
Indeno(1,2,3-cd)pyrene	193-39-5	PM/HAP	POM	Organic PM	0.00047%	0	8.0E-07	0	NA	8.0E-07
2-Methylnaphthalene	91-57-6	PM/HAP	POM	Organic PM	2.38%	5.27%	4.1E-03	6.7E-03	NA	0.011
Naphthalene	91-20-3	PM/HAP	POM	Organic PM	1.25%	1.82%	2.1E-03	2.3E-03	NA	4.4E-03
Perylene	198-55-0	PM/HAP	POM	Organic PM	0.022%	0.03%	3.8E-05	3.8E-05	NA	7.6E-05
Phenanthrene	85-01-8	PM/HAP	POM	Organic PM	0.81%	1.80%	1.4E-03	2.3E-03	NA	3.7E-03
Pyrene	129-00-0	PM/HAP	POM	Organic PM	0.15%	0.44%	2.6E-04	5.6E-04	NA	8.1E-04
Total PAH HAPs							0.010	0.014	NA	0.025
Other semi-volatile HAPs										
Phenol		PM/HAP	---	Organic PM	1.18%	0	2.0E-03	0	0	2.0E-03

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

Methodology

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

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

Abbreviations

PM = Particulate Matter
HAP = Hazardous Air Pollutant
POM = Polycyclic Organic Matter

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

Organic Volatile-Based Compounds (Table 11.1-16)

Pollutant	CASRN	Category	HAP Type	Source	Speciation Profile		Limited Potential to Emit (tons/yr)			
					Load-out and Onsite Yard (% by weight of TOC)	Silo Filling and Asphalt Storage Tank (% by weight of TOC)	Load-out	Silo Filling	Onsite Yard	Total
VOC		VOC	---	TOC	94%	100%	1.95	6.09	0.52	8.57
non-VOC/non-HAPS										
Methane	74-82-8	non-VOC/non-HAP	---	TOC	6.50%	0.26%	1.4E-01	1.6E-02	3.6E-02	0.187
Acetone	67-64-1	non-VOC/non-HAP	---	TOC	0.046%	0.055%	9.6E-04	3.4E-03	2.5E-04	0.005
Ethylene	74-85-1	non-VOC/non-HAP	---	TOC	0.71%	1.10%	1.5E-02	6.7E-02	3.9E-03	0.086
Total non-VOC/non-HAPS					7.30%	1.40%	0.152	0.085	0.040	0.28
Volatile organic HAPs										
Benzene	71-43-2	VOC/HAP	---	TOC	0.052%	0.032%	1.1E-03	1.9E-03	2.9E-04	3.3E-03
Bromomethane	74-83-9	VOC/HAP	---	TOC	0.0096%	0.0049%	2.0E-04	3.0E-04	5.3E-05	5.5E-04
2-Butanone	78-93-3	VOC/HAP	---	TOC	0.049%	0.039%	1.0E-03	2.4E-03	2.7E-04	3.7E-03
Carbon Disulfide	75-15-0	VOC/HAP	---	TOC	0.013%	0.016%	2.7E-04	9.7E-04	7.2E-05	1.3E-03
Chloroethane	75-00-3	VOC/HAP	---	TOC	0.00021%	0.004%	4.4E-06	2.4E-04	1.2E-06	2.5E-04
Chloromethane	74-87-3	VOC/HAP	---	TOC	0.015%	0.023%	3.1E-04	1.4E-03	8.3E-05	1.8E-03
Cumene	92-82-8	VOC/HAP	---	TOC	0.11%	0	2.3E-03	0	6.1E-04	2.9E-03
Ethylbenzene	100-41-4	VOC/HAP	---	TOC	0.28%	0.038%	5.8E-03	2.3E-03	1.5E-03	0.010
Formaldehyde	50-00-0	VOC/HAP	---	TOC	0.088%	0.69%	1.8E-03	4.2E-02	4.8E-04	0.044
n-Hexane	100-54-3	VOC/HAP	---	TOC	0.15%	0.10%	3.1E-03	6.1E-03	8.3E-04	0.010
Isooctane	540-84-1	VOC/HAP	---	TOC	0.0018%	0.00031%	3.7E-05	1.9E-05	9.9E-06	6.6E-05
Methylene Chloride	75-09-2	non-VOC/HAP	---	TOC	0	0.00027%	0	1.6E-05	0	1.6E-05
MTBE	1634-04-4	VOC/HAP	---	TOC	0	0	0	0	0	0
Styrene	100-42-5	VOC/HAP	---	TOC	0.0073%	0.0054%	1.5E-04	3.3E-04	4.0E-05	5.2E-04
Tetrachloroethene	127-18-4	non-VOC/HAP	---	TOC	0.0077%	0	1.6E-04	0	4.2E-05	2.0E-04
Toluene	100-88-3	VOC/HAP	---	TOC	0.21%	0.062%	4.4E-03	3.8E-03	1.2E-03	0.009
1,1,1-Trichloroethane	71-55-6	VOC/HAP	---	TOC	0	0	0	0	0	0
Trichloroethene	79-01-6	VOC/HAP	---	TOC	0	0	0	0	0	0
Trichlorofluoromethane	75-69-4	VOC/HAP	---	TOC	0.0013%	0	2.7E-05	0	7.2E-06	3.4E-05
m-/p-Xylene	1330-20-7	VOC/HAP	---	TOC	0.41%	0.20%	8.5E-03	1.2E-02	2.3E-03	0.023
o-Xylene	95-47-6	VOC/HAP	---	TOC	0.08%	0.057%	1.7E-03	3.5E-03	4.4E-04	5.6E-03
Total volatile organic HAPs					1.50%	1.30%	0.031	0.079	0.008	0.119

Methodology

Limited Potential to Emit (tons/yr) = [Speciation Profile (%)] * [TOC (tons/yr)]
 Speciation Profiles from AP-42 Chapter 11.1 (dated 3/04), Tables 11.1-15 and 11.1-16

Abbreviations

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

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

Company Name: Rieth-Riley Construction Co., Inc.
Current Source Location: 3425 O'Farrell Road, Lafayette, IN 47904
Permit Number: 157-28338-05267
Revision Number: 157-31522-05267
Reviewer: Hannah L. Desrosiers
Date Received: 2/17/2012

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

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

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

Material	Silt Content (wt %)*	Emission Factor (lb/acre/day)	Maximum Anticipated Pile Size (acres)**	PTE of PM (tons/yr)	PTE of PM10/PM2.5 (tons/yr)
Sand	2.6	3.01	1.00	0.549	0.192
Limestone	1.6	1.85	1.30	0.439	0.154
RAP	0.5	0.58	1.00	0.106	0.037
Gravel	1.6	1.85	0.05	0.017	0.006
Slag	3.8	4.40	0.75	0.602	0.211
Totals				1.71	0.60

Methodology

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

PTE of PM10/PM2.5 (tons/yr) = (Potential PM Emissions (tons/yr)) * 35%

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

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

PM2.5 = PM10

Abbreviations

PM = Particulate Matter

PM2.5 = Particulate Matter (<2.5 um)

PM10 = Particulate Matter (<10 um)

PTE = Potential to Emit

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

Company Name: Rieth-Riley Construction Co., Inc.
Current Source Location: 3425 O'Farrell Road, Lafayette, IN 47904
Permit Number: 157-28338-05267
Revision Number: 157-31522-05267
Reviewer: Hannah L. Desrosiers
Date Received: 2/17/2012

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

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

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

where: E_f = Emission factor (lb/ton)

k (PM) = 0.74 = particle size multiplier (0.74 assumed for aerodynamic diameter <=100 um)
 k (PM10) = 0.35 = particle size multiplier (0.35 assumed for aerodynamic diameter <=10 um)
 k (PM2.5) = 0.053 = particle size multiplier (0.053 assumed for aerodynamic diameter <=2.5 um)
 U = 10.2 = worst case annual mean wind speed (Source: NOAA, 2006*)
 M = 4.0 = material % moisture content of aggregate (Source: AP-42 Section 11.1.1.1)

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

Annual Asphalt Production Limitation = 1,000,000 tons/yr
 Percent Asphalt Cement/Binder (weight %) = 5.0%
 Maximum Material Handling Throughput = 950,000 tons/yr

Type of Activity	Limited PTE of PM (tons/yr)	Limited PTE of PM10 (tons/yr)	Limited PTE of PM2.5 (tons/yr)
Truck unloading of materials into storage piles	1.08	0.51	0.08
Front-end loader dumping of materials into feeder bins	1.08	0.51	0.08
Conveyor dropping material into dryer/mixer or batch tower	1.08	0.51	0.08
Total (tons/yr)	3.23	1.53	0.23

Methodology

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

Material Screening and Conveying (AP-42 Section 19.2.2)

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

Operation	Uncontrolled Emission Factor for PM (lbs/ton)*	Uncontrolled Emission Factor for PM10 (lbs/ton)*	Limited PTE of PM (tons/yr)	Limited PTE of PM10/PM2.5 (tons/yr)**
Crushing	0.0054	0.0024	2.57	1.14
Screening	0.025	0.0087	11.88	4.13
Conveying	0.003	0.0011	1.43	0.52
Limited Potential to Emit (tons/yr) =			15.87	5.80

Methodology

Maximum Material Handling Throughput (tons/yr) = [Annual Asphalt Production Limitation (tons/yr)] * [1 - Percent Asphalt Cement/Binder (weight %)]
 Limited Potential to Emit (tons/yr) = [Maximum Material Handling Throughput (tons/yr)] * [Emission Factor (lb/ton)] * [ton/2000 lbs]
 Raw materials may include stone/gravel, slag, and recycled asphalt pavement (RAP)
 Emission Factors from AP-42 Chapter 11.19.2 (dated 8/04), Table 11.19.2-2
 *Uncontrolled emissions factors for PM/PM10 represent tertiary crushing of stone with moisture content ranging from 0.21 to 1.3 percent by weight (Table 11.19.2-2). The bulk moisture content of aggregate in the storage piles at a hot mix asphalt production plant typically stabilizes between 3 to 5 percent by weight (Source: AP-42 Section 11.1.1.1).
 **Assumes PM10 = PM2.5

Abbreviations

PM = Particulate Matter
 PM10 = Particulate Matter (<10 um)
 PM2.5 = Particulate Matter (<2.5 um)
 PTE = Potential to Emit

Appendix A.2: Limited Emissions Summary
Unpaved Roads

Company Name: Rieth-Riley Construction Co., Inc.
Current Source Location: 3425 O'Farrell Road, Lafayette, IN 47904
Permit Number: 157-28338-05267
Revision Number: 157-31522-05267
Reviewer: Hannah L. Desrosiers
Date Received: 2/17/2012

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	1,000,000	tons/yr
Percent Asphalt Cement/Binder (weight %)	5.0%	
Maximum Material Handling Throughput	950,000	tons/yr
Maximum Asphalt Cement/Binder Throughput	50,000	tons/yr
No. 2 Fuel Oil Limitation	2,519,675	gallons/yr

Process	Vehicle Type	Maximum Weight of Vehicle (tons)	Maximum Weight of Load (tons)	Maximum Weight of Vehicle and Load (tons/trip)	Maximum trips per year (trip/yr)	Total Weight driven per year (ton/yr)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	17.0	22.4	39.4	4.2E+04	1.7E+06	300	0.057	2409.7
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	17.0	0	17.0	4.2E+04	7.2E+05	300	0.057	2409.7
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	12.0	36.0	48.0	1.4E+03	6.7E+04	0	0	0
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.0	1.4E+03	1.7E+04	0	0	0
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	12.0	32.0	44.0	2.7E+02	1.2E+04	0	0	0
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.0	2.7E+02	3.2E+03	0	0	0
Aggregate/RAP Loader Full	Front-end loader (3 CY)	15.0	4.2	19.2	2.3E+05	4.3E+06	300	0.057	12851.7
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	15.0	0	15.0	2.3E+05	3.4E+06	300	0.057	12851.7
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	17.0	24.0	41.0	4.2E+04	1.7E+06	0	0	0
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	17.0	0	17.0	4.2E+04	7.1E+05	0	0	0
Total					6.2E+05	1.3E+07			3.1E+04

Average Vehicle Weight Per Trip = 20.3 tons/trip
Average Miles Per Trip = 0.049 miles/trip

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

	PM	PM10	PM2.5	
where k =	4.9	1.5	0.15	lb/mi = particle size multiplier (AP-42 Table 13.2.2-2 for Industrial Roads)
s =	4.8	4.8	4.8	% = mean % silt content of unpaved roads (AP-42 Table 13.2.2-3 Sand/Gravel Processing Plant Road)
a =	0.7	0.9	0.9	= constant (AP-42 Table 13.2.2-2)
W =	20.3	20.3	20.3	tons = average vehicle weight (provided by source)
b =	0.45	0.45	0.45	= constant (AP-42 Table 13.2.2-2)

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

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

	PM	PM10	PM2.5	
Unmitigated Emission Factor, E_f	6.10	1.55	0.16	lb/mile
Mitigated Emission Factor, E_{ext}	4.01	1.02	0.10	lb/mile
Dust Control Efficiency =	50%	50%	50%	(pursuant to control measures outlined in fugitive dust control plan)

Process	Vehicle Type	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	7.34	1.87	0.19	4.83	1.23	0.12	2.41	0.62	0.06
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	7.34	1.87	0.19	4.83	1.23	0.12	2.41	0.62	0.06
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	0	0	0	0	0	0	0	0	0
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	0	0	0	0	0	0	0	0	0
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	0	0	0	0	0	0	0	0	0
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	0	0	0	0	0	0	0	0	0
Aggregate/RAP Loader Full	Front-end loader (3 CY)	39.17	9.98	1.00	25.75	6.56	0.66	12.88	3.28	0.33
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	39.17	9.98	1.00	25.75	6.56	0.66	12.88	3.28	0.33
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	0	0	0	0	0	0	0	0	0
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	0	0	0	0	0	0	0	0	0
Totals		93.02	23.71	2.37	61.16	15.59	1.56	30.58	7.79	0.78

Methodology

Maximum Material Handling Throughput = [Annual Asphalt Production Limitation (tons/yr)] * [1 - Percent Asphalt Cement/Binder (weight %)]
Maximum Asphalt Cement/Binder Throughput = [Annual Asphalt Production Limitation (tons/yr)] * [Percent Asphalt Cement/Binder (weight %)]
Maximum Weight of Vehicle and Load (tons/trip) = [Maximum Weight of Vehicle (tons/trip)] + [Maximum Weight of Load (tons/trip)]
Maximum trips per year (trip/yr) = [Throughput (tons/yr)] / [Maximum Weight of Load (tons/trip)]
Total Weight driven per year (ton/yr) = [Maximum Weight of Vehicle and Load (tons/trip)] * [Maximum trips per year (trip/yr)]
Maximum one-way distance (mi/trip) = [Maximum one-way distance (feet/trip)] / [5280 ft/mile]
Maximum one-way miles (miles/yr) = [Maximum trips per year (trip/yr)] * [Maximum one-way distance (mi/trip)]
Average Vehicle Weight Per Trip (ton/trip) = SUM[Total Weight driven per year (ton/yr)] / SUM[Maximum trips per year (trip/yr)]
Average Miles Per Trip (miles/trip) = SUM[Maximum one-way miles (miles/yr)] / SUM[Maximum trips per year (trip/yr)]
Unmitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Unmitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
Mitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Mitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
Controlled PTE (tons/yr) = (Mitigated PTE (tons/yr)) * (1 - Dust Control Efficiency)

Abbreviations

PM = Particulate Matter PM10 = Particulate Matter (<10 um) PM2.5 = Particulate Matter (<2.5 um) PM2.5 = PM10 PTE = Potential to Emit

Appendix A.2: Limited Emissions Summary
Paved Roads
Limited Emissions

Company Name: Rieth-Riley Construction Co., Inc.
Current Source Location: 3425 O'Farrell Road, Lafayette, IN 47904
Permit Number: 157-28338-05267
Revision Number: 157-31522-05267
Reviewer: Hannah L. Desrosiers
Date Received: 2/17/2012

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	=	1,000,000	tons/yr
Percent Asphalt Cement/Binder (weight %)	=	5.0%	
Maximum Material Handling Throughput	=	950,000	tons/yr
Maximum Asphalt Cement/Binder Throughput	=	50,000	tons/yr
No. 2 Fuel Oil Limitation	=	2,519,675	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 (trips/yr)	Total Weight driven per day (tons/yr)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one way miles (miles/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	17.0	22.4	39.40	4.2E+04	1.7E+06	1,800	0.341	14458.2
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	17.0	0	17.00	4.2E+04	7.2E+05	1,800	0.341	14458.2
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	12.0	36.0	48.00	1.4E+03	6.7E+04	1,800	0.341	473.5
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.00	1.4E+03	1.7E+04	1,800	0.341	473.5
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	12.0	32.0	44.00	2.7E+02	1.2E+04	1,800	0.341	90.7
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.00	2.7E+02	3.2E+03	1,800	0.341	90.7
Aggregate/RAP Loader Full	Front-end loader (3 CY)	15.0	4.2	19.20	2.3E+05	4.3E+06	0	0	0
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	15.0	0	15.00	2.3E+05	3.4E+06	0	0	0
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	17.0	24.0	41.00	4.2E+04	1.7E+06	1,800	0.341	14204.5
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	17.0	0	17.00	4.2E+04	7.1E+05	1,800	0.341	14204.5
Total					6.2E+05	1.3E+07			5.8E+04

Average Vehicle Weight Per Trip	=	20.3	tons/trip
Average Miles Per Trip	=	0.94	miles/trip

Unmitigated Emission Factor, $E_f = [k * (sL)^{0.91} * (W)^{1.02}]$ (Equation 1 from AP-42 13.2.1)

	PM	PM10	PM2.5	
where k =	0.011	0.0022	0.00054	lb/mi = particle size multiplier (AP-42 Table 13.2.1-1)
W =	20.3	20.3	20.3	tons = average vehicle weight (provided by source)
sL =	0.6	0.6	0.6	g/m ² = Ubiquitous Baseline Silt Loading Values of paved roads (Table 13.2.1-3 for summer months)

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

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

	PM	PM10	PM2.5	
Unmitigated Emission Factor, E_f	0.15	0.03	0.01	lb/mile
Mitigated Emission Factor, E_{ext}	0.14	0.03	0.01	lb/mile
Dust Control Efficiency =	50%	50%	50%	(pursuant to control measures outlined in fugitive dust control plan)

Process	Vehicle Type	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	1.08	0.22	0.05	0.98	0.20	0.05	0.49	0.10	0.02
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	1.08	0.22	0.05	0.98	0.20	0.05	0.49	0.10	0.02
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	0.035	0.007	1.7E-03	0.032	0.006	1.6E-03	0.016	3.2E-03	7.9E-04
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	0.035	0.007	1.7E-03	0.032	0.006	1.6E-03	0.016	3.2E-03	7.9E-04
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	6.7E-03	1.3E-03	3.3E-04	6.2E-03	1.2E-03	3.0E-04	3.1E-03	6.2E-04	1.5E-04
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	6.7E-03	1.3E-03	3.3E-04	6.2E-03	1.2E-03	3.0E-04	3.1E-03	6.2E-04	1.5E-04
Aggregate/RAP Loader Full	Front-end loader (3 CY)	0	0	0	0	0	0	0	0	0
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	0	0	0	0	0	0	0	0	0
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	1.06	0.21	0.05	0.97	0.19	0.05	0.48	0.10	0.02
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	1.06	0.21	0.05	0.97	0.19	0.05	0.48	0.10	0.02
Totals		4.35	0.87	0.21	3.97	0.79	0.20	1.99	0.40	0.10

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 (trips/yr) = [Throughput (tons/yr)] / [Maximum Weight of Load (tons/trip)]
 Total Weight driven per year (tons/yr) = [Maximum Weight of Vehicle and Load (tons/trip)] * [Maximum trips per year (trips/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 (trips/yr)] * [Maximum one-way distance (mi/trip)]
 Average Vehicle Weight Per Trip (ton/trip) = SUM[Total Weight driven per year (tons/yr)] / SUM[Maximum trips per year (trips/yr)]
 Average Miles Per Trip (miles/trip) = SUM[Maximum one-way miles (miles/yr)] / SUM[Maximum trips per year (trips/yr)]
 Unmitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Unmitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
 Mitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Mitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
 Controlled PTE (tons/yr) = (Mitigated PTE (tons/yr)) * (1 - Dust Control Efficiency)

Abbreviations

PM = Particulate Matter PM10 = Particulate Matter (<10 um) PM2.5 = Particulate Matter (<2.5 um) PM2.5 = PM10 PTE = Potential to Emit

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

Company Name: Rieth-Riley Construction Co., Inc.
Current Source Location: 3425 O'Farrell Road, Lafayette, IN 47904
Permit Number: 157-28338-05267
Revision Number: 157-31522-05267
Reviewer: Hannah L. Desrosiers
Date Received: 2/17/2012

The following calculations determine the amount of VOC and HAP emissions created from volatilization of solvent used as diluent in the liquid binder for cold mix asphalt production

Limited VOC Emissions from the Sum of the Liquid Binders** = 24.90 tons/yr

Volatile Organic Compounds

	Maximum weight % of VOC solvent in binder	Weight % VOC solvent in binder that evaporates	VOC Solvent Usage Limitation (tons/yr)	Limited PTE of VOC (tons/yr)	Liquid Binder Adjustment Ratio
Cut back asphalt rapid cure (assuming gasoline or naphtha solvent)	25.3%	95.0%	26.21	24.90	1.053
Cut back asphalt medium cure (assuming kerosene solvent)	28.6%	70.0%	35.57	24.90	1.429
Cut back asphalt slow cure (assuming fuel oil solvent)	20.0%	25.0%	99.60	24.90	4.000
Emulsified asphalt with solvent (assuming water, emulsifying agent, and 15% fuel oil solvent)	15.0%	46.4%	53.66	24.90	2.155
Other asphalt with solvent binder	25.9%	2.5%	996.00	24.90	40.0
Worst Case Limited PTE of VOC =				24.90	

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) =	6.49
Limited PTE of Single HAP (tons/yr) =	2.24 Xylenes

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

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

Methodology

Limited PTE of VOC (tons/yr) = [Weight % VOC solvent in binder that evaporates] * [VOC Solvent Usage Limitation (tons/yr)]
 Limited PTE of Total HAPs (tons/yr) = [Worst Case Total HAP Content of VOC solvent (weight %)] * [Worst Case Limited PTE of VOC (tons/yr)]
 Limited PTE of Single HAP (tons/yr) = [Worst Case Single HAP Content of VOC solvent (weight %)] * [Worst Case Limited PTE of VOC (tons/yr)]

*Source: Petroleum Liquids. Potter, T.L. and K.E. Simmons. 1998. Total Petroleum Hydrocarbon Criteria Working Group Series, Volume 2. Composition of Petroleum Mixtures. The Association for Environmental Health and Science.

** The source will limit the combined VOC emissions from the dryer/mixer process, hot oil heaters, asphalt load-out, silo filling, on-site yard, and cold mix asphalt production such that the VOC emissions do not exceed 24.9 tons per year. Compliance will be determined using an equation.

Abbreviations

VOC = Volatile Organic Compounds
 PTE = Potential to Emit

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

Company Name: Rieth-Riley Construction Co., Inc.
Current Source Location: 3425 O'Farrell Road, Lafayette, IN 47904
Permit Number: 157-28338-05267
Revision Number: 157-31522-05267
Reviewer: Hannah L. Desrosiers
Date Received: 2/17/2012

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

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

$$\begin{aligned} \text{Gasoline Throughput} &= 3.6 \text{ gallons/day} \\ &= 1.3 \text{ kgal/yr} \end{aligned}$$

Volatile Organic Compounds

Emission Source	Emission Factor (lb/kgal of throughput)	PTE of VOC (tons/yr)*
Filling storage tank (balanced submerged filling)	0.3	1.97E-04
Tank breathing and emptying	1.0	6.57E-04
Vehicle refueling (displaced losses - controlled)	1.1	7.23E-04
Spillage	0.7	4.60E-04
Total		2.04E-03

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) =	5.31E-04	
Limited PTE of Single HAP (tons/yr) =	1.83E-04	Xylenes

Methodology

The gasoline throughput was provided by the source.

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

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

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

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

*Source: Petroleum Liquids. Potter, T.L. and K.E. Simmons. 1998. Total Petroleum Hydrocarbon Criteria Working Group Series, Volume 2. Composition of Petroleum Mixtures. The Association for Environmental Health and Science.

Abbreviations

VOC = Volatile Organic Compounds

PTE = Potential to Emit



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

Mitchell E. Daniels Jr.
Governor

Thomas W. Easterly
Commissioner

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

SENT VIA U.S. MAIL: CONFIRMED DELIVERY AND SIGNATURE REQUESTED

TO: John Berscheit
Rieth Riley Construction
POB 477
Goshen, IN 46527

DATE: May 24, 2012

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

SUBJECT: Final Decision
Title V
157-31522-05267

Enclosed is the final decision and supporting materials for the air permit application referenced above. Please note that this packet contains the original, signed, permit documents.

The final decision is being sent to you because our records indicate that you are the contact person for this application. However, if you are not the appropriate person within your company to receive this document, please forward it to the correct person.

A copy of the final decision and supporting materials has also been sent via standard mail to:
OAQ Permits Branch Interested Parties List

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

Final Applicant Cover letter.dot 11/30/07



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

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TO: Tippecanoe County Public Library

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

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

Applicant Name: Rieth Riley Construction
Permit Number: 157-31522-05267

You previously received information to make available to the public during the public comment period of a draft permit. Enclosed is a copy of the final decision and supporting materials for the same project. Please place the enclosed information along with the information you previously received. To ensure that your patrons have ample opportunity to review the enclosed permit, **we ask that you retain this document for at least 60 days.**

The applicant is responsible for placing a copy of the application in your library. If the permit application is not on file, or if you have any questions concerning this public review process, please contact Joanne Smiddie-Brush, OAQ Permits Administration Section at 1-800-451-6027, extension 3-0185.

Enclosures
Final Library.dot 11/30/07

Mail Code 61-53

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2		John Berscheid Tech Svcs Mgr Rieth Riley Construction Company, Inc. PO Box 477 Goshen IN 46527-0477 (RO CAATS)										
3		Tippecanoe County Commissioners 20 N 3rd St, County Office Building Lafayette IN 47901 (Local Official)										
4		Tippecanoe County Health Department 20 N. 3rd St. Lafayette IN 47901-1211 (Health Department)										
5		Lafayette City Council and Mayors Office 20 North 6th Street Lafayette IN 47901-1411 (Local Official)										
6		Ms. Dorothy Whicker 2700 Bonny Lane Lafayette IN 47904 (Affected Party)										
7		Ms. Geneva Werner 3212 Longlois Drive Lafayette IN 47904-1718 (Affected Party)										
8		Mrs. Phyllis Owens 3600 Cypress Lane Lafayette IN 47905 (Affected Party)										
9		Mr. Jerry White 1901 King Elder Ct West Lafayette IN 47906 (Affected Party)										
10		Ms. Rose Filley 5839 Lookout Drive West Lafayette IN 47906 (Affected Party)										
11		Mr. William Cramer 128 Seminole Drive West Lafayette IN 47906 (Affected Party)										
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