



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

Mitchell E. Daniels Jr.
Governor

Thomas W. Easterly
Commissioner

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

TO: Interested Parties / Applicant

DATE: August 10, 2012

RE: Corydon Stone & Asphalt Co./061-31157-05308

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

Notice of Decision: Approval - Effective Immediately

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

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

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

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

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

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

Enclosures
FNPER.dot12/03/07



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**Federally Enforceable State Operating Permit
Renewal
OFFICE OF AIR QUALITY**

**Corydon Stone & Asphalt Co.
1100 Quarry Rd. NW
Corydon, Indiana 47122**

(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.: F061-31157-05308	
Issued by:  Iryn Calilung, Section Chief Permits Branch Office of Air Quality	Issuance Date: August 10, 2012 Expiration Date: August 10, 2022

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SECTION A

SOURCE SUMMARY

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

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

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

Source Address:	1100 Quarry Rd. NW, Corydon, Indiana 47122
General Source Phone Number:	(812) 376-2436
SIC Code:	2951 (Asphalt Paving Mixtures and Blocks)
County Location:	Harrison
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Federally Enforceable State Operating Permit Program Minor Source, under PSD and Emission Offset Rules Minor Source, Section 112 of the Clean Air Act Not 1 of 28 Source Categories

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

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

- (a) One (1) drum-mix, hot-mix asphalt plant, identified as emission unit No. 1, constructed in 2007, with a maximum throughput capacity of 400 tons of raw material per hour, processing recycled asphalt pavement (RAP), blast furnace slag, steel slag, and asbestos-free recycled asphalt shingles in the aggregate mix, equipped with one (1) 100 million British thermal units (MMBtu) per hour dryer burner, firing natural gas, No. 2 fuel oil, No. 4 fuel oil, residual oil (No. 5 or No. 6 fuel oil), and waste oil, as available, equipped with a baghouse, identified as CD-1, for particulate control, and exhausting through stack S-1. This plant is also used to produce cold mix asphalt. No grinding of shingles occurs at this source.
- (b) Material conveying, handling, screening, and storage operations consisting of the following:
 - (1) Raw material storage piles, including:
 - (A) Sand storage piles, with a maximum anticipated pile size of 0.80 acre;
 - (B) Limestone storage piles, with a maximum anticipated pile size of 1.30 acres;
 - (C) Reclaimed asphalt pavement (RAP) storage pile(s), with a maximum anticipated pile size of 1.40 acres;
 - (D) Gravel storage piles, with a maximum anticipated pile size of 1.20 acre; and
 - (E) Recycled asphalt shingles pile(s), with a maximum anticipated pile size of 1.40 acre; and

- (F) Blast furnace and/or electric arc furnace steel mill slag storage piles, with a combined maximum anticipated pile size of 1.00 acre.
- (2) One (1) dry additive storage silo, identified as emission unit No. 6, constructed in 2007, with a maximum storage capacity of 38.25 tons, equipped with a baghouse, identified as CD-2, for particulate control, and exhausting through stack CD-2;
- (3) One (1) eight (8) compartment aggregate cold feed system;
- (4) One (1) dual deck scalping screen;
- (5) Two (2) belt conveyors;
- (7) One (1) recycled asphalt pavement (RAP) and recycled asphalt shingles (RAS) system, including:
 - (A) Two (2) feed bins for recycled asphalt pavement and recycled shingles.
 - (C) One (1) scalping screen; and
 - (B) Two (2) belt conveyors;
- (8) One (1) drag slat conveyor transporting hot-mixed asphalt to the asphalt storage silos; and
- (9) Three (3) hot-mixed asphalt storage silos, identified as SILO, constructed in 2006, with a maximum storage capacity of 300 tons, each, uncontrolled and exhausting to the atmosphere;

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

- (c) One (1) electrically powered portable crusher for processing reclaimed asphalt pavement (RAP), identified as CRUSHER, constructed in 2007, with a maximum throughput capacity of 150 tons of RAP per hour, uncontrolled and exhausting to the atmosphere.

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

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

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

This stationary source also includes the following insignificant activities:

- (a) One (1) natural gas-fired hot oil heater, identified as emission unit No. 2, constructed in 2007, with a maximum heat input capacity of 2.0 million British thermal units per hour (MMBtu/hr), uncontrolled and exhausting to stack S-2; [326 IAC 6-2]
- (b) Fuel oil-fired combustion sources with heat input equal to or less than two million (2,000,000) British thermal units per hour and firing fuel containing equal to or less than five-tenths percent (0.5%) sulfur by weight.
- (c) A petroleum fuel, other than gasoline, dispensing facility, having a storage capacity of less than or equal to ten thousand five hundred (10,500) gallons, and dispensing less than or equal to two hundred thousand (230,000) gallons per month;

- (d) Four (4) storage tanks, exhausting at stacks S-3, S-4, S-5, and S-6, including:
 - (1) Two (2) liquid asphalt cement storage tanks, identified as Tank-1a and Tank-1b, constructed in 2004, with a maximum storage capacity of 35,000 and 15,000 gallons, respectively;
 - (2) One (1) No. 4 fuel oil storage tank, identified as Tank-2a, constructed in 2004, with a maximum storage capacity of 20,000 gallons.
 - (3) One (1) No. 2 fuel oil storage tank, identified as Tank-2b, constructed in 2004, with a maximum storage capacity of 1,000 gallons; and
- (e) Natural gas pressure regulator vents, excluding venting at oil and gas production facilities;
- (f) Combustion source flame safety purging on startup;
- (g) 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;
- (h) Vessels storing lubricating oils, hydraulic oils, machining oils, and machining fluids;
- (i) Application of oils, greases, lubricants or other nonvolatile materials applied as temporary protective coatings;
- (j) Cleaners and solvents characterized as follows:
 - (1) having a vapor pressure equal to or less than 2 kPa; 15 mm Hg; or 0.3 psi measured at 38 °C (100 °F) or;
 - (2) having a vapor pressure equal to or less than 0.7 kPa; 5 mm Hg; or 0.1 psi measured at 20 °C (68 °F); the use of which for all cleaners and solvents combined does not exceed one hundred forty-five (145) gallons per twelve (12) months;
- (k) Closed loop heating and cooling systems;
- (l) Baghouse maintenance operations, including replacement or repair of electrostatic precipitators, bags in baghouses, and/or filters in other air filtration equipment;
- (m) Purging of gas lines and/or vessels related to routine maintenance and repair of buildings, structures, or vehicles at the source where air emissions from those activities would not be associated with any production process;
- (n) Process vessel degassing and cleaning to prepare for internal repairs.
- (o) Paved and unpaved roads and parking lots with public access. [326 IAC 6-5]

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

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

SECTION B GENERAL CONDITIONS

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

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

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

- (a) This permit, F061-31157-05308, is issued for a fixed term of ten (10) years from the issuance date of this permit, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3. Subsequent revisions, modifications, or amendments of this permit do not affect the expiration date of this permit.
- (b) If IDEM, OAQ, upon receiving a timely and complete renewal permit application, fails to issue or deny the permit renewal prior to the expiration date of this permit, this existing permit shall not expire and all terms and conditions shall continue in effect, until the renewal permit has been issued or denied.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

The Permittee shall implement the PMPs.

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

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

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

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

The Permittee shall implement the PMPs.

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

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

- (a) An emergency, as defined in 326 IAC 2-7-1(12), is not an affirmative defense for an action brought for noncompliance with a federal or state health-based emission limitation except as provided in 326 IAC 2-8-12.
- (b) An emergency, as defined in 326 IAC 2-7-1(12), constitutes an affirmative defense to an action brought for noncompliance with a health-based or technology-based emission limitation if the affirmative defense of an emergency is demonstrated through properly signed, contemporaneous operating logs or other relevant evidence that describe the following:

- (1) An emergency occurred and the Permittee can, to the extent possible, identify the causes of the emergency;
- (2) The permitted facility was at the time being properly operated;
- (3) During the period of an emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or other requirements in this permit;
- (4) For each emergency lasting one (1) hour or more, the Permittee notified IDEM, OAQ, or Southeast Regional Office, and Southwest Regional Office within four (4) daytime business hours after the beginning of the emergency, or after the emergency was discovered or reasonably should have been discovered;

Telephone Number: 1-800-451-6027 (ask for Office of Air Quality, Compliance and Enforcement Branch), or
Telephone Number: 317-233-0178 (ask for Office of Air Quality, Compliance and Enforcement Branch)
Facsimile Number: 317-233-6865
Southeast Regional Office phone: (812) 358-2027; fax: (812) 358-2058
Southwest Regional Office phone: (812) 380-2305; fax: (812) 380-2304.

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

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
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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 F061-31157-05308 and issued pursuant to permitting programs approved into the state implementation plan have been either:
 - (1) incorporated as originally stated,
 - (2) revised, or
 - (3) deleted.
- (b) All previous registrations and permits are superseded by this permit.

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

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

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

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

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

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

Request for renewal shall be submitted to:

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

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

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

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

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

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

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

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

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

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

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

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

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

and

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

SECTION C

SOURCE OPERATION CONDITIONS

Entire Source

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

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

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

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

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

(a) Pursuant to 326 IAC 2-8:

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

- (b) Pursuant to 326 IAC 2-2 (PSD), potential to emit particulate matter (PM) from the entire source shall be limited to less than two hundred fifty (250) tons per twelve (12) consecutive month period.
- (c) This condition shall include all emission points at this source including those that are insignificant as defined in 326 IAC 2-7-1(21). The source shall be allowed to add insignificant activities not already listed in this permit, provided that the source's potential to emit does not exceed the above specified limits.
- (d) Section D of this permit contains independently enforceable provisions to satisfy this requirement.

C.3 Opacity [326 IAC 5-1]

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

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

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

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

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

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

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

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

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

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

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

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

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

All required notifications shall be submitted to:

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

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

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

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

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

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

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

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

Compliance Requirements [326 IAC 2-1.1-11]

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

- (b) The address for report submittal is:

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

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

Stratospheric Ozone Protection

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

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

SECTION D.1

EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description [326 IAC 2-8-4(10)]: HMA Plant, RAP Crusher, HOH

- (a) One (1) drum-mix, hot-mix asphalt plant, identified as emission unit No. 1, constructed in 2007, with a maximum throughput capacity of 400 tons of raw material per hour, processing recycled asphalt pavement (RAP), blast furnace slag, steel slag, and asbestos-free recycled asphalt shingles in the aggregate mix, equipped with one (1) 100 million British thermal units (MMBtu) per hour dryer burner, firing natural gas, No. 2 fuel oil, No. 4 fuel oil, residual oil (No. 5 or No. 6 fuel oil) and waste oil, as available, equipped with a baghouse, identified as CD-1, for particulate control, and exhausting through stack S-1. This plant is also used to produce cold mix asphalt. No grinding of shingles occurs at this source.
- (b) Material conveying, handling, screening, and storage operations consisting of the following:
 - (1) Raw material storage piles, including:
 - (A) Sand storage piles, with a maximum anticipated pile size of 0.80 acre;
 - (B) Limestone storage piles, with a maximum anticipated pile size of 1.30 acres;
 - (C) Reclaimed asphalt pavement (RAP) storage pile(s), with a maximum anticipated pile size of 1.40 acres;
 - (D) Gravel storage piles, with a maximum anticipated pile size of 1.20 acre; and
 - (E) Recycled asphalt shingles pile(s), with a maximum anticipated pile size of 1.40 acre; and
 - (F) Blast furnace and/or electric arc furnace steel mill slag storage piles, with a combined maximum anticipated pile size of 1.00 acre.
 - (2) One (1) dry additive storage silo, identified as emission unit No. 6, constructed in 2007, with a maximum storage capacity of 38.25 tons, equipped with a baghouse, identified as CD-2, for particulate control, and exhausting through stack CD-2;
 - (3) One (1) eight (8) compartment aggregate cold feed system;
 - (4) One (1) dual deck scalping screen;
 - (5) Two (2) belt conveyors;
 - (7) One (1) recycled asphalt pavement (RAP) and recycled asphalt shingles (RAS) system, including:
 - (A) Two (2) feed bins for recycled asphalt pavement and recycled shingles.
 - (C) One (1) scalping screen; and
 - (B) Two (2) belt conveyors;
 - (8) One (1) drag slat conveyor transporting hot-mixed asphalt to the asphalt storage silos; and
 - (9) Three (3) hot-mixed asphalt storage silos, identified as SILO, constructed in 2006, with a maximum storage capacity of 300 tons, each, uncontrolled and exhausting to the atmosphere;

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

- (c) One (1) electrically powered portable crusher for processing reclaimed asphalt pavement (RAP), identified as CRUSHER, constructed in 2007, with a maximum throughput capacity of 150 tons of RAP per hour, uncontrolled and exhausting to the atmosphere.

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

Insignificant Activities: Boilers

- (a) One (1) natural gas-fired hot oil heater, identified as emission unit No. 2, constructed in 2007, with a maximum heat input capacity of 2.0 million British thermal units per hour (MMBtu/hr), uncontrolled and exhausting to stack S-2; [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.1.1 PSD Minor Limit [326 IAC 2-2]

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

- (a) The amount of asphalt processed shall not exceed 1,478,987 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
- (b) The PM emissions from the dryer/mixer shall not exceed 0.274 pounds per ton of asphalt processed.

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

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

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

- (a) The amount of asphalt processed shall not exceed 1,478,987 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
- (b) The PM10 emissions from the dryer/mixer shall not exceed 0.112 pounds per ton of asphalt processed.
- (c) The PM2.5 emissions from the dryer/mixer shall not exceed 0.119 pounds of PM2.5 per ton of asphalt produced.
- (d) The SO2 emissions from the dryer/mixer shall not exceed 0.058 pounds per ton of asphalt processed.
- (e) The NOx emissions from the dryer/mixer shall not exceed 0.055 pounds per ton of asphalt processed.
- (f) The VOC emissions from the dryer/mixer shall not exceed 0.032 pounds per ton of asphalt processed.

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

Compliance with these limits, combined with the potential to emit PM10, PM2.5, SO2, NOx, VOC, and CO from all other emission units at this source, shall limit the source-wide total potential to emit of PM10, PM2.5, SO2, NOx, VOC, and CO to less than 100 tons per 12 consecutive month period, each, and shall render 326 IAC 2-7 (Part 70 Permits), 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), and 326 IAC 2-1.1-5 (Nonattainment New Source Review) not applicable.

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

D.1.3 FESOP Limits: SO2, NOX, and HAPs [326 IAC 2-8-4] [326 IAC 2-2] [326 IAC 2-4.1]

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

(a) Fuel and Slag Specifications

- (1) The sulfur content of the No. 2 distillate fuel oil combusted in the dryer/mixer and hot oil heater shall not exceed 0.50% by weight.
- (2) The sulfur content of the No. 4 distillate fuel oil combusted in the dryer/mixer and hot oil heater shall not exceed 0.50% by weight.
- (3) The sulfur content of the residual oil (No. 5 or No. 6 fuel oil) shall not exceed 0.50% by weight.
- (4) The sulfur content of the waste oil shall not exceed 1.00% by weight.
- (5) The waste oil shall not contain more than 1.02% ash, 0.20% chlorine, and 0.01% lead, by weight.
- (6) The HCl emissions shall not exceed 13.2 pounds of HCl per 1,000 gallons of waste oil burned.
- (7) The sulfur content of the blast furnace slag shall not exceed 1.50% by weight.
- (8) The SO2 emissions from the dryer/mixer shall not exceed 0.740 pounds per ton of blast furnace slag processed in the aggregate mix.
- (9) The sulfur content of the steel slag shall not exceed 0.66% by weight.
- (10) The SO2 emissions from the dryer/mixer shall not exceed 0.0014 pounds per ton of steel slag processed in the aggregate mix.

(b) Single Fuel and Slag Usage Limitations:

When combusting only one type of fuel per twelve (12) consecutive month period in the dryer/mixer burner, the usage of fuel and slag shall be limited as follows:

- (1) Natural gas usage shall not exceed 876 million cubic feet (MMCF) per twelve (12) consecutive month period, with compliance determined at the end of each month.
- (2) No. 2 fuel oil usage shall not exceed 1,225,204 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month;

- (3) No. 4 fuel oil usage shall not exceed 1,159,860 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month;
- (4) Residual oil (No. 5 or No. 6 fuel oil) usage shall not exceed 1,108,146 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month;
- (5) Waste oil usage shall not exceed 591,765 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month; and

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

- (6) The blast furnace slag usage shall not exceed 150,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(c) Multiple Fuel and Slag Usage Limitation:

When combusting more than one fuel per twelve (12) consecutive month period in the dryer/mixer and the large generator, in conjunction with the use of slag in the aggregate mix, emissions from the dryer/mixer and the large generator shall be limited as follows:

- (1) SO₂ emissions from the dryer/mixer and the large generator, combined, shall not exceed 98.99 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
- (2) NO_x emissions from the dryer/mixer and the large generator, combined, shall not exceed 83.22 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
- (3) HCl emissions shall not exceed 3.91 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(d) Asphalt Shingle Usage Limitation

Pursuant to 326 IAC 2-8-4 (FESOP), and in order to render the requirements of 326 IAC 2-2 (PSD) and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAPs)) not applicable, the Permittee shall not grind recycled asphalt shingles on-site and shall only use certified asbestos-free recycled shingles, post consumer waste and/or factory seconds, as an additive in its aggregate mix.

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

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

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

D.1.5 Particulate Emission Limits [326 IAC 6-3]

Pursuant to 326 IAC 6-3-2, the particulate matter (PM) from the electrically powered portable crusher shall not exceed 55.44 pounds per hour when operating at a process weight rate of 150 tons (or 300,000 pounds) per hour.

The pound per hour limitation was calculated with the following equation:

Interpolation and extrapolation of the data for the process weight rate in excess of sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 55.0 P^{0.11} - 40 \quad \text{where } E = \text{rate of emission in pounds per hour; and} \\ P = \text{process weight rate in tons per hour}$$

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

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

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

Note: The No. 2 and No. 4 fuel oils are each considered distillate oils and the residual oils (No. 5 or No. 6 fuel oil) and waste oil are each considered residual oil.

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

D.1.7 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

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

Compliance Determination Requirements

D.1.8 Particulate Control (PM/PM10/PM2.5)

- (a) In order to comply with Conditions D.1.1(b), D.1.2(b), and D.1.2(c), the baghouse for particulate control shall be in operation and control emissions from the dryer/mixer at all times when the dryer/mixer is in operation.
- (b) In order to comply with Condition D.1.5, the wet suppression for particulate control shall be in operation and control emissions from the RAP crushing and screening operation at all times when the RAP crushing and screening is in operation.
- (c) In the event that bag failure is observed in a multi-compartment baghouse, if operations will continue for ten (10) days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

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

- (a) In order to demonstrate compliance with Conditions D.1.1(b), D.1.2(b), and D.1.2(c), the Permittee shall perform PM, PM10, and PM2.5 testing of the dryer/mixer not later than 180 days after the startup of the dryer/mixer, utilizing methods approved by the Commissioner. These tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C – Performance Testing contains the Permittee's obligation with regard to the performance testing required by this condition. PM10 and PM2.5 includes filterable and condensable particulate matter.

- (b) In order to demonstrate compliance with Condition D.1.3(a)(8), when using blast furnace slag, the Permittee shall perform SO₂ testing for the aggregate dryer within one hundred eighty (180) days of initial use of blast furnace slag in the aggregate mix, utilizing methods as approved by the Commissioner. Testing shall only be performed if the company has not previously performed SO₂ testing while using blast furnace slag in the aggregate mix at one of their other Indiana facilities. Testing shall be conducted in accordance with 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 Sulfur Dioxide (SO₂) Emissions and Sulfur Content

Fuel Oil

- (a) Compliance with the fuel limitations established in Conditions D.1.3(a)(1), D.1.3(a)(2), D.1.3(a)(3), D.1.3(a)(4), and D.1.6, shall be determined utilizing one of the following options. Pursuant to 326 IAC 7-2-1 (Sulfur Dioxide Reporting Requirements) and 326 IAC 3-7-4 (Fuel oil sampling; analysis methods), compliance shall be demonstrated on a thirty (30) day calendar-month average.
- (1) Providing vendor analysis of fuel delivered, if accompanied by a vendor certification; or
 - (2) Analyzing the oil sample to determine the sulfur content of the oil via the procedures in 40 CFR 60, Appendix A, Method 19.
 - (A) Oil samples may be collected from the fuel tank immediately after the fuel tank is filled and before any oil is combusted; and
 - (B) If a partially empty fuel tank is refilled, a new sample and analysis would be required upon filling.
 - (3) Compliance may also be determined by conducting a stack test for sulfur dioxide emissions from the 100 MMBtu/hr burner, using 40 CFR 60, Appendix A, Method 6 in accordance with the procedures in 326 IAC 3-6.

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

Blast Furnace Slag

- (b) Compliance with the blast furnace slag limitation established in Condition D.1.3(a)(7) shall be determined utilizing one of the following options. Pursuant to 326 IAC 2-8-4 (FESOP), compliance shall be demonstrated on a thirty (30) day calendar-month average.
- (1) Maintaining all records of vendor analyses or certifications of blast furnace slag delivered; or
 - (2) Analyzing a sample of each blast furnace slag delivery, if no vendor analyses or certifications are available, to determine the sulfur content of the blast furnace slag, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.

Compliance may also be determined by conducting a stack test for sulfur dioxide emissions from the 100 MMBtu/hr burner, using 40 CFR 60, Appendix A, Method 6 in accordance with the procedures in 326 IAC 3-6, or other procedures approved by IDEM, OAQ.

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

Steel Slag

- (c) Compliance with the steel slag limitations established in Condition D.1.3(a)(9) shall be determined utilizing one of the following options. Pursuant to 326 IAC 2-8-4 (FESOP), compliance shall be demonstrated on a thirty (30) day calendar-month average.
- (1) Maintaining all records of vendor analyses or certifications of steel slag delivered;
or
 - (2) Analyzing a sample of the steel slag delivery if no vendor analyses or certifications are available, at least once per quarter, to determine the sulfur content of the steel slag, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.

Compliance may also be determined by conducting a stack test for sulfur dioxide emissions from the 100 MMBtu/hr burner, using 40 CFR 60, Appendix A, Method 6 in accordance with the procedures in 326 IAC 3-6, or other procedures approved by IDEM, OAQ.

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

D.1.11 Multiple Fuel and Slag Usage

In order to comply with the Condition D.1.3(c) when combusting more than one fuel per twelve (12) consecutive month period in the dryer/mixer, in conjunction with the use of slag in the aggregate mix, emissions from the dryer/mixer and large generator shall be limited as follows:

(a) Sulfur Dioxide (SO₂) Emission Calculation

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

where:

- S = tons of sulfur dioxide emissions for a 12-month consecutive period
- G = million cubic feet of natural gas used in the last 12 months
- O = gallons of No. 2 fuel oil used in the last 12 months
- F = gallons of No. 4 fuel oil used in the last 12 months
- R = gallons of residual oil (No. 5 or No. 6 fuel oil) used in the last 12 months
- W = gallons of waste oil used in the last 12 months
- B = tons of blast furnace slag used in the last 12 months
- T = tons of steel slag used in the last 12 months
- E_G = 0.6 lbs/MMCF of natural gas
- E_O = 71.0 lbs/1000 gallons of No. 2 fuel oil
- E_F = 75.0 lbs/1000 gallons of Waste oil
- E_R = 78.5 lbs/1000 gallons of residual oil (No. 5 or No. 6 fuel oil)
- E_W = 147.0 lbs/1000 gallons of waste oil
- E_B = 0.74 lbs/ton of Blast Furnace slag used
- E_T = 0.0014 lbs/ton of Steel slag used

(b) Nitrogen Oxides (NO_x) Emission Calculation

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

where:

- N = tons of nitrogen oxide emissions for a 12-month consecutive period
- G = million cubic feet of natural gas used in the last 12 months
- O = gallons of No. 2 fuel oil used in the last 12 months
- F = gallons of No. 4 fuel oil used in the last 12 months
- R = gallons of residual oil (No. 5 or No. 6 fuel oil) used in the last 12 months
- W = gallons of waste oil used in the last 12 months
- E_G = 190 lbs/million cubic feet of natural gas
- E_O = 24.0 lbs/1000 gallons of No. 2 fuel oil
- E_F = 47.0 lbs/1000 gallons of No. 4 fuel oil
- E_R = 47.0 lbs/1000 gallons of residual oil (No. 5 or No. 6 fuel oil)
- E_W = 19.0 lbs/1000 gallons of waste oil

(c) Hydrogen Chloride (HCL) Emission Calculation

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

where:

- HCL = tons of hydrogen chloride emissions for a 12-month consecutive period
- W = gallons of waste oil used in the last 12 months.
- E_W = 13.2 lbs/1000 gallons of waste oil.

D.1.12 Hydrogen Chloride (HCl) Emissions and Ash, Chlorine, and Lead Content

The Permittee shall demonstrate compliance with the waste oil ash, chlorine, and lead content limits established in Condition D.1.3(a)(5), by providing a vendor analysis of each fuel delivery accompanied by a vendor certification.

D.1.13 Shingle Asbestos Content

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

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

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

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

D.1.14 Visible Emissions Notations

- (a) Visible emission notations from the conveyors, crusher, screens, material transfer points, and dryer/mixer stack exhaust shall be performed once per day during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.
- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
- (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (e) If abnormal emissions are observed, the Permittee shall take reasonable response steps. Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. An abnormal visible emission notation is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit.

D.1.15 Parametric Monitoring

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

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

D.1.16 Broken or Failed Bag Detection

In the event that bag failure has been observed:

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

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

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

D.1.17 Record Keeping Requirements

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

- (b) To document the compliance status with Conditions D.1.3 and D.1.6, the Permittee shall maintain records in accordance with (1) through (10) below. Records maintained for (1) through (10) below shall be taken monthly and shall be complete and sufficient to establish compliance with the limits established in Conditions D.1.3 and D.1.6.
- (1) Calendar dates covered in the compliance determination period;
 - (2) Actual fuel usage, sulfur content, heat content, and equivalent sulfur dioxide (SO₂) and nitrogen oxides (NO_x) emission rates for each fuel used at the source since the last compliance determination period;
 - (3) Actual waste oil usage, ash, chlorine, and lead content, and equivalent hydrogen chloride (HCL) emission rate for waste oil used at the source since the last compliance determination period;
 - (4) A certification, signed by the owner or operator, that the records of the fuel supplier certifications represent all of the fuel combusted during the period; and
 - (5) If the fuel supplier certification is used to demonstrate compliance the following, as a minimum, shall be maintained:
 - (A) Fuel supplier certifications;
 - (B) The name of the fuel supplier; and
 - (C) A statement from the fuel supplier that certifies the sulfur content of the No. 2 and No. 4 fuel oils, residual oil (No. 5 or No. 6 fuel oil), and waste oil, and the chlorine content of waste oil.
 - (5) 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;
 - (6) 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
 - (7) If the slag supplier certification is used to demonstrate compliance the following, as a minimum, shall be maintained:
 - (A) Blast furnace and steel slag supplier certifications;
 - (B) The name of the blast furnace and steel slag supplier; and
 - (C) A statement from the blast furnace and steel slag supplier that certifies the sulfur content of the blast furnace and steel slag.
 - (8) A certification, signed by the owner or operator, that the records of the shingle supplier certifications represent all of the shingles used during the period; and
 - (9) If the shingle supplier certification is used to demonstrate compliance the following, as a minimum, shall be maintained:
 - (A) Shingle supplier certifications;
 - (B) The name of the shingle supplier(s); and

- (C) A statement from the shingle supplier(s) that certifies the asbestos content of the shingles from their company.
- (d) To document the compliance status with Condition D.1.14, the Permittee shall maintain records once per day of the visible emission notations. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g., the process did not operate that day).
- (e) To document the compliance status with Condition D.1.15, the Permittee shall maintain records once per day of the pressure drop during normal operation. The Permittee shall include in its daily record when the pressure drop reading is not taken and the reason for the lack of a pressure drop reading (e.g., the process did not operate that day).
- (f) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the records required by this condition.

D.1.18 Reporting Requirements

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

SECTION D.2 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description [326 IAC 2-8-4(10)]: Cold-Mix Asphalt Production & Storage

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

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

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

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

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

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

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

- (a) Pursuant to 326 IAC 2-8-4, the VOC emissions from the sum of the liquid binders (asphalt emulsions) shall not exceed 62.62 tons per twelve (12) consecutive month period with compliance determined at the end of each month.
- (b) Liquid binders used in the production of cold mix asphalt shall be defined as follows:
 - (1) Cut back asphalt rapid cure, containing a maximum of 25.3% of the liquid binder by weight of VOC solvent and 95.0% by weight of VOC solvent evaporating.
 - (2) Cut back asphalt medium cure, containing a maximum of 28.6% of the liquid binder by weight of VOC solvent and 70.0% by weight of VOC solvent evaporating.
 - (3) Cut back asphalt slow cure, containing a maximum of 20.0% of the liquid binder by weight of VOC solvent and 25.0% by weight of VOC solvent evaporating.
 - (4) Emulsified asphalt with solvent, containing a maximum of 15.0% of liquid binder by weight of VOC solvent and 46.4% by weight of the VOC solvent in the liquid blend evaporating. The percent oil distillate in emulsified asphalt with solvent liquid, as determined by ASTM, must be seven percent (7%) or less of the total emulsion by volume.
 - (5) Other asphalt with solvent binder, containing a maximum 25.9% of the liquid binder of VOC solvent and 2.5% by weight of the VOC solvent evaporating.
- (c) When using only one type of liquid binder (asphalt emulsion) per twelve (12) consecutive month period, the usage of liquid binder shall be limited as follows:
 - (1) The amount of VOC solvent used in rapid cure cutback asphalt shall not exceed 65.92 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

- (2) The amount of VOC solvent used in medium cure cutback asphalt shall not exceed 89.46 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
 - (3) The amount of VOC solvent used in slow cure cutback asphalt shall not exceed 250.49 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
 - (4) The amount of VOC solvent used in emulsified asphalt shall not exceed 134.96 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
 - (5) The amount of VOC solvent used in all other asphalt shall not exceed 2,504.90 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
- (d) When using more than one liquid binder (asphalt emulsion) per twelve (12) consecutive month period, VOC emissions shall be limited as follows:
- (1) The VOC solvent allotments in (1) through (5) above shall be adjusted when more than one type of binder is used per twelve (12) consecutive month period with compliance determined at the end of each month. In order to determine the tons of VOC emitted per each type of binder, use the following formula and divide the tons of VOC solvent used for each type of binder by the corresponding adjustment factor listed in the table that follows.

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

Type of binder	adjustment factor
cutback asphalt rapid cure	1.053
cutback asphalt medium cure	1.429
cutback asphalt slow cure	4.000
emulsified asphalt	2.155
other asphalt	40.0

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

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

D.2.3 Record Keeping Requirements

-
- (a) To document the compliance status with Condition D.2.2(c)(1) through (5), the Permittee shall maintain records in accordance with (1) through (4) below. Records maintained shall be taken monthly and shall be complete and sufficient to establish compliance with the VOC emission limits established in Condition D.2.2(c)(1) through (5).
 - (1) Calendar dates covered in the compliance determination period;

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

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

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

D.2.4 Reporting Requirements

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

SECTION E.1

NSPS REQUIREMENTS

Emissions Unit Description [326 IAC 2-8-4(10)]: Hot-Mix Asphalt (HMA) Plant

- (a) One (1) drum-mix, hot-mix asphalt plant, identified as emission unit No. 1, constructed in 2007, with a maximum throughput capacity of 400 tons of raw material per hour, processing recycled asphalt pavement (RAP), blast furnace slag, steel slag, and asbestos-free recycled asphalt shingles in the aggregate mix, equipped with one (1) 100 million British thermal units (MMBtu) per hour dryer burner, firing natural gas, No. 2 fuel oil, and No. 4 fuel oil, as available, equipped with a baghouse, identified as CD-1, for particulate control, and exhausting through stack S-1. This plant is also used to produce cold mix asphalt. No grinding of shingles occurs at this source.
- (b) Material conveying, handling, screening, and storage operations consisting of the following:
 - (1) Raw material storage piles, including:
 - (A) Sand storage piles, with a maximum anticipated pile size of 0.80 acre;
 - (B) Limestone storage piles, with a maximum anticipated pile size of 1.30 acres;
 - (C) Reclaimed asphalt pavement (RAP) storage pile(s), with a maximum anticipated pile size of 1.40 acres;
 - (D) Gravel storage piles, with a maximum anticipated pile size of 1.20 acre; and
 - (E) Recycled asphalt shingles pile(s), with a maximum anticipated pile size of 1.40 acre; and
 - (F) Blast furnace and/or electric arc furnace steel mill slag storage piles, with a combined maximum anticipated pile size of 1.00 acre.
 - (2) One (1) dry additive storage silo, identified as emission unit No. 6, constructed in 2007, with a maximum storage capacity of 38.25 tons, equipped with a baghouse, identified as CD-2, for particulate control, and exhausting through stack CD-2;
 - (3) One (1) eight (8) compartment aggregate cold feed system;
 - (4) One (1) dual deck scalping screen;
 - (5) Two (2) belt conveyors;
 - (7) One (1) recycled asphalt pavement (RAP) and recycled asphalt shingles (RAS) system, including:
 - (A) Two (2) feed bins for recycled asphalt pavement and recycled shingles.
 - (C) One (1) scalping screen; and
 - (B) Two (2) belt conveyors;
 - (8) One (1) drag slat conveyor transporting hot-mixed asphalt to the asphalt storage silos; and
 - (9) Three (3) hot-mixed asphalt storage silos, identified as SILO, constructed in 2006, with a maximum storage capacity of 300 tons, each, uncontrolled and exhausting to the atmosphere;

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

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

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

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

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

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

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

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

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

- (a) 40 CFR 60.90
- (b) 40 CFR 60.91
- (c) 40 CFR 60.92
- (d) 40 CFR 60.93

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

The Permittee shall perform the stack testing required under NSPS 40 CFR 60, Subpart I, utilizing methods as approved by the Commissioner to document compliance with Condition E.1.2. These tests shall be repeated at least once every five (5) years from the date of the last valid compliance demonstration. Testing shall be conducted in accordance with Section C - Performance Testing.

SECTION E.2

NSPS REQUIREMENTS

Emissions Unit Description [326 IAC 2-8-4(10)]: Recycled Asphalt Pavement (RAP) Crusher

- (c) One (1) electrically powered portable crusher for processing reclaimed asphalt pavement (RAP), identified as CRUSHER, constructed in 2007, with a maximum throughput capacity of 150 tons of RAP per hour, uncontrolled and exhausting to the atmosphere.

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 General Provisions Relating to the New Source Performance Standards (NSPS) for Nonmetallic Mineral Processing Plants (40 CFR 60, Subpart OOO) [326 IAC 12-1] [40 CFR 60, Subpart A]

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

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

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

E.2.2 New Source Performance Standards (NSPS) for Nonmetallic Mineral Processing Plants [40 CFR 60, Subpart OOO] [326 IAC 12-1]

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

- | | |
|---|--|
| (1) 40 CFR 60.670(a), (d), (e), and (f) | (6) 40 CFR 60.675(a), (c)(1)(i), (ii), (iii), (c)(3), (d), (e), (g), and (i) |
| (2) 40 CFR 60.671 | |
| (3) 40 CFR 60.672(b), (d), and (e) | (7) 40 CFR 60.676(a), (b)(1), (f), (g), (h), (i), (j), and (k) |
| (4) 40 CFR 60.673 | (8) Table 1 and Table 3 |
| (5) 40 CFR 60.674(b) | |

E.2.3 Testing Requirements [40 CFR 60, Subpart OOO] [326 IAC 12-1] [326 IAC 2-8-5(a)(1),(4)] [326 IAC 2-1.1-11]

In order to demonstrate compliance with Condition E.2.2, the Permittee shall perform testing for fugitive emissions from affected facilities without water sprays, as required under NSPS 40 CFR 60, Subpart OOO, within 60 days of achieving maximum capacity, but not later than 180 days after the startup, utilizing methods approved by the Commissioner. Testing shall only be performed if the company has not previously performed testing for the same crusher and/or grinder at one of their other Indiana facilities. This test shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Section C – Performance Testing

contains the Permittee's obligation with regard to the performance testing required by this condition.

Note: Pursuant to §60.674(b)(1), affected facilities controlled by water carryover from upstream water sprays that are inspected according to the requirements in §60.674(b) and §60.676(b) are exempt from this 5-year repeat testing requirement.

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

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

Source Name: Corydon Stone & Asphalt Co.
Source Address: 1100 Quarry Rd. NW, Corydon, Indiana 47122
FESOP Permit No.: F061-31157-05308

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: Corydon Stone & Asphalt Co.
Source Address: 1100 Quarry Rd. NW, Corydon, Indiana 47122
FESOP Permit No.: F061-31157-05308

This form consists of 2 pages

Page 1 of 2

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

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

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

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

Page 2 of 2

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

Form Completed by: _____

Title / Position: _____

Date: _____

Phone: _____

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

FESOP Quarterly Report

Source Name: Corydon Stone & Asphalt Co.
Source Address: 1100 Quarry Rd. NW, Corydon, Indiana 47122
FESOP Permit No.: F061-31157-05308

Facility: Dryer/Mixer

Parameter: **Hot-mix Asphalt Production**

Limit: The amount of hot-mix asphalt produced in the dryer/burner shall not exceed 1,478,987 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

QUARTER: _____ YEAR: _____

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

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

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

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

FESOP Quarterly Report

Page 1 of 3

Source Name: Corydon Stone & Asphalt Co.
 Source Address: 1100 Quarry Rd. NW, Corydon, Indiana 47122
 FESOP Permit No.: F061-31157-05308

Facility: Dryer/Mixer Burner

Parameter: **Fuel & Slag Usage / SO₂ & NO_x emissions**

Emission Limits: Sulfur dioxide (SO₂) emissions shall not exceed 98.99 tons per twelve (12) consecutive month period, with compliance determined at the end of each month, using the equation found in Condition D.1.11(a).

Nitrogen oxides (NO_x) emissions shall not exceed 83.22 tons per twelve (12) consecutive month period, with compliance determined at the end of each month, using the equation found in Condition D.1.11(b).

Hydrogen Chloride (HCL) emissions shall not exceed 3.91 tons per twelve (12) consecutive month period, with compliance determined at the end of each month, using the equation found in Condition D.1.11(c).

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

Fuel Type (Units)	Fuel Usage Limit (per 12 consecutive month period)
Natural Gas (million cubic feet)	876
No. 2 Fuel Oil (gallons)	1,225,204
No. 4 fuel Oil (gallons)	1,159,860
Residual Oil (No. 5 or No. 6 fuel oil) (gallons)	1,108,146
Waste Oil (gallons)	591,765
Blast Furnace Slag (tons)	150,000

Facility: Cold-mix Asphalt Production

Parameter: **Binder Usage / VOC Emissions**

Emission Limits: Volatile Organic Compound (VOC) emissions from the sum of the binders shall not exceed 62.62 tons per twelve (12) consecutive month period with compliance determined at the end of each month, using the equation found in Condition D.2.2(d).

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

Type of Binder	Binder Usage Limit (tons per 12 consecutive month period)
Cutback Asphalt Rapid Cure	65.92
Cutback Asphalt Medium Cure	89.46
Cutback Asphalt Slow Cure	250.49
Emulsified Asphalt	134.96
Other Asphalt	2,504.90

FESOP Quarterly Report - Fuel & Slag Usage / SO2 & NOx emissions

QUARTER: _____ YEAR: _____

Month	Fuel Types / Slag (units)	Column 1	Column 2	Column 1 + Column 2	Equation Results		
		Usage This Month	Usage Previous 11 Months	Usage 12 Month Total	Sulfur Dioxide (SO2) Emissions (tons per 12 months)	Nitrogen Oxides (NOx) Emissions (tons per 12 months)	Hydrogen Chloride (HCl) Emissions (tons per 12 months)
Month 1	Natural Gas (million cubic feet)						
	No. 2 Distillate Fuel Oil (gallons)						
	No. 4 Fuel Oil (gallons)						
	Residual Oil (No. 5 or No. 6 fuel oil) (gallons)						
	Waste Oil (gallons)						
	Blast Furnace Slag (tons)						
	Steel Slag Usage (tons)						
Month 2	Natural Gas (million cubic feet)						
	No. 2 Fuel Oil (gallons)						
	No. 4 Fuel Oil (gallons)						
	Residual Oil (No. 5 or No. 6 fuel oil) (gallons)						
	Waste Oil (gallons)						
	Blast Furnace Slag (tons)						
	Steel Slag Usage (tons)						
Month 3	Natural Gas (million cubic feet)						
	No. 2 Fuel Oil (gallons)						
	No. 4 Fuel Oil (gallons)						
	Residual Oil (No. 5 or No. 6 fuel oil) (gallons)						
	Waste Oil (gallons)						
	Blast Furnace Slag (tons)						
	Steel Slag Usage (tons)						

No deviation occurred in this reporting period.

Submitted by: _____ Date: _____

Deviation/s occurred in this reporting period.

Title / Position: _____ Phone: _____

Deviation was reported on: _____

Signature: _____

FESOP Quarterly Report - Liquid Binder (Asphalt Emulsion) Usage / VOC Emissions

QUARTER: _____ YEAR: _____

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

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

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

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

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

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

Source Name: Corydon Stone & Asphalt Co.
Source Address: 1100 Quarry Rd. NW, Corydon, Indiana 47122
FESOP Permit No.: F061-31157-05308

Months: _____ to _____ Year: _____

Page 1 of 2

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

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

Form Completed by: _____

Title / Position: _____

Date: _____

Phone: _____

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

**Corydon Stone & Asphalt Co.
1100 Quarry Rd. NW
Corydon, IN 47122-0577**

Attachment A

**HOT-MIX ASPHALT CONCRETE PLANT
FUGITIVE PARTICULATE MATTER EMISSIONS
CONTROL PLAN**

F061-31157-05308

- 1) Fugitive particulate matter emissions from paved roads, unpaved roads, and parking lots shall be controlled by one or more of the following measures:
 - a) Paved Roads/Parking Lots:
 - i) Cleaning by wet brooming on an as needed basis.
 - ii) Cleaning by high pressure water wash on an as needed basis.
 - b) Unpaved Roads/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.
- 2) Fugitive particulate matter emissions from aggregate stockpiles shall be controlled by one or more of the following measures:
 - a) Maintain minimum size and number of stockpiles of aggregate.
 - b) Treating the stockpile and the area around stockpile water on an as needed basis.
- 3) Fugitive particulate matter emissions from outdoor conveying of aggregates shall be controlled by applying water at the main feeder bins.
- 4) Fugitive particulate matter emissions resulting from the transferring of aggregates shall be controlled by one or more of the following measures:
 - a) Minimize the vehicle distance between the transfer points.
 - b) Apply water on transfer points on an as needed basis.
- 5) Fugitive particulate matter emissions resulting from transporting of aggregate by truck, front-end loader, etc., shall be controlled by one or more of the following measures:
 - a) Tarping over-the-road trucks beds.
 - b) Maintain a 10 MPH speed limit.
 - c) Spray the aggregate with water on an as needed basis.
- 6) Fugitive particulate matter emissions resulting 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 aggregate.
 - c) Spray the aggregate with water on an as needed basis.
- 7) Fugitive particulate matter emissions resulting from the crushing operations shall be controlled by one or more of the following:

- a) Skirt Rubber/Aprons will be affixed to the discharge area.
 - b) Spray the aggregate with water on an as needed basis.
- 8) Plan Implementation
- a) The effective date of this plan was August 14, 2007.
 - b) Date of most recent update: January 25, 2012.

Reference

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

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

**Corydon Stone & Asphalt Co.
1100 Quarry Rd. NW
Corydon, IN 47122-0577**

Attachment B

Title 40: Protection of Environment

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

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

F061-31157-05308

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

§ 60.90 Applicability and designation of affected facility.

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

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

§ 60.91 Definitions.

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

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

[51 FR 12325, Apr. 10, 1986]

§ 60.92 Standard for particulate matter.

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

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

§ 60.93 Test methods and procedures.

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

[54 FR 6667, Feb. 14, 1989]

Reference

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

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

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

**Corydon Stone & Asphalt Co.
1100 Quarry Rd. NW
Corydon, IN 47122-0577**

Attachment C

Title 40: Protection of Environment

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

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

F061-31157-05308

40 CFR 60, Subpart OOO—Standards of Performance for Nonmetallic Mineral Processing Plants

Source: 74 FR 19309, Apr. 28, 2009, 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; plants without crushers or grinding mills above ground; and wet material processing operations (as defined in §60.671).
- (b) An affected facility that is subject to the provisions of subparts F or I of this part 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, and there is no increase in the amount of emissions, 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, modification, or reconstruction 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 do not apply to owners and operators of affected facilities subject to this subpart or that apply with certain exceptions.

§ 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 affected facilities 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 affected facilities 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.

Crush or *Crushing* means to reduce the size of nonmetallic mineral material by means of physical impaction of the crusher or grinding mill upon the material.

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:

- (1) Crushed and Broken Stone, including Limestone, Dolomite, Granite, Traprock, Sandstone, Quartz, Quartzite, Marl, Marble, Slate, Shale, Oil Shale, and Shell.
- (2) Sand and Gravel.
- (3) Clay including Kaolin, Fireclay, Bentonite, Fuller's Earth, Ball Clay, and Common Clay.
- (4) Rock Salt.
- (5) Gypsum (natural or synthetic).
- (6) Sodium Compounds, including Sodium Carbonate, Sodium Chloride, and Sodium Sulfate.
- (7) Pumice.
- (8) Gilsonite.
- (9) Talc and Pyrophyllite.
- (10) Boron, including Borax, Kernite, and Colemanite.
- (11) Barite.
- (12) Fluorospars.
- (13) Feldspar.
- (14) Diatomite.
- (15) Perlite.
- (16) Vermiculite.
- (17) Mica.
- (18) 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.

Saturated material means, for purposes of this subpart, mineral material with sufficient surface moisture such that particulate matter emissions are not generated from processing of the material through screening operations, bucket elevators, and belt conveyors. Material that is wetted solely by wet suppression systems is not considered to be "saturated" for purposes of this definition.

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). Grizzly feeders associated with truck dumping and static (non-

moving) grizzlies used anywhere in the nonmetallic mineral processing plant are not considered to be screening operations.

Seasonal shut down means shut down of an affected facility for a period of at least 45 consecutive days due to weather or seasonal market conditions.

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) of 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 material processing operation(s) means any of the following:

- (1) Wet screening operations (as defined in this section) and subsequent screening operations, bucket elevators and belt conveyors in the production line that process saturated materials (as defined in this section) up to the first crusher, grinding mill or storage bin in the production line; or
- (2) Screening operations, bucket elevators, and belt conveyors in the production line downstream of wet mining operations (as defined in this section) that process saturated materials (as defined in this section) up to the first crusher, grinding mill or storage bin in the production line.

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.

§ 60.672 Standard for particulate matter (PM).

- (a) Affected facilities must meet the stack emission limits and compliance requirements in Table 2 of this subpart within 60 days 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 §60.8. The requirements in Table 2 of this subpart apply for affected facilities with capture systems used to capture and transport particulate matter to a control device.
- (b) Affected facilities must meet the fugitive emission limits and compliance requirements in Table 3 of this subpart within 60 days 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. The requirements in Table 3 of this subpart apply for fugitive emissions from affected facilities without capture systems and for fugitive emissions escaping capture systems.

- (c) [Reserved]
- (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) and (b) of this section, or the building enclosing the affected facility or facilities must comply with the following emission limits:
 - (1) Fugitive emissions from the building openings (except for vents as defined in §60.671) must not exceed 7 percent opacity; and
 - (2) Vents (as defined in §60.671) in the building must meet the applicable stack emission limits and compliance requirements in Table 2 of this subpart.
- (f) Any baghouse that controls emissions from only an individual, enclosed storage bin is exempt from the applicable stack PM concentration limit (and associated performance testing) in Table 2 of this subpart but must meet the applicable stack opacity limit and compliance requirements in Table 2 of this subpart. This exemption from the stack PM concentration limit does not apply for multiple storage bins with combined stack emissions.

§ 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.

- (a) 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:
 - (1) 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.
 - (2) 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.
- (b) The owner or operator of any affected facility for which construction, modification, or reconstruction commenced on or after April 22, 2008, that uses wet suppression to control

emissions from the affected facility must perform monthly periodic inspections to check that water is flowing to discharge spray nozzles in the wet suppression system. The owner or operator must initiate corrective action within 24 hours and complete corrective action as expeditiously as practical if the owner or operator finds that water is not flowing properly during an inspection of the water spray nozzles. The owner or operator must record each inspection of the water spray nozzles, including the date of each inspection and any corrective actions taken, in the logbook required under §60.676(b).

- (1) If an affected facility relies on water carryover from upstream water sprays to control fugitive emissions, then that affected facility is exempt from the 5-year repeat testing requirement specified in Table 3 of this subpart provided that the affected facility meets the criteria in paragraphs (b)(1)(i) and (ii) of this section:
 - (i) The owner or operator of the affected facility conducts periodic inspections of the upstream water spray(s) that are responsible for controlling fugitive emissions from the affected facility. These inspections are conducted according to paragraph (b) of this section and §60.676(b), and
 - (ii) The owner or operator of the affected facility designates which upstream water spray(s) will be periodically inspected at the time of the initial performance test required under §60.11 of this part and §60.675 of this subpart.
- (2) If an affected facility that routinely uses wet suppression water sprays ceases operation of the water sprays or is using a control mechanism to reduce fugitive emissions other than water sprays during the monthly inspection (for example, water from recent rainfall), the logbook entry required under §60.676(b) must specify the control mechanism being used instead of the water sprays.
- (c) Except as specified in paragraph (d) or (e) of this section, the owner or operator of any affected facility for which construction, modification, or reconstruction commenced on or after April 22, 2008, that uses a baghouse to control emissions must conduct quarterly 30-minute visible emissions inspections using EPA Method 22 (40 CFR part 60, Appendix A-7). The Method 22 (40 CFR part 60, Appendix A-7) test shall be conducted while the baghouse is operating. The test is successful if no visible emissions are observed. If any visible emissions are observed, the owner or operator of the affected facility must initiate corrective action within 24 hours to return the baghouse to normal operation. The owner or operator must record each Method 22 (40 CFR part 60, Appendix A-7) test, including the date and any corrective actions taken, in the logbook required under §60.676(b). The owner or operator of the affected facility may establish a different baghouse-specific success level for the visible emissions test (other than no visible emissions) by conducting a PM performance test according to §60.675(b) simultaneously with a Method 22 (40 CFR part 60, Appendix A-7) to determine what constitutes normal visible emissions from that affected facility's baghouse when it is in compliance with the applicable PM concentration limit in Table 2 of this subpart. The revised visible emissions success level must be incorporated into the permit for the affected facility.
- (d) As an alternative to the periodic Method 22 (40 CFR part 60, Appendix A-7) visible emissions inspections specified in paragraph (c) of this section, the owner or operator of any affected facility for which construction, modification, or reconstruction commenced on or after April 22, 2008, that uses a baghouse to control emissions may use a bag leak detection system. The owner or operator must install, operate, and maintain the bag leak detection system according to paragraphs (d)(1) through (3) of this section.
 - (1) Each bag leak detection system must meet the specifications and requirements in paragraphs (d)(1)(i) through (viii) of this section.

- (i) The bag leak detection system must be certified by the manufacturer to be capable of detecting PM emissions at concentrations of 1 milligram per dry standard cubic meter (0.00044 grains per actual cubic foot) or less.
 - (ii) The bag leak detection system sensor must provide output of relative PM loadings. The owner or operator shall continuously record the output from the bag leak detection system using electronic or other means (e.g. , using a strip chart recorder or a data logger).
 - (iii) The bag leak detection system must be equipped with an alarm system that will sound when the system detects an increase in relative particulate loading over the alarm set point established according to paragraph (d)(1)(iv) of this section, and the alarm must be located such that it can be heard by the appropriate plant personnel.
 - (iv) In the initial adjustment of the bag leak detection system, the owner or operator must establish, at a minimum, the baseline output by adjusting the sensitivity (range) and the averaging period of the device, the alarm set points, and the alarm delay time.
 - (v) Following initial adjustment, the owner or operator shall not adjust the averaging period, alarm set point, or alarm delay time without approval from the Administrator or delegated authority except as provided in paragraph (d)(1)(vi) of this section.
 - (vi) Once per quarter, the owner or operator may adjust the sensitivity of the bag leak detection system to account for seasonal effects, including temperature and humidity, according to the procedures identified in the site-specific monitoring plan required by paragraph (d)(2) of this section.
 - (vii) The owner or operator must install the bag leak detection sensor downstream of the fabric filter.
 - (viii) Where multiple detectors are required, the system's instrumentation and alarm may be shared among detectors.
- (2) The owner or operator of the affected facility must develop and submit to the Administrator or delegated authority for approval of a site-specific monitoring plan for each bag leak detection system. The owner or operator must operate and maintain the bag leak detection system according to the site-specific monitoring plan at all times. Each monitoring plan must describe the items in paragraphs (d)(2)(i) through (vi) of this section.
- (i) Installation of the bag leak detection system;
 - (ii) Initial and periodic adjustment of the bag leak detection system, including how the alarm set-point will be established;
 - (iii) Operation of the bag leak detection system, including quality assurance procedures;
 - (iv) How the bag leak detection system will be maintained, including a routine maintenance schedule and spare parts inventory list;
 - (v) How the bag leak detection system output will be recorded and stored; and

- (vi) Corrective action procedures as specified in paragraph (d)(3) of this section. In approving the site-specific monitoring plan, the Administrator or delegated authority may allow owners and operators more than 3 hours to alleviate a specific condition that causes an alarm if the owner or operator identifies in the monitoring plan this specific condition as one that could lead to an alarm, adequately explains why it is not feasible to alleviate this condition within 3 hours of the time the alarm occurs, and demonstrates that the requested time will ensure alleviation of this condition as expeditiously as practicable.
- (3) For each bag leak detection system, the owner or operator must initiate procedures to determine the cause of every alarm within 1 hour of the alarm. Except as provided in paragraph (d)(2)(vi) of this section, the owner or operator must alleviate the cause of the alarm within 3 hours of the alarm by taking whatever corrective action(s) are necessary. Corrective actions may include, but are not limited to the following:
- (i) Inspecting the fabric filter for air leaks, torn or broken bags or filter media, or any other condition that may cause an increase in PM emissions;
 - (ii) Sealing off defective bags or filter media;
 - (iii) Replacing defective bags or filter media or otherwise repairing the control device;
 - (iv) Sealing off a defective fabric filter compartment;
 - (v) Cleaning the bag leak detection system probe or otherwise repairing the bag leak detection system; or
 - (vi) Shutting down the process producing the PM emissions.
- (e) As an alternative to the periodic Method 22 (40 CFR part 60, Appendix A-7) visible emissions inspections specified in paragraph (c) of this section, the owner or operator of any affected facility that is subject to the requirements for processed stone handling operations in the Lime Manufacturing NESHAP (40 CFR part 63, subpart AAAAA) may follow the continuous compliance requirements in row 1 items (i) through (iii) of Table 6 to Subpart AAAAA of 40 CFR part 63.

§ 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 appendices A-1 through A-7 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 PM standards in §60.672(a) as follows:
 - (1) Except as specified in paragraphs (e)(3) and (4) of this section, Method 5 of Appendix A-3 of this part or Method 17 of Appendix A-6 of this part shall be used to determine the particulate matter concentration. The sample volume shall be at least 1.70 dscm (60 dscf). For Method 5 (40 CFR part 60, Appendix A-3), 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 of Appendix A-4 of this part 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) or §60.672(e)(1), the owner or operator shall use Method 9 of Appendix A–4 of this part 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 of Appendix A–4 of this part, 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) (i) 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 (40 CFR part 60, Appendix A–4), the duration of the Method 9 (40 CFR part 60, Appendix A–4) observations shall be 1 hour (ten 6-minute averages).
- (ii) The duration of the Method 9 (40 CFR part 60, Appendix A–4) observations may be reduced to the duration the affected facility operates (but not less than 30 minutes) for baghouses that control storage bins or enclosed truck or railcar loading stations that operate for less than 1 hour at a time.
- (3) When determining compliance with the fugitive emissions standard for any affected facility described under §60.672(b) or §60.672(e)(1) of this subpart, the duration of the Method 9 (40 CFR part 60, Appendix A–4) observations must be 30 minutes (five 6-minute averages). Compliance with the applicable fugitive emission limits in Table 3 of this subpart must be based on the average of the five 6-minute averages.
- (d) To demonstrate compliance with the fugitive emission limits for buildings specified in §60.672(e)(1), the owner or operator must complete the testing specified in paragraph (d)(1) and (2) of this section. Performance tests must be conducted while all affected facilities inside the building are operating.
- (1) If the building encloses any affected facility that commences construction, modification, or reconstruction on or after April 22, 2008, the owner or operator of the affected facility must conduct an initial Method 9 (40 CFR part 60, Appendix A–4) performance test according to this section and §60.11.
 - (2) If the building encloses only affected facilities that commenced construction, modification, or reconstruction before April 22, 2008, and the owner or operator has previously conducted an initial Method 22 (40 CFR part 60, Appendix A–7) performance test showing zero visible emissions, then the owner or operator has demonstrated compliance with the opacity limit in §60.672(e)(1). If the owner or operator has not conducted an initial performance test for the building before April 22, 2008, then the owner or operator must conduct an initial Method 9 (40 CFR part 60, Appendix A–4) performance test according to this section and §60.11 to show compliance with the opacity limit in §60.672(e)(1).

- (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.
 - (2) A single visible emission observer may conduct visible emission observations for up to three fugitive, stack, or vent emission points within a 15-second interval if the following conditions are met:
 - (i) No more than three emission points may be read concurrently.
 - (ii) All three emission points must be within a 70 degree viewing sector or angle in front of the observer such that the proper sun position can be maintained for all three points.
 - (iii) If an opacity reading for any one of the three emission points equals or exceeds the applicable standard, then the observer must stop taking readings for the other two points and continue reading just that single point.
 - (3) Method 5I of Appendix A-3 of this part may be used to determine the PM concentration as an alternative to the methods specified in paragraph (b)(1) of this section. Method 5I (40 CFR part 60, Appendix A-3) may be useful for affected facilities that operate for less than 1 hour at a time such as (but not limited to) storage bins or enclosed truck or railcar loading stations.
 - (4) In some cases, velocities of exhaust gases from building vents may be too low to measure accurately with the type S pitot tube specified in EPA Method 2 of Appendix A-1 of this part [i.e., velocity head <1.3 mm H₂O (0.05 in. H₂O)] and referred to in EPA Method 5 of Appendix A-3 of this part. For these conditions, the owner or operator may determine the average gas flow rate produced by the power fans (e.g., from vendor-supplied fan curves) to the building vent. The owner or operator may calculate the average gas velocity at the building vent measurement site using Equation 1 of this section and use this average velocity in determining and maintaining isokinetic sampling rates.

$$v_e = \frac{Q_f}{A_e} \quad (\text{Eq. 1})$$

Where:

Ve= average building vent velocity (feet per minute);

Qf= average fan flow rate (cubic feet per minute); and

Ae= area of building vent and measurement location (square feet).

- (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)(1) and (2) during each particulate matter run and shall determine the averages.
- (g) For performance tests involving only Method 9 (40 CFR part 60 Appendix A–4) testing, the owner or operator may reduce the 30-day advance notification of performance test in §60.7(a)(6) and 60.8(d) to a 7-day advance notification.
- (h) [Reserved]
- (i) If the initial performance test date for an affected facility falls during a seasonal shut down (as defined in §60.671 of this subpart) of the affected facility, then with approval from the permitting authority, the owner or operator may postpone the initial performance test until no later than 60 calendar days after resuming operation of the affected facility.

§ 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) (1) Owners or operators of affected facilities (as defined in §§60.670 and 60.671) for which construction, modification, or reconstruction commenced on or after April 22, 2008, must record each periodic inspection required under §60.674(b) or (c), including dates and any corrective actions taken, in a logbook (in written or electronic format). The owner or operator must keep the logbook onsite and make hard or electronic copies (whichever is requested) of the logbook available to the Administrator upon request.

- (2) For each bag leak detection system installed and operated according to §60.674(d), the owner or operator must keep the records specified in paragraphs (b)(2)(i) through (iii) of this section.
 - (i) Records of the bag leak detection system output;
 - (ii) Records of bag leak detection system adjustments, including the date and time of the adjustment, the initial bag leak detection system settings, and the final bag leak detection system settings; and
 - (iii) The date and time of all bag leak detection system alarms, the time that procedures to determine the cause of the alarm were initiated, the cause of the alarm, an explanation of the actions taken, the date and time the cause of the alarm was alleviated, and whether the cause of the alarm was alleviated within 3 hours of the alarm.
- (3) The owner or operator of each affected facility demonstrating compliance according to §60.674(e) by following the requirements for processed stone handling operations in the Lime Manufacturing NESHAP (40 CFR part 63, subpart AAAAA) must maintain records of visible emissions observations required by §63.7132(a)(3) and (b) of 40 CFR part 63, subpart AAAAA.
- (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 and liquid flow rate decrease by more than 30 percent from the average determined during the most recent performance test.
- (e) The reports required under paragraph (d) of this section 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 (40 CFR part 60, Appendix A-4) to demonstrate compliance with §60.672(b), (e) and (f).
- (g) The owner or operator of any wet material processing operation that processes saturated and subsequently processes unsaturated materials, shall submit a report of this change within 30 days following such change. At the time of such change, this screening operation, bucket elevator, or belt conveyor becomes subject to the applicable opacity limit in §60.672(b) and the emission test requirements of §60.11.
- (h) The subpart A requirement under §60.7(a)(1) for notification of the date construction or reconstruction commenced is waived for affected facilities 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.
- (k) Notifications and reports required under this subpart and under subpart A of this part to demonstrate compliance with this subpart need only to be sent to the EPA Region or the State which has been delegated authority according to §60.4(b).

Table 1 to Subpart 000—Exceptions to Applicability of Subpart A to Subpart 000

Table 1 to Subpart 000—Exceptions to Applicability of Subpart A to Subpart 000

Subpart A reference	Applies to subpart 000	Explanation
60.4, Address	Yes	Except in §60.4(a) and (b) submittals need not be submitted to both the EPA Region and delegated State authority (§60.676(k)).
60.7, Notification and recordkeeping	Yes	Except in (a)(1) notification of the date construction or reconstruction commenced (§60.676(h)).
		Also, except in (a)(6) performance tests involving only Method 9 (40 CFR part 60, Appendix A–4) require a 7-day advance notification instead of 30 days (§60.675(g)).
60.8, Performance tests	Yes	Except in (d) performance tests involving only Method 9 (40 CFR part 60, Appendix A–4) require a 7-day advance notification instead of 30 days (§60.675(g)).
60.11, Compliance with standards and maintenance requirements	Yes	Except in (b) under certain conditions (§§60.675(c)), Method 9 (40 CFR part 60, Appendix A–4) observation is reduced from 3 hours to 30 minutes for fugitive emissions.
60.18, General control device	No	Flares will not be used to comply with the emission limits.

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Table 2 to Subpart OOO—Stack Emission Limits for Affected Facilities With Capture Systems

Table 2 to Subpart OOO—Stack Emission Limits for Affected Facilities With Capture Systems

For * * *	The owner or operator must meet a PM limit of * * *	And the owner or operator must meet an opacity limit of * * *	The owner or operator must demonstrate compliance with these limits by conducting * * *
Affected facilities (as defined in §§60.670 and 60.671) that commenced construction, modification, or reconstruction after August 31, 1983 but before April 22, 2008	0.05 g/dscm (0.022 gr/dscf) ^a	7 percent for dry control devices ^b	An initial performance test according to §60.8 of this part and §60.675 of this subpart; and Monitoring of wet scrubber parameters according to §60.674(a) and §60.676(c), (d), and (e).
Affected facilities (as defined in §§60.670 and 60.671) that commence construction, modification, or reconstruction on or after April 22, 2008	0.032 g/dscm (0.014 gr/dscf) ^a	Not applicable (except for individual enclosed storage bins) 7 percent for dry control devices on individual enclosed storage bins	An initial performance test according to §60.8 of this part and §60.675 of this subpart; and Monitoring of wet scrubber parameters according to §60.674(a) and §60.676(c), (d), and (e); and
			Monitoring of baghouses according to §60.674(c), (d), or (e) and §60.676(b).

^aExceptions to the PM limit apply for individual enclosed storage bins and other equipment. See §60.672(d) through (f).

^bThe stack opacity limit and associated opacity testing requirements do not apply for affected facilities using wet scrubbers.

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Table 3 to Subpart 000—Fugitive Emission Limits

Table 3 to Subpart 000—Fugitive Emission Limits

For * * *	The owner or operator must meet the following fugitive emissions limit for grinding mills, screening operations, bucket elevators, transfer points on belt conveyors, bagging operations, storage bins, enclosed truck or railcar loading stations or from any other affected facility (as defined in §§60.670 and 60.671) * * *	The owner or operator must meet the following fugitive emissions limit for crushers at which a capture system is not used * * *	The owner or operator must demonstrate compliance with these limits by conducting * * *
Affected facilities (as defined in §§60.670 and 60.671) that commenced construction, modification, or reconstruction after August 31, 1983 but before April 22, 2008	10 percent opacity	15 percent opacity	An initial performance test according to §60.11 of this part and §60.675 of this subpart.
Affected facilities (as defined in §§60.670 and 60.671) that commence construction, modification, or reconstruction on or after April 22, 2008	7 percent opacity	12 percent opacity	An initial performance test according to §60.11 of this part and §60.675 of this subpart; and Periodic inspections of water sprays according to §60.674(b) and §60.676(b); and
			A repeat performance test according to §60.11 of this part and §60.675 of this subpart within 5 years from the previous performance test for fugitive emissions from affected facilities without water sprays. Affected facilities controlled by water carryover from upstream water sprays that are inspected according to the requirements in §60.674(b) and §60.676(b) are exempt from this 5-year repeat testing requirement.

Reference:

The US EPA Electronic Code of Federal Regulations - 40 CFR 60, Subpart 000—Standards of Performance for Nonmetallic Mineral Processing Plants weblink:

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

Indiana Department of Environmental Management
Office of Air Quality

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

Source Background and Description

Source Name:	Corydon Stone & Asphalt Co.
Source Location:	1100 Quarry Road NW, Corydon, IN 47112
County:	Harrison
SIC Code:	2951 (Asphalt Paving Mixtures and Blocks)
Permit Renewal No.:	F061-31157-05308
Permit Reviewer:	Hannah L. Desrosiers

The Office of Air Quality (OAQ) has reviewed an operating permit renewal application from Corydon Stone & Asphalt Co. relating to the continued operation of an existing stationary drum-mix, hot-mix asphalt plant, and cold-mix asphalt production operation.

History

On November 09, 2011, Corydon Stone & Asphalt Co. submitted an application to the OAQ requesting to renew its General Asphalt FESOP operating permit. IDEM, OAQ is no longer issuing General Asphalt FESOP permits until the standard permit language can be updated to coincide with current environmental standards and regulations. Therefore, Corydon Stone & Asphalt Co. will be issued a Federally Enforceable State Operating Permit (FESOP) Renewal. The transition from a General Asphalt FESOP to a FESOP incorporates multiple Title I changes, as indicated throughout this technical support document.

Corydon Stone & Asphalt Co. has confirmed that they want the flexibility to process blast furnace slag, steel slag, and recycled asphalt shingles (asbestos-free factory seconds and/or post consumer waste) in their aggregate mix, and that they do not perform any grinding of any kind of recycled asphalt shingles, asbestos-free or otherwise. Additionally, Corydon Stone & Asphalt Co. has requested the flexibility to crush recycled asphalt pavement (RAP) on-site, using an electrically powered portable crusher; and finally, Corydon Stone & Asphalt Co. has confirmed that although this plant was originally permitted as a portable asphalt plant, it has never been moved since initial construction.

Corydon Stone & Asphalt Co. was issued a General Asphalt FESOP (No.: F061-25135-05308), on August 27, 2007.

Source Definition

This source consists of the following plants:

- (a) Corydon Stone and Asphalt Company located at 1100 Quarry Rd. NW, Corydon, Indiana 47122 (plant ID 061-05308)
- (b) Corydon Stone and Asphalt Company located at 1100 Quarry Rd., Corydon, Indiana 47122 (plant ID 061-00006)

Corydon Stone and Asphalt Company operates an asphalt plant (source number 061-05308) in the same quarry where it operates its crushed stone plant (source number 061-00006). IDEM, OAQ has examined whether the asphalt plant and the crushed stone plant are part of the same major source. The term "major source" is defined at 326 IAC 2-7-1(22). In order for two plants to be considered one major source, they must meet all three of the following criteria:

- (1) the plants must be under common ownership or common control;
- (2) the plants must have the same two-digit Standard Industrial Classification (SIC) Code or one must serve as a support facility for the other; and,
- (3) the plants must be located on contiguous or adjacent properties.

IDEM's Nonrule Policy Document Air-005 applies to the definition of "major source". Air-005 states that if two plants have common corporate officers or if one entity has ownership of fifty-one percent (51%) or more of both plants, then common ownership exists. Since the two plants are each 100% owned by Corydon Stone and Asphalt Company the first element of the major source definition is met.

The SIC Code Manual of 1987 sets out how to determine the proper SIC Code for each type of business. More information about SIC Codes is available at http://www.osha.gov/pls/imis/sic_manual.html on the Internet. The asphalt plant has the two-digit SIC Code 29 for the Major Group Petroleum Refining and Related Industries. The crushed stone plant has the two-digit SIC Code 14 for the Major Group Mining and Quarrying of Nonmetallic Minerals, Except Fuels. Therefore, the two plants do not have the same two-digit SIC Code.

A plant is a support facility to another plant if it dedicates 50% or more of its output to the other plant. The asphalt plant does not send any of its output to the stone crushing plant. The stone crushing plant sends at most 15% of its annual output to the asphalt plant. Therefore, there is no support facility relationship. Since the plants have different two-digit SIC Codes and there is no support relationship, they do not meet the second part of the major source definition.

The plants are located on the same property, so the third part of the definition is met. However, since the plants do not meet all three parts of the major source definition, IDEM, OAQ has determined that the asphalt plant and the crushed stone plant are not part of the same major source.

Permitted Emission Units and Pollution Control Equipment

The source consists of the following permitted emission units:

- (a) One (1) drum-mix, hot-mix asphalt plant, identified as emission unit No. 1, constructed in 2007, with a maximum throughput capacity of 400 tons of raw material per hour, processing recycled asphalt pavement (RAP), blast furnace slag, steel slag, and asbestos-free recycled asphalt shingles in the aggregate mix, equipped with one (1) 100 million British thermal units (MMBtu) per hour dryer burner, firing natural gas, No. 2 fuel oil, No. 4 fuel oil, residual oil (No. 5 or No. 6 fuel oil), and waste oil, as available, equipped with a baghouse, identified as CD-1, for particulate control, and exhausting through stack S-1. This plant is also used to produce cold mix asphalt. No grinding of shingles occurs at this source.
- (b) Material conveying, handling, screening, and storage operations consisting of the following:
 - (1) Raw material storage piles, including:
 - (A) Sand storage piles, with a maximum anticipated pile size of 0.80 acre;
 - (B) Limestone storage piles, with a maximum anticipated pile size of 1.30 acres;
 - (C) Reclaimed asphalt pavement (RAP) storage pile(s), with a maximum anticipated pile size of 1.40 acres;
 - (D) Gravel storage piles, with a maximum anticipated pile size of 1.20 acre; and

- (E) Recycled asphalt shingles pile(s), with a maximum anticipated pile size of 1.40 acre; and
 - (F) Blast furnace and/or electric arc furnace steel mill slag storage piles, with a combined maximum anticipated pile size of 1.00 acre.
- (2) One (1) dry additive storage silo, identified as emission unit No. 6, constructed in 2007, with a maximum storage capacity of 38.25 tons, equipped with a baghouse, identified as CD-2, for particulate control, and exhausting through stack CD-2;
 - (3) One (1) eight (8) compartment aggregate cold feed system;
 - (4) One (1) dual deck scalping screen;
 - (5) Two (2) belt conveyors;
 - (7) One (1) recycled asphalt pavement (RAP) and recycled asphalt shingles (RAS) system, including:
 - (A) Two (2) feed bins for recycled asphalt pavement and recycled shingles.
 - (C) One (1) scalping screen; and
 - (B) Two (2) belt conveyors;
 - (8) One (1) drag slat conveyor transporting hot-mixed asphalt to the asphalt storage silos; and
 - (9) Three (3) hot-mixed asphalt storage silos, identified as SILO, constructed in 2006, with a maximum storage capacity of 300 tons, each, uncontrolled and exhausting to the atmosphere;

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

- (c) One (1) electrically powered portable crusher for processing reclaimed asphalt pavement (RAP), identified as CRUSHER, constructed in 2007, with a maximum throughput capacity of 150 tons of RAP per hour, uncontrolled and exhausting to the atmosphere.

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

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

Emission Units and Pollution Control Equipment Constructed and/or Operated without a Permit
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No unpermitted emission units were discovered operating at this existing source during this review process.

Emission Units and Pollution Control Equipment Removed From the Source

No emission units have been removed from this existing source during this review process.

Insignificant Activities

The source also consists of the following insignificant activities:

- (a) One (1) natural gas-fired hot oil heater, identified as emission unit No. 2, constructed in 2007, with a maximum heat input capacity of 2.0 million British thermal units per hour (MMBtu/hr), uncontrolled and exhausting to stack S-2; [326 IAC 6-2]
- (b) Fuel oil-fired combustion sources with heat input equal to or less than two million (2,000,000) British thermal units per hour and firing fuel containing equal to or less than five-tenths percent (0.5%) sulfur by weight.
- (c) A petroleum fuel, other than gasoline, dispensing facility, having a storage capacity of less than or equal to ten thousand five hundred (10,500) gallons, and dispensing less than or equal to two hundred thousand (230,000) gallons per month;
- (d) Four (4) storage tanks, exhausting at stacks S-3, S-4, S-5, and S-6, including:
 - (1) Two (2) liquid asphalt cement storage tanks, identified as Tank-1a and Tank-1b, constructed in 2004, with a maximum storage capacity of 35,000 and 15,000 gallons, respectively;
 - (2) One (1) No. 4 fuel oil storage tank, identified as Tank-2a, constructed in 2004, with a maximum storage capacity of 20,000 gallons.
 - (3) One (1) No. 2 fuel oil storage tank, identified as Tank-2b, constructed in 2004, with a maximum storage capacity of 1,000 gallons; and
- (e) Natural gas pressure regulator vents, excluding venting at oil and gas production facilities;
- (f) Combustion source flame safety purging on startup;
- (g) 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;
- (h) Vessels storing lubricating oils, hydraulic oils, machining oils, and machining fluids;
- (i) Application of oils, greases, lubricants or other nonvolatile materials applied as temporary protective coatings;
- (j) Cleaners and solvents characterized as follows:
 - (1) having a vapor pressure equal to or less than 2 kPa; 15 mm Hg; or 0.3 psi measured at 38 °C (100 °F) or;
 - (2) having a vapor pressure equal to or less than 0.7 kPa; 5 mm Hg; or 0.1 psi measured at 20 °C (68 °F); the use of which for all cleaners and solvents combined does not exceed one hundred forty-five (145) gallons per twelve (12) months;
- (k) Closed loop heating and cooling systems;
- (l) Baghouse maintenance operations, including replacement or repair of electrostatic precipitators, bags in baghouses, and/or filters in other air filtration equipment;
- (m) Purging of gas lines and/or vessels related to routine maintenance and repair of buildings, structures, or vehicles at the source where air emissions from those activities would not be associated with any production process;
- (n) Process vessel degassing and cleaning to prepare for internal repairs.

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

Existing Approvals

The source has been operating under General Asphalt FESOP No.: F061-25135-05308, issued on August 27, 2007.

All terms and conditions of previous permits issued pursuant to permitting programs approved into the State Implementation Plan have been either incorporated as originally stated, revised, or deleted by this permit. All previous registrations and permits are superseded by this permit.

Enforcement Issue

There are no pending enforcement actions related to this existing source.

Emission Calculations

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

County Attainment Status

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

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

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

(a) Ozone Standards

Volatile organic compounds (VOC) and Nitrogen Oxides (NO_x) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NO_x emissions are considered when evaluating the rule applicability relating to ozone. Harrison County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NO_x emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

(b) PM_{2.5}

Harrison County has been classified as attainment or unclassifiable 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

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

Fugitive Emissions

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

Portable Source Status

This source did not relocate during the permit term. Therefore, this source is now considered a stationary source. The source ID will remain F061-05308 to ensure the history of the source is maintained in IDEM's tracking systems.

Unrestricted Potential Emissions

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

Pollutant	tons/year
PM	49,162.97
PM10 ⁽¹⁾	11,425.60
PM2.5	2,652.87
SO2	1,004.43
NOx	147.92
VOC	42,195.44
CO	233.54
GHG's as CO ₂ e	80,029.93
Total HAPs ⁽²⁾	11,029.31
Maximum (Worst Case) HAP	3,789.84 (xylene)

NOTES

- (1) Under the Part 70 Permit program (40 CFR 70), particulate matter with an aerodynamic diameter less than or equal to a nominal ten (10) micrometers (PM10), not particulate matter (PM), is considered as a "regulated air pollutant".
- (2) HAPs include 2,2,4-trimethylpentane, 2-butanone, 2-methylnaphthalene, acetaldehyde, acrolein, acenaphthene, benzene, carbon disulfide, chloromethane, cumene, ethylbenzene, fluorene, formaldehyde, hydrogen chloride (HCl), hexane, methyl chloroform, methyl ethyl ketone (MEK), methyl-tert-butylether, naphthalene, phenol, phenanthrene, polycyclic organic matter (POM), propionaldehyde, pyrene, quinone, toluene, total polycyclic aromatic hydrocarbon (PAH) HAPs, xylene, and antimony, chromium, cobalt, lead, manganese, nickel, and selenium compounds.
- (3) Appendix A.1 of this TSD, reflect the unrestricted, uncontrolled, potential emissions of the source.

- (a) The potential to emit (as defined in 326 IAC 2-7-1(29)) of PM10, PM2.5, SO2, NOx, VOC, and CO is equal to or greater than 100 tons per year, each. However, the Permittee has agreed to limit the source's PM10, PM2.5, SO2, NOx, VOC, and CO emissions to less than Title V levels, therefore the Permittee will be issued a FESOP Renewal.
- (b) The potential to emit (as defined in 326 IAC 2-7-1(29)) of GHGs is less than one hundred thousand (100,000) tons of CO2 equivalent emissions (CO2e) per year.
- (c) The potential to emit (as defined in 326 IAC 2-7-1(29)) of any single HAP is equal to or greater than ten (10) tons per year and/or the potential to emit (as defined in 326 IAC 2-7-1(29)) of a combination of HAPs is equal to or greater than twenty-five (25) tons per year. However, the Permittee has agreed to continue to limit the source's single HAP emissions and total HAP emissions below Title V levels. Therefore, the Permittee will be issued a FESOP Renewal.

Potential to Emit After Issuance

The source has opted to remain a FESOP source. The table below summarizes the potential to emit, reflecting all limits of the emission units. Any control equipment is considered enforceable only after issuance of this FESOP and only to the extent that the effect of the control equipment is made practically enforceable in the permit.

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Process/ Emission Unit	Potential To Emit of the Entire Source after Issuance of the Revision (tons/year)									
	PM	PM ₁₀ *	PM _{2.5} **	SO ₂	NO _x	VOC	CO	GHGs** as CO ₂ e	Total HAPs	Worst Single HAP
Ducted/Ductable Emissions										
Dryer Fuel Combustion (worst case) ⁽¹⁾	19.32	15.39	15.39	43.49	83.22	2.41	36.79	52,952.54	5.03	3.91 (HCL)
Dryer/Mixer ⁽²⁾ (Process)	202.46	82.61	87.98	42.89	40.67	23.66	96.13	24,589.64	7.88	2.29 (formaldehyde)
Dryer/Mixer Slag Processing ⁽³⁾	0	0	0	55.50	0	0	0	0	0	N/A
Hot Oil Heater Fuel Combustion (worst case)	0.02	0.07	0.07	0.01	0.88	0.05	0.74	1,752.00	0.02	0.016 (hexane)
Generator (< 600 hp) Fuel Combustion	0	0	0	0	0	0	0	0	0	N/A
Generator (> 600 hp) Fuel Combustion	0	0	0	0	0	0	0	0	0	N/A
Worst Case Emissions ^α	202.48	82.67	88.05	99.00	84.10	23.71	96.87	54,704.54	7.90	3.91 (HCL)
Fugitive Emissions										
Asphalt Load-Out, Silo Filling, and On-Site Yard ⁽³⁾	0.82	0.82	0.82	0	0	12.67	2.13	0	0.21	0.07 (formaldehyde)
Material Storage Piles	2.38	0.83	0.83	0	0	0	0	0	0	N/A
Material Processing and Handling ⁽³⁾	4.78	2.26	0.34	0	0	0	0	0	0	N/A
Material Crushing, Screening, and Conveying ⁽³⁾	23.46	8.57	8.57	0	0	0	0	0	0	N/A
Unpaved and Paved Roads (worst case) ⁽¹⁾	15.08	3.84	0.38	0	0	0	0	0	0	N/A
Cold Mix Asphalt Production ⁽⁴⁾	0	0	0	0	0	62.62	0	0	16.33	5.64 (xylenes)
Gasoline Fuel Transfer and Dispensing	0	0	0	0	0	0	0	0	0	N/A
Volatile Organic Liquid Storage Vessels ***	0	0	0	0	0	negl.	0	0	negl.	negl.
Total Fugitive Emissions	46.52	16.33	10.95	0.00	0.00	75.29	2.13	0.00	16.55	5.64 (xylenes)
Total Limited/ Controlled Emissions	249.00	99.00	99.00	99.00	84.10	99.00	99.00	54,704.54	24.45	5.64 (xylenes)
Title V Major Source Thresholds	NA	100	100	100	100	100	100	100,000	25	10
PSD Major Source Thresholds	250	250	100	250	250	250	250	100,000	N/A	N/A
Emission Offset/ Nonattainment NSR Major Source Thresholds	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
negl = negligible N/A = Not applicable HCL = hydrogen chloride * Under the Part 70 Permit program (40 CFR 70), particulate matter with an aerodynamic diameter less than or equal to a nominal ten (10) micrometers (PM10), not particulate matter (PM), is considered as a "regulated air pollutant." ** The 100,000 CO ₂ e threshold represents the Title V and PSD subject to regulation thresholds for GHGs in order to determine whether a source's emissions are a regulated NSR pollutant under Title V and PSD. *** Fugitive emissions from each of the volatile organic liquid storage tanks were calculated using the EPA Tanks 4.0.9d program and were determined to be negligible. α Worst Case Emissions (tons/yr) = Worst Case Emissions from Dryer Fuel Combustion and Dryer/Mixer Process + Worst Case Emissions from Hot Oil Heater Fuel Combustion + Emissions from each of the Generators. (1) Limited PTE based upon annual production and fuel usage limits to comply with 326 IAC 2-2 (PSD) and 326 IAC 2-8 (FESOP). (2) Limited PTE based upon annual production limit and lb/ton emission limits to comply with 326 IAC 2-2 (PSD) and 326 IAC 2-8 (FESOP). (3) Limited PTE based upon annual production limit to comply with 326 IAC 2-2 (PSD) & 326 IAC 2-8 (FESOP). (4) Limited PTE based upon maximum annual VOC usage limit to comply with 326 IAC 2-8 (FESOP).										

(a) FESOP Status

This existing source is not a Title V major stationary source, because the potential to emit criteria pollutants from the entire source will be limited to less than the Title V major source threshold levels. In addition, this existing source is not a major source of HAPs, as defined in 40 CFR 63.41, because the potential to emit HAPs is limited to less than ten (10) tons per year for a single HAP and twenty-five (25) tons per year of total HAPs. Therefore, this source is an area source under Section 112 of the Clean Air Act and is subject to the provisions of 326 IAC 2-8 (FESOP).

- (1) In order to comply with the requirements of 326 IAC 2-8-4 (FESOP), PM10, PM2.5, SO2, NOx, VOC, and CO emissions from the dryer/mixer shall be limited as follows:
- (A) The amount of hot-mix asphalt processed shall not exceed 1,478,987 tons per twelve (12) consecutive month period, with compliance determined at the end of each month. *This is a change from the existing limit of 600,000 tons of asphalt mix per twelve (12) month consecutive period. This is a Title I change;*
 - (B) The PM10 emissions from the dryer/mixer shall not exceed 0.112 pounds per ton of asphalt processed. *This is a change from the existing limit of 0.13 pounds of PM10 per ton of asphalt mix. This is a Title I change;*
 - (C) The PM2.5 emissions from the dryer/mixer shall not exceed 0.119 pounds per ton of asphalt processed. *This is a new requirement for this source. This is a Title I change;*
 - (D) The SO2 emissions from the dryer/mixer shall not exceed 0.058 pounds per ton of asphalt processed. *This is a new requirement for this source. This is a Title I change;*
 - (E) The NOx emissions from the dryer/mixer shall not exceed 0.055 pounds per ton of asphalt processed. *This is a new requirement for this source. This is a Title I change;*
 - (F) The VOC emissions from the dryer/mixer shall not exceed 0.032 pounds per ton of asphalt processed. *This is a new requirement for this source. This is a Title I change; and*
 - (G) The CO emissions from the dryer/mixer shall not exceed 0.130 pounds per ton of asphalt processed. *This is a new requirement for this source. This is a Title I change.*

Compliance with these limits, combined with the potential to emit PM10, PM2.5, SO2, NOx, VOC, and CO from all other emission units at this source, shall limit the source-wide total potential to emit of PM10, PM2.5, SO2, NOx, VOC, and CO to less than 100 tons per 12 consecutive month period, each, and shall render 326 IAC 2-7 (Part 70 Permits), 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), and 326 IAC 2-1.1-5 (Nonattainment New Source Review) not applicable.

- (2) In order to comply with the requirements of 326 IAC 2-8-4 (FESOP), SO2, NOx, and HAP emissions from the dryer/mixer shall be limited as follows:
- (A) Fuel and Slag Specifications
 - (i) The sulfur content of No. 2 fuel oil shall continue to not exceed 0.50% by weight. *This is an existing requirement for this source.*
 - (ii) The sulfur content of No. 4 fuel oil shall not exceed 0.50% by weight. *This is a new requirement for this source. This is a Title I change.*

- (iii) The sulfur content of the residual oil (No. 5 or No. 6 fuel oil) shall not exceed 0.50% by weight. *This is a new requirement for this source. This is a Title I change.*
- (iv) The sulfur content of the waste oil shall not exceed 1.00% by weight. *This is an existing requirement for this source.*
- (v) The waste oil shall not contain more than 1.02% ash, 0.20% chlorine, and 0.01% lead, by weight. *This is a new requirement for this source. This is a Title I change.*
- (vi) The HCl emissions shall not exceed 13.2 pounds of HCl per 1,000 gallons of waste oil burned. *This is a new requirement for this source. This is a Title I change.*
- (vii) The sulfur content of the Blast Furnace slag shall not exceed 1.50% by weight. *This is a new requirement for this source. This is a Title I change.*
- (viii) The SO₂ emissions from the dryer/mixer shall not exceed 0.740 pounds per ton of Blast Furnace slag processed in the aggregate mix. *This is a new requirement for this source. This is a Title I change.*
- (ix) The sulfur content of the Steel slag shall not exceed 1.50% by weight. *This is a new requirement for this source. This is a Title I change.*
- (x) The SO₂ emissions from the dryer/mixer shall not exceed 0.0014 pounds per ton of Steel slag processed in the aggregate mix. *This is a new requirement for this source. This is a Title I change.*

(B) Single Fuel and Slag Usage Limitations:

When combusting only one type of fuel per twelve (12) consecutive month period in the dryer/mixer burner, the usage of fuel and slag shall be limited as follows:

- (i) Natural gas usage shall not exceed 876 million cubic feet (MMCF) per twelve (12) consecutive month period, with compliance determined at the end of each month. *This is a change from the existing limit of 180 million cubic feet per twelve (12) month period rolled on a monthly basis. This is a Title I change;*
- (ii) No. 2 fuel oil usage shall not exceed 1,225,204 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month. *This is a change from the existing limit of 1,200,000 gallons per twelve (12) month period rolled on a monthly basis. This is a Title I change;*
- (iii) No. 4 fuel oil usage shall not exceed 1,159,860 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month. *This is a new limit for this source. This is a Title I change;*
- (iv) Residual oil (No. 5 or No. 6 fuel oil) usage shall not exceed 1,108,146 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month. *This is a new limit for this source. This is a Title I change;* and
- (v) Waste oil usage shall not exceed 591,765 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month. *This is a change from the existing limit of 600,000 gallons per*

twelve (12) month period rolled on a monthly basis". This is a Title I change;

Note: The source is only permitted to burn the above-mentioned fuels. *This is a new requirement for this source. This is a Title I change.*

(vi) The blast furnace slag usage shall not exceed 150,000 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;* and

(vii) A steel slag usage limit is not required for the source to comply with their FESOP SO₂ Limit, since unlimited use results in a potential to emit (PTE) SO₂ of only 1.03 tons/yr (see TSD Appendix A.1, page 6 of 20). To form a conservative estimate, SO₂ emissions are based on the "worst case" assumption that steel slag usage corresponds to 100% of the aggregate used to produce hot-mix asphalt (see TSD Appendix A.2, page 6 of 20).

(C) Multiple Fuel and Slag Usage Limitation:

When combusting more than one fuel per twelve (12) consecutive month period in the dryer/mixer burner, in conjunction with the use of slag in the aggregate mix, emissions from the dryer/mixer shall be limited as follows:

(i) SO₂ emissions from the dryer/mixer shall not exceed 98.99 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.*

$$S = 43.49 + 55.50 = 98.99 \text{ tons/yr}$$

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

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

where:

- S = tons of sulfur dioxide emissions for a 12-month consecutive period
- G = million cubic feet of natural gas used in the last 12 months
- O = gallons of No. 2 fuel oil used in the last 12 months
- F = gallons of No. 4 fuel oil used in the last 12 months
- R = gallons of residual oil (No. 5 or No. 6 fuel oil) used in the last 12 months
- W = gallons of waste oil used in the last 12 months
- B = tons of blast furnace slag used in the last 12 months
- T = tons of steel slag used in the last 12 months
- E_G = 0.6 lbs/MMCF of natural gas
- E_O = 71.0 lbs/1000 gallons of No. 2 fuel oil
- E_F = 75.0 lbs/1000 gallons of Waste oil
- E_R = 78.5 lbs/1000 gallons of residual oil (No. 5 or No. 6 fuel oil)
- E_W = 147.0 lbs/1000 gallons of waste oil
- E_B = 0.74 lbs/ton of Blast Furnace slag used
- E_T = 0.0014 lbs/ton of Steel slag used

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

- (ii) NO_x emissions from the dryer/mixer shall not exceed 83.22 tons per twelve (12) consecutive month period, with compliance determined at the end of each month. *This is a new requirement for this source. This is a Title I change.*

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

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

where:

- N = tons of nitrogen oxide emissions for a 12-month consecutive period
- G = million cubic feet of natural gas used in the last 12 months
- O = gallons of No. 2 fuel oil used in the last 12 months
- F = gallons of No. 4 fuel oil used in the last 12 months
- R = gallons of residual oil (No. 5 or No. 6 fuel oil) used in the last 12 months
- W = gallons of waste oil used in the last 12 months
- E_G = 190 lbs/million cubic feet of natural gas
- E_O = 24.0 lbs/1000 gallons of No. 2 fuel oil
- E_F = 47.0 lbs/1000 gallons of No. 4 fuel oil
- E_R = 47.0 lbs/1000 gallons of residual oil (No. 5 or No. 6 fuel oil)
- E_W = 19.0 lbs/1000 gallons of waste oil

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

- (iii) The unlimited PTE CO₂e of this source is less than 100,000 tons per year. Therefore, a CO₂e emissions limit is not required to allow for compliance with FESOP.
- (iv) HCl emissions from the dryer/mixer shall not exceed 3.91 tons per twelve (12) consecutive month period, with compliance determined at the end of each month. *This is a new requirement for this source. This is a Title I change.*

The Permittee shall limit fuel usage in the dryer/mixer burner according to the following formula: *This is a new requirement for this source. This is a Title I change.*

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

where:

- HCl = tons of hydrogen chloride emissions for a 12-month consecutive period
- W = gallons of waste oil used in the last 12 months.
- E_W = 13.2 lbs/1000 gallons of waste oil.

- (D) Asphalt Shingle Usage Limitations:
Pursuant to 326 IAC 2-8-4 (FESOP), and in order to render the requirements of 326 IAC 2-2 (PSD) and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAPs)) not applicable, the Permittee shall not grind recycled asphalt shingles (RAS) on-site and shall only use certified asbestos-free recycled shingles, post consumer waste and/or factory seconds, as an additive in its aggregate mix. *This is a new requirement for this source. This is a Title I change.*

Note: Since the source does not intend to grind shingles at this plant, they will be required to use/purchase only supplier certified asbestos-free post consumer waste and/or factory seconds shingles in their aggregate mix. This requirement will be included, because it is the physical act of grinding that releases asbestos into the air. Therefore, the company performing the grinding would need to test the shingles prior to grinding, in order for the testing to be effective. A new condition limiting the use of asphalt shingles in the aggregate mix to only those that are asbestos-free, has been added to the permit.

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

- (4) In order to comply with the requirements of 326 IAC 2-8-4 (FESOP), the VOC emissions from cold-mix (cutback) asphalt production shall be limited as follows:
- (A) VOC emissions from the sum of the liquid binders shall not exceed 62.62 tons per twelve (12) consecutive month period with compliance determined at the end of each month. *This is a change from the existing limit of no more than 47 tons of VOC emissions emitted per twelve (12) consecutive months. This is a Title I change.*
- (B) Liquid binders used in the production of cold mix asphalt shall be defined as follows:
- (i) Cut back asphalt rapid cure, containing a maximum of 25.3% of the liquid binder by weight of VOC solvent and 95.0% by weight of VOC solvent evaporating.
 - (ii) Cut back asphalt medium cure, containing a maximum of 28.6% of the liquid binder by weight of VOC solvent and 70.0% by weight of VOC solvent evaporating.
 - (iii) Cut back asphalt slow cure, containing a maximum of 20.0% of the liquid binder by weight of VOC solvent and 25.0% by weight of VOC solvent evaporating.
 - (iv) Emulsified asphalt with solvent, containing a maximum of 15.0% of liquid binder by weight of VOC solvent and 46.4% by weight of the VOC solvent in the liquid blend evaporating. The percent oil distillate in emulsified asphalt with solvent liquid, as determined by ASTM, must be seven percent (7%) or less of the total emulsion by volume.

- (v) Other asphalt with solvent binder, containing a maximum 25.9% of the liquid binder of VOC solvent and 2.5% by weight of the VOC solvent evaporating.
- (C) When using only one type of liquid binder per twelve (12) consecutive month period, the usage of liquid binder shall be limited as follows:
- (i) The amount of VOC solvent used in rapid cure cutback asphalt shall not exceed 65.92 tons per twelve (12) consecutive month period, with compliance determined at the end of each month. *This is a change from the existing VOC emission limit of 50 tons of VOC solvent per twelve (12) consecutive month period rolled on a monthly basis. This is a Title I change.*
- (ii) The amount of VOC solvent used in medium cure cutback asphalt shall not exceed 89.46 tons per twelve (12) consecutive month period, with compliance determined at the end of each month. *This is a change from the existing VOC emission limit of 68 tons of VOC solvent per twelve (12) consecutive month period rolled on a monthly basis. This is a Title I change.*
- (iii) The amount of VOC solvent used in slow cure cutback asphalt shall not exceed 250.49 tons per twelve (12) consecutive month period, with compliance determined at the end of each month. *This is a change from the existing VOC emission limit of 190 tons of VOC solvent per twelve (12) consecutive month period rolled on a monthly basis. This is a Title I change.*
- (iv) The amount of VOC solvent used in emulsified asphalt shall not exceed 134.96 tons per twelve (12) consecutive month period, with compliance determined at the end of each month. *This is a change from the existing VOC emission limit of 102 tons of VOC solvent per twelve (12) consecutive month period rolled on a monthly basis. This is a Title I change.*
- (v) The amount of VOC solvent used in all other asphalt shall not exceed 2,504.90 tons per twelve (12) consecutive month period, with compliance determined at the end of each month. *This is a change from the existing VOC emission limit of 1,900 tons of VOC solvent per twelve (12) consecutive month period rolled on a monthly basis. This is a Title I change.*
- (D) When using more than one liquid binder per twelve (12) consecutive month period, VOC emissions shall be limited as follows:
- (i) The VOC solvent allotments in (C)(i) through (C)(v) above shall be adjusted when more than one type of binder is used per twelve (12) consecutive month period with compliance determined at the end of each month. In order to determine the tons of VOC emitted per each type of binder, use the following formula and divide the tons of VOC solvent used for each type of binder by the corresponding adjustment factor listed in the table that follows. *This is a Title I change.*

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

Type of Binder	Adjustment Factor	<i>changed from Adjustment Ratio</i>
Cutback Asphalt Rapid Cure	1.053	1
Cutback Asphalt Medium Cure	1.429	1.36
Cutback Asphalt Slow Cure	4.000	3.8
Emulsified Asphalt	2.155	2.04
Other Asphalt	40.0	38

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

- (5) Pursuant to 326 IAC 2-8-4 (FESOP), the Permittee shall continue to control PM, PM10, and PM2.5 emissions from the paved and unpaved roads according to the fugitive dust plan, included as Attachment A to the permit.

(b) PSD Minor Source

This existing source is not a major stationary source, under PSD (326 IAC 2-2), because the potential to emit PM is limited to less than 250 tons per year, the potential to emit all other attainment regulated criteria pollutants are less than 250 tons per year, the potential to emit greenhouse gases (GHGs) is less than the PSD subject to regulation threshold of one hundred thousand (100,000) tons of CO₂ equivalent emissions (CO₂e) per year, and this source is not one of the twenty-eight (28) listed source categories, as specified in 326 IAC 2-2-1(gg)(1). Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply.

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

- (1) The amount of hot-mix asphalt processed shall not exceed 1,478,987 tons per twelve (12) consecutive month period, with compliance determined at the end of each month. *This is a change from the existing limit of 600,000 tons of asphalt mix per twelve (12) month consecutive period. This is a Title I change.*
- (2) PM emissions from the dryer/mixer shall not exceed 0.274 pounds per ton of asphalt processed. *This is a new requirement for this source. This is a Title I change.*

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

(c) Emission Offset Minor Status

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

Federal Rule Applicability

New Source Performance Standards (NSPS)

(a) 40 CFR 60, Subpart I - Standards for Hot-mix Asphalt Facilities

The existing stationary drum-mix, hot-mix asphalt plant, constructed in 2007, is still subject to the New Source Performance Standard, 40 CFR 60, Subpart I (326 IAC 12), because it continues to meet the definition of a hot-mix asphalt facility pursuant to the rule and was constructed after June 11, 1973. *This is an existing requirement for this source.*

The units subject to this rule include the following:

- (1) Dryers
- (2) Systems for screening, handling, storing, and weighing hot aggregate
- (3) Systems for loading, transferring, and storing mineral filler
- (4) Systems for mixing hot-mix asphalt
- (5) The loading, transfer, and storage systems associated with emission control systems

Therefore, pursuant to 40 CFR 60.92(a), particulate matter emissions from the above listed units, shall not exceed four hundredths (0.04) grains per dry standard cubic foot (gr/dscf), and visible emissions shall not exceed twenty percent (20%) opacity.

The source will continue to comply with this rule by using a baghouse to limit particulate matter emissions from the dryer/mixer to less than four hundredths (0.04) gr/dscf, and by applying the management techniques outlined in their Fugitive Dust Plan (included as Attachment A of the permit).

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

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

Note: this NSPS includes testing requirements applicable to this source.

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

(b) 40 CFR 60, Subpart Dc - Standards for Small Industrial/Commercial/Institutional Steam Generating Units

- (1) The requirements of the New Source Performance Standard for Small Industrial-Commercial-Institutional Steam Generating Units, 40 CFR 60, Subpart Dc (326 IAC 12), are not included in the permit, for the hot-mix asphalt dryer/mixer, since the dryer/mixer burner is a direct-fired process unit and not a steam generating unit, as defined in 40 CFR 60.41c.
- (2) The requirements of the New Source Performance Standard for Small Industrial-Commercial-Institutional Steam Generating Units, 40 CFR 60, Subpart Dc (326 IAC 12), are not included in the permit for the electrically powered portable crusher, because the crusher does not combust any fuel.

- (3) The requirements of the New Source Performance Standard for Small Industrial-Commercial-Institutional Steam Generating Units, 40 CFR 60, Subpart Dc (326 IAC 12), are not included in the permit, for the hot oil heater, since it has a maximum design heat input capacity of less than the applicability threshold of ten (10) MMBtu/hr.

(c) 40 CFR 60, Subpart Kb - Standards for Volatile Organic Liquid Storage Vessels

- (1) The requirements of the New Source Performance Standard for Volatile Organic Liquid Storage Vessels, 40 CFR 60, Subpart Kb (326 IAC 12), are not included in the permit for the existing liquid asphalt cement storage tank TANK-1a, because although the tank was constructed in 2004, after the rule applicability date of July 23, 1984, and the tank has a maximum storage capacity greater than seventy-five cubic meters (75 m³) (19,813 gallons) but less than 151 m³ (39,890 gallons), the liquid stored in the tank has a maximum true vapor pressure of less than fifteen kiloPascals (15.0 kPa).
- (2) The requirements of the New Source Performance Standard for Volatile Organic Liquid Storage Vessels, 40 CFR 60, Subpart Kb (326 IAC 12), are not included in the permit for the existing liquid asphalt cement storage tank TANK-1b, the existing No. 4 fuel oil storage tank TANK-2a, or the existing No. 2 fuel oil storage tank TANK-2b, because although each tank was constructed in 2004, after the rule applicability date of July 23, 1984, each tank has a maximum storage capacity of less than seventy-five cubic meters (75 m³) (19,813 gallons), and the liquid stored in each tank has a maximum true vapor pressure of less than fifteen kiloPascals (15.0 kPa).

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

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

(d) 40 CFR 60, Subpart UU - Standards for Asphalt Processing and Asphalt Roofing Manufacture

The requirements of the New Source Performance Standard for Asphalt Processing and Asphalt Roofing Manufacture, 40 CFR 60, Subpart UU (2U) (326 IAC 12), are not included in the permit, because the stationary drum-mix, hot-mix asphalt plant still does not meet the definition of an asphalt processing plant, since it does not blow asphalt, or an asphalt roofing plant since it does not produce asphalt roofing products, and finally pursuant to §60.101(a) the stationary drum-mix, hot-mix asphalt plant is still not a petroleum refinery since it is not engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, lubricants, or other products through distillation of petroleum or through redistillation, cracking or reforming of unfinished petroleum derivatives.

(e) 40 CFR 60, Subpart OOO - Standards for Nonmetallic Mineral Processing Plants

This portable drum hot-mix asphalt plant is subject to the New Source Performance Standard for Nonmetallic Mineral Processing Plants, 40 CFR 60, Subpart OOO (3O) (326 IAC 12), whenever the electrically powered portable crusher is being used to reduce the size of nonmetallic minerals embedded in the Recycled Asphalt Pavement (RAP). *This is a new requirement for this source. This is a Title I change.*

The units subject to this rule include the following:

- (1) crushers;
- (2) grinding mills; and
- (3) subsequent affected facilities up to, but not including, the first storage silo or bin, such as:
 - (A) bucket elevators;

- (B) belt conveyors;
- (C) screening operations; and
- (D) bagging operations;

Therefore, pursuant to 40 CFR 60.672(b) and (c), fugitive particulate matter emissions from any transfer point on belt conveyors or from any other of the above-listed facilities, except the crusher, shall not exceed seven percent (7%) opacity, and fugitive particulate matter emissions from the crusher shall not exceed twelve percent (12%) opacity.

The source will comply with this rule by applying the management techniques outlined in their Fugitive Dust Plan (included as Attachment A of the permit).

The crushing operation is therefore subject to the following requirements of 40 CFR 60, Subpart OOO (included as Attachment C of the permit):

- | | |
|---|--|
| (1) 40 CFR 60.670(a), (d), (e), and (f) | (6) 40 CFR 60.675(a), (c)(1)(i), (ii), (iii), (c)(3), (d), (e), (g), and (i) |
| (2) 40 CFR 60.671 | |
| (3) 40 CFR 60.672(b), (d), and (e) | (7) 40 CFR 60.676(a), (b)(1), (f), (g), (h), (i), (j), and (k) |
| (4) 40 CFR 60.673 | |
| (5) 40 CFR 60.674(b) | (8) Table 1 and Table 3 |

Note: this NSPS includes testing requirements applicable to this source.

The requirements of 40 CFR Part 60, Subpart A – General Provisions, which are incorporated as 326 IAC 12-1, apply to the crushing operation except as otherwise specified in 40 CFR 60, Subpart OOO.

- (f) 40 CFR 60, Subpart UUU - Standards for Calciners and Dryers in Mineral Industries
The requirements of the New Source Performance Standard for Calciners and Dryers in Mineral Industries, 40 CFR 60, Subpart UUU (3U) (326 IAC 12), are not included in the permit, because the stationary drum-mix, hot-mix asphalt plant still does not meet the definition of a mineral processing plant, since it does not process or produce any of the following minerals, their concentrates or any mixture of which the majority (>50 percent) is any of the following minerals or a combination of these minerals: alumina, ball clay, bentonite, diatomite, feldspar, fire clay, fuller's earth, gypsum, industrial sand, kaolin, lightweight aggregate, magnesium compounds, perlite, roofing granules, talc, titanium dioxide, and vermiculite.
- (g) 40 CFR 60, Subpart IIII - NSPS for Stationary Compression Ignition Internal Combustion Engines
 - (1) The requirements of the New Source Performance Standard for Stationary Compression Ignition Internal Combustion Engines, 40 CFR 60, Subpart IIII (4I) (326 IAC 12), are not included in the permit for the stationary drum dryer/mixer, or the hot oil heater, since each unit is a direct-fired process unit and not a compression ignition internal combustion engine, as defined in 40 CFR 60.4219.
 - (2) The requirements of the New Source Performance Standard for Stationary Compression Ignition Internal Combustion Engines, 40 CFR 60, Subpart IIII (4I) (326 IAC 12), are not included in the permit for the electrically powered portable crusher, since the crusher does not combust any fuel.
- (h) 40 CFR 60, Subpart JJJJ - NSPS for Stationary Spark Ignition Internal Combustion Engines
 - (1) The requirements of the New Source Performance Standard for Stationary Spark Ignition Internal Combustion Engines, 40 CFR 60, Subpart JJJJ (4J) (326 IAC 12), are not included in the permit for the stationary drum dryer/mixer or the hot oil heater, since each

unit is a direct-fired process unit and not a spark ignition internal combustion engine, as defined in 40 CFR 60.4248.

- (2) The requirements of the New Source Performance Standard for Stationary Spark Ignition Internal Combustion Engines, 40 CFR 60, Subpart JJJJ (4J) (326 IAC 12), are not included in the permit for the electrically powered portable crusher, since the crusher does not combust any fuel.
- (i) There are no other New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR 60) included in the permit.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

- (a) 40 CFR 63, Subpart ZZZZ - NESHAP for Stationary Reciprocating Internal Combustion Engines
 - (1) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Stationary Reciprocating Internal Combustion Engines, 40 CFR 63.6580, Subpart ZZZZ (4Z) (326 IAC 20-84), are not included in the permit for the stationary drum dryer/mixer or the hot oil heater, since each unit is a direct-fired process unit and not a reciprocating internal combustion engine, as defined in 40 CFR 63.6675.
 - (2) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Stationary Reciprocating Internal Combustion Engines, 40 CFR 63.6580, Subpart ZZZZ (4Z) (326 IAC 20-84), are not included in the permit for the electrically powered portable crusher, because the crusher does not combust any fuel.
- (b) 40 CFR 63, Subpart DDDDD - NESHAPs for Industrial, Commercial, and Institutional Boilers and Process Heaters

The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Industrial, Commercial, and Institutional Boilers and Process Heaters, 40 CFR 63, Subpart DDDDD (5D) (326 IAC 20), are not included in the permit, since this source is not a major source of HAPs, and is not located at nor is a part of a major source of HAP emissions.
- (c) 40 CFR 63, Subpart LLLLL - NESHAPs for Asphalt Processing and Asphalt Roofing Manufacturing

The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Asphalt Processing and Asphalt Roofing Manufacturing, 40 CFR 63, Subpart LLLLL (5L) (326 IAC 20-71), are not included in the permit, because the stationary drum-mix, hot-mix asphalt plant still does not meet the definition of an asphalt processing plant or an asphalt roofing manufacturing facility, since it does not engage in the preparation of asphalt flux or asphalt roofing materials. Additionally, it is not a major source of HAPs, and is not located at nor is it a part of a major source of HAP emissions.
- (d) 40 CFR 63, Subpart CCCCC - NESHAP for the Source Category Identified as Gasoline Dispensing Facilities (GDF)

The requirements of the National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities, 40 CFR 63, Subpart CCCCC (6C) (326 IAC 20), are not included in the permit, since the fuel transfer and dispensing operation is only used to handle petroleum fuels, other than gasoline.
- (e) 40 CFR 63, Subpart JJJJJ - NESHAPs for Industrial, Commercial, and Institutional Boilers Area Sources
 - (1) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Industrial, Commercial, and Institutional Boilers Area Sources, 40 CFR 63, Subpart JJJJJ (6J), are not included in the permit for the dryer/mixer burner, since although this existing source is an area source of hazardous air pollutants (HAP), as defined in §63.2, the dryer/mixer burner is a direct-fired process unit and not a boiler, as defined in 40 CFR 63.11237.

- (2) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Industrial, Commercial, and Institutional Boilers Area Sources, 40 CFR 63, Subpart JJJJJJ (6J), are not included in the permit for the hot oil heater, because although this existing source is an area source of hazardous air pollutants (HAP), as defined in §63.2, the hot oil heater does not meet the definition of a boiler, as defined in §63.11237, since heat transfer oil and not water is used as the indirect heating media.
- (f) 40 CFR 63, Subpart AAAAAAA - NESHAP for Area Sources: Asphalt Processing and Asphalt Roofing Manufacturing
The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Area Sources: Asphalt Processing and Asphalt Roofing Manufacturing, 40 CFR 63, Subpart AAAAAAA (7A) (326 IAC 20), are not included in the permit, because although the stationary drum-mix, hot-mix asphalt plant is an area source of hazardous air pollutant (HAP) emissions, as defined in §63.2, it does not meet the definition of an asphalt processing operation or an asphalt roofing manufacturing operation, as defined in §63.11566, since it does not engage in the preparation of asphalt flux or asphalt roofing materials.
- (g) There are no other National Emission Standards for Hazardous Air Pollutants (NESHAPs) (326 IAC 14, 326 IAC 20 and 40 CFR Part 63) included in the permit.

Compliance Assurance Monitoring (CAM)

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

State Rule Applicability - Entire Source

- (a) 326 IAC 1-6-3 (Preventive Maintenance Plan)
Any person responsible for operating any facility required to obtain a permit under the Federally Enforceable State Operating Permit (FESOP) Program, 326 IAC 2-8, shall prepare and maintain a preventive maintenance plan in accordance with 326 IAC 1-6-3(a), whenever a control device is required for compliance with any applicable emission limitations and/or air pollution control regulations. The drum dryer/mixer process still requires the use of a control device to limit the particulate emissions of PM, PM10 and PM2.5 to less than PSD and TV thresholds. Therefore a PMP is still required for these units and their associated control devices. *This is an existing requirement for this source.*
- (b) 326 IAC 1-7 (Stack Height)
The requirements of 326 IAC 1-7 (Stack Height) are not included in the permit because although the unlimited and uncontrolled PM10 and SO2 emissions from this existing source, are each greater than one hundred (100) tons per year, asphalt concrete plants are still specifically exempted under 326 IAC 1-7-5(c).
- (c) 326 IAC 2-1.1-5 (Nonattainment New Source Review)
Harrison County is classified as attainment or unclassifiable in Indiana for all regulated NSR pollutants. Therefore, pursuant to 326 IAC 2-1.1-5, the Nonattainment New Source Review requirements do not apply, and are not included in the permit.
- (d) 326 IAC 2-2 (Prevention of Significant Deterioration(PSD))
PSD applicability is discussed under the "PTE of the Entire Source after Issuance of the FESOP" section above.
- (e) 326 IAC 2-3 (Emission Offset)
Emission Offset applicability is discussed under the "PTE of the Entire Source after Issuance of the FESOP" section above.

- (f) 326 IAC 2-6 (Emission Reporting)
This source is still not subject to 326 IAC 2-6 (Emission Reporting) because it is not required to have an operating permit pursuant to 326 IAC 2-7 (Part 70); it is not located in Lake, Porter, or LaPorte County, and its potential to emit lead is less than five (5) tons per year. Therefore, pursuant to 326 IAC 2-6-1(b), the source is still only subject to additional information requests as provided for in 326 IAC 2-6-5. *This is an existing requirement for this source.*
- (g) 326 IAC 2-8-4 (FESOP)
FESOP applicability is discussed under the "PTE of the Entire Source after Issuance of the FESOP" section above.
- (h) 326 IAC 5-1 (Opacity Limitations)
This existing stationary source is located in Harrison County, which is classified as attainment or unclassifiable in Indiana for all regulated NSR pollutants. Therefore, pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:
- (1) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4. *This is a change from an average of less than thirty percent (30%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4. This is a Title I change.*
 - (2) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period. *This is an existing requirement for this source.*
- (i) 326 IAC 6-4 (Fugitive Dust Emissions Limitations)
The source is still subject to the requirements of 326 IAC 6-4, because the asphalt load-out, silo filling, and on-site yard, material storage piles, material processing and handling, material crushing, screening, and conveying, and paved and unpaved roads, each, continue to have the potential to emit fugitive particulate emissions. Pursuant to 326 IAC 6-4 (Fugitive Dust Emissions Limitations), the existing source shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4. *This is an existing requirement for this source.*
- (j) 326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations)
The source is still subject to the requirements of 326 IAC 6-5, because the asphalt load-out, silo filling, and on-site yard, material storage piles, material processing and handling, material crushing, screening, and conveying, and paved and unpaved roads were constructed after December 13, 1985, and continue to have potential fugitive particulate emissions greater than twenty-five (25) tons per year. Therefore, pursuant to 326 IAC 6-5, fugitive particulate matter emissions shall continue to be controlled according to the Fugitive Particulate Emissions Control Plan, which is included as Attachment A to the permit. *This is an existing requirement for this source.*
- (k) 326 IAC 12 (New Source Performance Standards)
See Federal Rule Applicability Section of this TSD.
- (l) 326 IAC 20 (Hazardous Air Pollutants)
See Federal Rule Applicability Section of this TSD.
- (m) 329 IAC 13-8 (Used Oil Requirements)
The used oil requirements (326 IAC 13-8) have been removed from the permit, because they are regulated by another agency. *This is a Title I change.*

State Rule Applicability – Individual Facilities

Drum-Mix, Hot-Mix Asphalt Plant

- (a) 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))
The potential to emit HAPs, from the existing drum-mix hot-mix asphalt plant, is less than 10 tons per year of a single HAP and less than 25 tons per year of a combination of HAPs. Therefore, the requirements of 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP)) do not apply, and are not included in the in the permit.
- (b) 326 IAC 6-2 (Particulate Emissions from Indirect Heating Units)
The existing dryer burner is still not a source of indirect heating, as defined in 326 IAC 1-2-19 "Combustion for Indirect Heating". Therefore, the requirements of 326 IAC 6-2 still do not apply, and are not included in the permit.
- (c) 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)
The existing dryer/mixer continues to be subject to 40 CFR 60, Subpart I (Standards of Performance for Hot-mix Asphalt Facilities), which is incorporated by reference through 326 IAC 12. Therefore, pursuant to 326 IAC 6-3-1(c)(5), the existing dryer/mixer is still not subject to the requirements of 326 IAC 6-3 because it is subject to the more stringent particulate limit established in 326 IAC 12.
- (d) 326 IAC 7-1.1 (Sulfur Dioxide Emissions Limitations)
The existing dryer burner continues to be subject to 326 IAC 7-1.1 because the potential to emit SO₂ is equal to or greater than twenty-five (25) tons/year, or ten (10) pounds/hour, (unlimited potential emissions are 234.64 tons per year). Therefore, pursuant to this rule, sulfur dioxide emissions from the dryer burner shall continue to be limited to:
- (A) Five-tenths (0.5) pounds per million Btu heat input for distillate oil combustion.
- (B) One and six tenths (1.6) pounds per million Btu heat input for residual oils.
- Note: No. 2 and No. 4 fuel oils are each considered distillate oils, and residual oil (No. 5 or No. 6 fuel oil) and waste oil are each considered residual oils. *This is a new requirement for this source. This is a Title I change.*
- (e) 326 IAC 7-2-1 (Sulfur Dioxide Reporting Requirements)
Pursuant to 326 IAC 7-2-1(c), the source shall continue to submit reports of calendar month average sulfur content, heat content, fuel consumption, and sulfur dioxide emission rate (pounds SO₂ per MMBtu), to the OAQ upon request. *This is an existing requirement for this source.*
- (f) 326 IAC 8-1-6 (VOC rules: General Reduction Requirements for New Facilities)
The unlimited potential to emit VOCs, from the existing dryer/mixer, is greater than twenty-five (25) tons per year. However, the source has opted to limit the potential VOC emissions from the existing dryer/mixer to less than twenty-five (25) tons per year, therefore, rendering the requirements of 326 IAC 8-1-6 Best Available Control Technology (BACT) not applicable.

In order to render the requirements of 326 IAC 8-1-6 not applicable, the existing dryer/mixer shall be limited as follows:

- (1) The amount of hot-mix asphalt processed shall not exceed 1,478,987 tons per twelve (12) consecutive month period, with compliance determined at the end of each month. *This is a change from the existing limit of 600,000 tons of asphalt mix per twelve (12) month consecutive period. This is a Title I change;*

- (2) VOC emissions from the dryer/mixer shall not exceed 0.032 pounds of VOC per ton of asphalt produced. *This is a new requirement for this source. This is a Title I change.*

Compliance with these limits shall limit the potential VOC emissions from the existing dryer/mixer to less than twenty-five (25) tons per twelve (12) consecutive month period and shall render 326 IAC 8-1-6 BACT not applicable.

See Appendix A for the detailed calculations.

- (g) 326 IAC 8-6-1 (Organic Solvent Emission Limitations)
The existing dryer/mixer is still subject to 326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities). Therefore, the requirements of 326 IAC 8-6-1 (Organic Solvent Emission Limitations) still do not apply to the hot-mix asphalt production and are not included in the permit.
- (h) There are no other 326 IAC 8 Rules that are applicable to the stationary drum-mix, hot-mix asphalt plant.
- (i) 326 IAC 9-1 (Carbon Monoxide Emission Limits)
This existing stationary, drum-mix, hot-mix asphalt plant is still not one of the source types listed in 326 IAC 9-1-2. Therefore, the requirements of 326 IAC 9-1 do not apply and are not included in the permit.
- (j) 326 IAC 10-3 (Nitrogen Oxide Reduction Program for Specific Source Category)
The existing 100 MMBtu/hr dryer burner still does not meet the definition of an affected facility, as defined in 326 IAC 10-3-1(a), because it still has a maximum a heat input of less than two hundred fifty million (250,000,000) British thermal units per hour (MMBtu/hr); therefore, it is still not subject to this rule and the requirements are not included in the permit.

Electrically Powered Portable Crusher

- (a) 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))
The potential to emit HAPs from the electrically powered portable crusher is less than 10 tons per year of a single HAP and less than 25 tons per year of a combination of HAPs. Therefore, the requirements of 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP)) do not apply, and are not included in the in the permit.
- (b) 326 IAC 6-2 (Particulate Emissions from Indirect Heating Units)
The electrically powered portable crusher is not a source of indirect heating, as defined in 326 IAC 1-2-19 "Combustion for indirect heating". Therefore, the requirements of 326 IAC 6-2 do not apply, and are not included in this renewal.
- (c) 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)
Pursuant to 326 IAC 6-3-2, the particulate matter (PM) from the electrically powered portable crusher shall not exceed 55.44 pounds per hour when operating at a process weight rate of 150 tons (or 300,000 pounds) per hour. *This is a new requirement for this source. This is a Title I change.*

The pound per hour limitation was calculated with the following equation:

Interpolation and extrapolation of the data for the process weight rate in excess of sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 55.0 P^{0.11} - 40 \quad \text{where } E = \text{rate of emission in pounds per hour; and} \\ P = \text{process weight rate in tons per hour}$$

The source shall use wet suppression at all times the crusher, and any associated screens and/or conveyors are in operation in order to comply with this limit.

See Appendix A, for the detailed calculations.

- (d) 326 IAC 7-1.1 (Sulfur Dioxide Emissions Limitations)
The electrically powered portable crusher does not combust any fuel. Therefore, the requirements of 326 IAC 7-1.1 (Sulfur Dioxide Emissions Limitations) do not apply and are not included in the permit.
- (e) 326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities)
The unlimited VOC potential emissions from the electrically powered portable crusher are less than twenty-five (25) tons per year. Therefore, the requirements of 326 IAC 8-1-6 (General Reduction Requirements for New Facilities) do not apply and are not included in this renewal.
- (f) There are no other 326 IAC 8 Rules applicable to the electrically powered portable crusher.
- (g) 326 IAC 9-1 (Carbon Monoxide Emission Limits)
The electrically powered portable crusher does not combust any fuel. Therefore, the requirements of 326 IAC 9-1 (Carbon Monoxide Emission Limits) do not apply and are not included in the permit.
- (h) 326 IAC 10-3 (Nitrogen Oxide Reduction Program for Specific Source Category)
The electrically powered portable crusher does not meet the definition of an affected facility, as defined in 326 IAC 10-3-1(a), because it does not combust any fuel. Therefore, the requirements of 326 IAC 10-3 (Nitrogen Oxide Reduction Program for Specific Source Category) do not apply and are not included in the permit.
- (i) 326 IAC 10-5 (Nitrogen Oxide Reduction Program for Internal Combustion Engines (ICE))
The electrically powered portable crusher, approved for construction in 2012, does not meet the definition of an affected engine, as defined in 326 IAC 10-5-2(1), because it is not a large NOx SIP Call engine, as defined in 326 IAC 10-5-2(4), or a stationary internal combustion engine, as defined in 326 IAC 10-5-2(10). The electrically powered portable crusher does not combust any fuel.

Hot Oil Heating System

- (a) 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))
The potential to emit HAPs from the existing hot oil heater is less than 10 tons per year of a single HAP and less than 25 tons per year of a combination of HAPs. Therefore, the requirements of 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP)) do not apply, and are not included in the in the permit.
- (b) 326 IAC 6-2 (Particulate Emissions from Indirect Heating Units)
The one (1) existing hot oil heater, constructed in 2007 and having a maximum rated heat input capacity of 2.0 MMBtu/hr, is subject to 326 IAC 6-2-4 because it was constructed after the rule applicability date of September 21, 1983, and meets the definition of an indirect heating unit, as defined in 326 IAC 1-2-19, since it combusts fuel to produce usable heat that is to be transferred through a heat-conducting materials barrier or by a heat storage medium to a material to be heated so that the material being heated is not contacted by, and adds no substance to the products of combustion.

Pursuant to 326 IAC 6-2-4(a), for a total source maximum operating capacity rating of less than ten (10) MMBtu/hr, the pounds of particulate matter emitted per million Btu (lb/MMBtu) heat input shall not exceed six tenths (0.6) pounds per MMBtu (lb/MMBtu).

Therefore, particulate emissions from the hot oil heater shall continue to not exceed six tenths (0.6) pounds per MMBtu heat input. *This is a new requirement for this source. This is a Title I change.*

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

See Appendix A for the detailed calculations.

- (c) 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)
The existing hot oil heater is still not subject to the requirements of 326 IAC 6-3 because it is already otherwise subject to the more stringent particulate limits established in 326 IAC 6-2.
- (d) 326 IAC 7-1.1 (Sulfur Dioxide Emissions Limitations)
The unlimited potential to emit SO₂ from the existing hot oil heater is still less than twenty-five (25) tons/year, or ten (10) pounds/hour. Therefore, the requirements of 326 IAC 7-1.1 still do not apply and are not included in the permit for this facility.

See Appendix A for the detailed calculations.
- (e) 326 IAC 9-1 (Carbon Monoxide Emission Limits)
The existing hot oil heater is still not one of the source types listed in 326 IAC 9-1-2. Therefore, the requirements of 326 IAC 9-1 (Carbon Monoxide Emission Limits) still do not apply and are not included in the permit.
- (f) 326 IAC 10-3 (Nitrogen Oxide Reduction Program for Specific Source Category)
The existing 2.0 MMBtu/hr hot oil heater still does not meet the definition of an affected facility, as defined in 326 IAC 10-3-1(a), because the heater still has a maximum a heat input of less than two hundred fifty million (250,000,000) British thermal units per hour (MMBtu). Therefore, the requirements of 326 IAC 10-3 (Nitrogen Oxide Reduction Program for Specific Source Category) still do not apply and are not included in the permit.

Cold-Mix Asphalt Production Operation

- (a) 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))
The unlimited potential to emit of HAPs from the cold-mix asphalt production operation is still greater than ten (10) tons per year for any single HAP and/or greater than twenty-five (25) tons per year of a combination of HAPs. However, the source has agreed to continue to limit the potential to emit of HAPs from the cold-mix asphalt production operation to less than ten (10) tons per year for any single HAP and less than twenty-five (25) tons per year of a combination of HAPs. Therefore, the source is not subject to the requirements of 326 IAC 2-4.1. See PTE of the Entire Source After Issuance of the FESOP Section above.
- (b) 326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities)
The existing cold-mix asphalt production operation, a continued source of potential VOC emissions greater than twenty-five (25) tons per year, is still subject to the requirements of 326 IAC 8-5-2 (Miscellaneous Operations: Asphalt Paving); therefore, the requirements of 326 IAC 8-1-6 BACT still do not apply to the cold-mix asphalt production and are not included in the permit.

See Appendix A for the detailed calculations.
- (c) 326 IAC 8-5-2 (Asphalt paving rules)
Any paving application made after January 1, 1980, is subject to the requirements of 326 IAC 8-5-2. Pursuant to this rule, no person shall cause or allow the use of cutback asphalt or asphalt emulsion

containing more than seven percent (7%) oil distillate by volume of emulsion for any paving application except the following purposes: *This is an existing requirement for this source.*

- (a) penetrating prime coating;
- (b) stockpile storage; and
- (c) application during the months of November, December, January, February and March.
- (d) 326 IAC 8-6-1 (Organic Solvent Emission Limitations)
The existing cold-mix asphalt production operation, a continued source of potential VOC emissions greater than one hundred (100) tons per year, is still subject to the requirements of 326 IAC 8-5-2 (Miscellaneous Operations: Asphalt Paving). Additionally, this source elected to limit their VOC emissions to less than one hundred (100) tons per year. Therefore, the requirements of 326 IAC 8-6-1 (Organic Solvent Emission Limitations) still do not apply to the cold-mix asphalt production and are not included in the permit.

See Appendix A for the detailed calculations.

- (e) There are no other 326 IAC 8 Rules that are applicable to the cold-mix asphalt production operation.

Storage Tanks

- (a) 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))
The potential to emit HAPs from the two (2) existing liquid asphalt cement storage tanks TANK-1a or TANK-1b, the existing No. 4 fuel oil storage tank TANK-2a, or the existing No. 2 fuel oil storage tank TANK-2b, is less than 10 tons per year of a single HAP and less than 25 tons per year of a combination of HAPs, combined. Therefore, the requirements of 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP)) do not apply, and are not included in the in the permit.
 - (b) 326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities)
The potential to emit VOCs from the two (2) existing liquid asphalt cement storage tanks TANK-1a or TANK-1b, the existing No. 4 fuel oil storage tank TANK-2a, or the existing No. 2 fuel oil storage tank TANK-2b, is still less than twenty-five (25) tons per year, therefore, the requirements of 326 IAC 8-1-6 still do not apply and are not included in the in the permit.
- See Appendix A for the detailed calculations.
- (c) 326 IAC 8-4-3 (Petroleum Liquid Storage Facilities)
The two (2) existing liquid asphalt cement storage tanks TANK-1a or TANK-1b, the existing No. 4 fuel oil storage tank TANK-2a, or the existing No. 2 fuel oil storage tank TANK-2b, each, continue to have a maximum storage capacity of less than thirty-nine thousand (39,000) gallons. Therefore, are the requirements of 326 IAC 8-4-3 still do not apply to any of these tanks and are not included in the permit.
 - (d) 326 IAC 8-9 (Volatile Organic Liquid Storage Vessels)
The two (2) existing liquid asphalt cement storage tanks TANK-1a or TANK-1b, the existing No. 4 fuel oil storage tank TANK-2a, or the existing No. 2 fuel oil storage tank TANK-2b, are each not subject to the requirements of this rule because the source is not located in Clark, Floyd, Lake, or Porter Counties.

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

Compliance Determination and Monitoring Requirements

Permits issued under 326 IAC 2-8 are required to ensure that sources can demonstrate compliance with all applicable state and federal rules on a continuous basis. All state and federal rules contain compliance provisions; however, these provisions do not always fulfill the requirement for a continuous demonstration. When this occurs, IDEM, OAQ, in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-8-4. As a result, Compliance Determination Requirements are included in the permit. The Compliance Determination Requirements in Section D of the permit are those conditions that are found directly within state and federal rules and the violation of which serves as grounds for enforcement action.

If the Compliance Determination Requirements are not sufficient to demonstrate continuous compliance, they will be supplemented with Compliance Monitoring Requirements, also in Section D of the permit. Unlike Compliance Determination Requirements, failure to meet Compliance Monitoring conditions would serve as a trigger for corrective actions and not grounds for enforcement action. However, a violation in relation to a compliance monitoring condition will arise through a source's failure to take the appropriate corrective actions within a specific time period.

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

Compliance Determination & Testing Requirements

- (a) The existing dryer/mixer continues to have applicable compliance determination requirements as specified below:
- (1) In order to comply with the PM, PM10, and PM2.5 limitations in the permit, the baghouse for the dryer/mixer, shall continue to be in operation and control emissions from the dryer/mixer at all times when the dryer/mixer is in operation.
 - (2) The annual hot-mix asphalt production rate will be used to verify compliance with the PSD PM emission limitation, the FESOP PM10, PM2.5, SO₂, NO_x, VOC, and CO emission limitations, and the VOC BACT avoidance emission limitation.
 - (3) The slag and fuel characteristics (i.e., sulfur content) and usage rates will be used to verify compliance with the SO₂, NO_x, and HCL emission limitations.
 - (4) The waste oil characteristics (i.e., ash, chlorine, and lead content) and usage rates will be used to verify compliance with the FESOP PM, PM10, PM2.5, and HAP limitations.

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

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

- (b) The liquid binder characteristics (i.e., evaporation temperature) and usage rate, in the production of cold-mix cutback asphalt, will be used to verify compliance with the FESOP VOC emission limitation.

Testing Requirements

The testing requirements applicable to this source are as follows:

Emission Unit	Control Device	Pollutant	Timeframe for Testing	Frequency of Testing
Dryer/mixer	Baghouse	PM/PM10/PM2.5	Within 5 yrs of last valid test ⁽¹⁾	Once every five (5) years
Dryer/mixer	N/A	SO2	Within 180 days after initial use of Blast Furnace slag ⁽²⁾	One time test
RAP Crusher	N/A	PM/PM10/PM2.5 (opacity/fugitives)	Within 180 days after initial use ⁽³⁾	Once every five (5) years

- (1) Required for compliance with 40 CFR 60, Subpart I, 326 IAC 2-8 (FESOP). The last valid dryer/mixer stack test for PM and PM10 occurred on August 03, 2010. The source was in compliance at that time.
- (2) Testing shall only be performed if the company has not previously performed SO2 testing while using Blast Furnace slag in the aggregate mix at one of their other Indiana facilities. *This is a new requirement for this source. This is a Title I change.*
- (3) Required for compliance with 40 CFR 60, Subpart OOO, and 326 IAC 2-8 (FESOP), for fugitive emissions from affected facilities without water sprays. Testing shall only be performed if the company has not previously performed testing at one of their other Indiana facilities. Additionally, affected facilities controlled by water carryover from upstream water sprays that are inspected according to the requirements in §60.674(b) and §60.676(b) are exempt from this 5-year repeat testing requirement. *This is a new requirement for this source. This is a Title I change.*

Compliance Monitoring Requirements

The existing drum dryer/mixer baghouse stack exhaust, and the material processing and handling, screening, conveying, and material transfer points continue to have applicable compliance monitoring conditions as specified below:

Emission Unit & Control Device	Parameter	Frequency	Range	Excursions and Exceedances
Dryer/mixer baghouse stack exhaust (SV-1)	Visible Emissions	Once per day	normal/abnormal	Response Steps
	Pressure Drop	Once per day	3.0 to 6.0 inches	Response Steps
	Bags in baghouse	As needed	normal/abnormal	Response Steps
Crushers, conveyors, screens, and material transfer points	Visible Emissions	Once per day	normal/abnormal	Response Steps

These monitoring conditions are necessary because the baghouse used in conjunction with the hot-mix dryer/mixer must operate properly to ensure continued compliance with 40 CFR 60, Subpart I, 326 IAC 2-8 (FESOP), and the limits that render 326 IAC 2-2 (PSD), and 326 IAC 2-7 (Part 70 Permit Program) not applicable.

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

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

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

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

Conclusion and Recommendation

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant. An application for the purposes of this review was received on November 09, 2011.

The operation of this source shall be subject to the conditions of the attached proposed FESOP Renewal F061-31157-05308. The staff recommends to the Commissioner that this FESOP Renewal be approved.

IDEM Contact

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

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

Company Name: Corydon Stone & Asphalt Co.
Source Address: 1100 Quarry Road NW, Corydon, IN 47112
Permit Number: F061-31157-05308
Reviewer: Hannah L. Desrosiers

Asphalt Plant Maximum Capacity - Drum Mix

Maximum Hourly Asphalt Production =	400	ton/hr										
Maximum Annual Asphalt Production =	3,504,000	ton/yr										
Maximum Annual Blast Furnace Slag Usage =	1,471,680	ton/yr	1.50	% sulfur								
Maximum Annual Steel Slag Usage =	1,471,680	ton/yr	0.66	% sulfur								
Maximum Dryer Fuel Input Rate =	100.0	MMBtu/hr										
Natural Gas Usage =	876	MMCF/yr										
No. 2 Fuel Oil Usage =	6,257,143	gal/yr, and	0.50	% sulfur								
No. 4 Fuel Oil Usage =	6,257,143	gal/yr, and	0.50	% sulfur								
Residual (No. 5 or No. 6) Fuel Oil Usage =	6,257,143	gal/yr, and	0.50	% sulfur								
Propane Usage =	0	gal/yr, and	0	gr/100 ft3 sulfur								
Butane Usage =	0	gal/yr, and	0	gr/100 ft3 sulfur								
Used/Waste Oil Usage =	6,257,143	gal/yr, and	1.00	% sulfur	1.02	% ash	0.200	% chlorine,	0.010	% lead		
Diesel Fuel Usage - Generator < 600 HP =	0	gal/yr, and										
Diesel Fuel Usage - Generator > 600 HP =	0	gal/yr	0	% sulfur								
Unlimited PM Dryer/Mixer Emission Factor =	28.0	lb/ton of asphalt production										
Unlimited PM10 Dryer/Mixer Emission Factor =	6.5	lb/ton of asphalt production										
Unlimited PM2.5 Dryer/Mixer Emission Factor =	1.5	lb/ton of asphalt production										
Unlimited SO2 Dryer/Mixer Emission Factor =	0.058	lb/ton of asphalt production										
Unlimited NOx Dryer/Mixer Emission Factor =	0.055	lb/ton of asphalt production										
Unlimited VOC Dryer/Mixer Emission Factor =	0.032	lb/ton of asphalt production										
Unlimited CO Dryer/Mixer Emission Factor =	0.13	lb/ton of asphalt production										
Unlimited Blast Furnace Slag SO2 Dryer/Mixer Emission Factor =	0.74	lb/ton of slag processed										
Unlimited Steel Slag SO2 Dryer/Mixer Emission Factor =	0.0014	lb/ton of slag processed										

Unlimited/Uncontrolled Emissions

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	CO2e	Total HAPs	Worst Case HAP
Ducted Emissions										
Dryer Fuel Combustion (worst case)	204.23	162.75	162.75	459.90	147.04	3.13	36.79	78,277.93	45.12	41.30 (hexane)
Dryer/Mixer (Process)	49,056.00	11,388.00	2,628.00	101.62	96.36	56.06	227.76	58,257.50	18.68	5.43 (formaldehyde)
Dryer/Mixer Slag Processing (worst case)	0	0	0	544.52	0	0	0	0	0	0
Hot Oil Heater Fuel Combustion/Process (worst case)	0.02	0.07	0.07	0.01	0.88	0.05	0.74	1,752.00	0.017	0.016 (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*	49,056.02	11,388.07	2,628.07	1,004.43	147.92	56.11	228.50	80,029.93	45.14	41.30 (formaldehyde)
Fugitive Emissions										
Asphalt Load-Out, Silo Filling, On-Site Yard	1.94	1.94	1.94	0	0	30.01	5.05	0	0.50	0.16 (formaldehyde)
Material Storage Piles	2.38	0.83	0.83	0	0	0	0	0	0	0
Material Processing and Handling	11.32	5.35	0.81	0	0	0	0	0	0	0
Material Crushing, Screening, and Conveying	55.59	20.31	20.31	0	0	0	0	0	0	0
Unpaved and Paved Roads (worst case)	35.72	9.10	0.91	0	0	0	0	0	0	0
Cold Mix Asphalt Production	0	0	0	0	0	42,109.32	0	0	10,983.67	3,789.84 (xylenes)
Gasoline Fuel Transfer and Dispensing	0	0	0	0	0	0	0	0	0	0
Volatile Organic Liquid Storage Vessels	0	0	0	0	0	negl	0	0	negl	0
Total Fugitive Emissions	106.95	37.54	24.80	0.00	0.00	42,139.33	5.05	0.00	10,984.17	3,789.84 (xylenes)
Totals Unlimited/Uncontrolled PTE	49,162.97	11,425.60	2,652.87	1,004.43	147.92	42,195.44	233.54	80,029.93	11,029.31	3,789.84 (xylenes)

negl = negligible

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

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

Fuel component percentages provided by the source.

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

Company Name: Corydon Stone & Asphalt Co.
Source Address: 1100 Quarry Road NW, Corydon, IN 47112
Permit Number: F061-31157-05308
Reviewer: Hannah L. Desrosiers

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

Maximum Capacity

Maximum Fuel Input Rate =	100	MMBtu/hr
Natural Gas Usage =	876	MMCF/yr
No. 2 Fuel Oil Usage =	6,257,143	gal/yr, and
No. 4 Fuel Oil Usage =	6,257,143	gal/yr, and
Residual (No. 5 or No. 6) Fuel Oil Usage =	6,257,143	gal/yr, and
Propane Usage =	0	gal/yr, and
Butane Usage =	0	gal/yr, and
Used/Waste Oil Usage =	6,257,143	gal/yr, and
	0.50	% sulfur
	0.50	% sulfur
	0.50	% sulfur
	0	gr/100 ft3 sulfur
	0	gr/100 ft3 sulfur
	1.00	% sulfur
	1.02	% ash
	0.200	% chlorine
	0.010	% lead

Unlimited/Uncontrolled Emissions

Criteria Pollutant	Emission Factor (units)							Unlimited/Uncontrolled Potential to Emit (tons/yr)							Worse Case Fuel (tons/yr)
	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	No. 4 Fuel Oil* (lb/kgal)	Residual (No. 5 or No. 6) Fuel Oil (lb/kgal)	Propane (lb/kgal)	Butane (lb/kgal)	Used/Waste Oil (lb/kgal)	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	7.82	0.5	0.6	65.3	0.83	6.26	21.90	24.45	0	0	204.23	204.23
PM10/PM2.5	7.6	3.3	8.3	9.32	0.5	0.6	52.02	3.33	10.32	25.97	29.14	0	0	162.75	162.75
SO2	0.6	71.0	75.0	78.5	0	0	147.0	0.26	222.13	234.64	245.59	0	0	459.90	459.90
NOx	190	24.0	47.0	47.0	13.0	15.0	19.0	83.22	75.09	147.04	147.04	0	0	59.44	147.04
VOC	5.5	0.20	0.20	0.28	1.00	1.10	1.0	2.41	0.63	0.63	0.88	0	0	3.13	3.13
CO	84	5.0	5.0	5.0	7.5	8.4	5.0	36.792	15.64	15.64	15.64	0	0	15.64	36.79
Hazardous Air Pollutant															
HCI							13.2							41.30	41.30
Antimony			5.25E-03	5.25E-03			negl			1.64E-02	1.64E-02			negl	1.6E-02
Arsenic	2.0E-04	5.6E-04	1.32E-03	1.32E-03			1.1E-01	8.8E-05	1.75E-03	4.13E-03	4.13E-03			3.44E-01	3.4E-01
Beryllium	1.2E-05	4.2E-04	2.78E-05	2.78E-05			negl	5.3E-06	1.31E-03	8.70E-05	8.70E-05			negl	1.3E-03
Cadmium	1.1E-03	4.2E-04	3.98E-04	3.98E-04			9.3E-03	4.9E-04	1.31E-03	1.25E-03	1.25E-03			2.91E-02	2.9E-02
Chromium	1.4E-03	4.2E-04	8.45E-04	8.45E-04			2.0E-02	8.1E-04	1.31E-03	2.64E-03	2.64E-03			6.26E-02	6.2E-02
Cobalt	8.4E-05		6.02E-03	6.02E-03			2.1E-04	3.7E-05		1.88E-02	1.88E-02			6.57E-04	1.9E-02
Lead	5.0E-04	1.3E-03	1.51E-03	1.51E-03			0.55	2.2E-04	3.94E-03	4.72E-03	4.72E-03			1.7E+00	1.72
Manganese	3.8E-04	8.4E-04	3.00E-03	3.00E-03			6.8E-02	1.7E-04	2.63E-03	9.39E-03	9.39E-03			2.13E-01	0.21
Mercury	2.6E-04	4.2E-04	1.13E-04	1.13E-04				1.1E-04	1.31E-03	3.54E-04	3.54E-04				1.3E-03
Nickel	2.1E-03	4.2E-04	8.45E-02	8.45E-02			1.1E-02	9.2E-04	1.31E-03	2.64E-01	2.64E-01			3.44E-02	0.264
Selenium	2.4E-05	2.1E-03	6.83E-04	6.83E-04			negl	1.1E-05	6.57E-03	2.14E-03	2.14E-03			negl	6.6E-03
1,1,1-Trichloroethane			2.36E-04	2.36E-04						7.38E-04	7.38E-04				7.4E-04
1,3-Butadiene															0.0E+00
Acetaldehyde															0.0E+00
Acrolein															0.0E+00
Benzene	2.1E-03		2.14E-04	2.14E-04				9.2E-04		6.70E-04	6.70E-04				9.2E-04
Bis(2-ethylhexyl)phthalate							2.2E-03							6.88E-03	6.9E-03
Dichlorobenzene	1.2E-03						8.0E-07	5.3E-04						2.50E-06	5.3E-04
Ethylbenzene			6.36E-05	6.36E-05						1.99E-04	1.99E-04				2.0E-04
Formaldehyde	7.5E-02	6.10E-02	3.30E-02	3.30E-02				3.3E-02	1.91E-01	1.03E-01	1.03E-01				0.191
Hexane	1.8E+00							0.79							0.798
Phenol							2.4E-03							7.51E-03	7.5E-03
Toluene	3.4E-03		6.20E-03	6.20E-03				1.5E-03		1.94E-02	1.94E-02				1.9E-02
Total PAH Haps	negl		1.13E-03	1.13E-03			3.9E-02	negl		3.54E-03	3.54E-03			1.22E-01	1.2E-01
Polycyclic Organic Matter		3.30E-03							1.03E-02						1.0E-02
Xylene			1.09E-04	1.09E-04						3.41E-04	3.41E-04				3.4E-04
Total HAPs								0.83	0.22	0.45	0.45	0	0	43.84	45.12

Methodology

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

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

Abbreviations

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

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

Company Name: Corydon Stone & Asphalt Co.
Source Address: 1100 Quarry Road NW, Corydon, IN 47112
Permit Number: F061-31157-05308
Reviewer: Hannah L. Desrosiers

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

Maximum Capacity

Maximum Fuel Input Rate =	100	MMBtu/hr						
Natural Gas Usage =	876	MMCF/yr						
No. 2 Fuel Oil Usage =	6,257.143	gal/yr, and		0.50	% sulfur			
No. 4 Fuel Oil Usage =	6,257.143	gal/yr, and		0.50	% sulfur			
Residual (No. 5 or No. 6) Fuel Oil Usage =	6,257.143	gal/yr, and		0.50	% sulfur			
Propane Usage =	0	gal/yr, and				0	gr/100 ft3 sulfur	
Butane Usage =	0	gal/yr, and				0	gr/100 ft3 sulfur	
Used/Waste Oil Usage =	6,257.143	gal/yr, and		1.00	% sulfur	1.02	% ash	0.200 % 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	52,630.89	70,397.27	75,565.84	77,698.21	0	0	68,904.14
CH ₄	1.09	2.86	3.02	3.13	0	0	2.79
N ₂ O	0.96	0.81	0.60	1.66	0	0	0.56
Total	52,632.94	70,400.94	75,569.46	77,703.00	0	0	68,907.49

CO₂e for Worst Case Fuel (tons/yr)
78,277.93

CO ₂ e Equivalent Emissions (tons/yr)	52,952.54	70,709.41	75,816.58	78,277.93	0	0	69,137.37
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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.

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 7/08), Table 1.3-8

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

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

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

Emission Factor (EF) Conversions:

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

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

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

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

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

Abbreviations

PTE = Potential to Emit

CO₂ = Carbon Dioxide

CH₄ = Methane

N₂O = Nitrogen Dioxide

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

Company Name: Corydon Stone & Asphalt Co.
Source Address: 1100 Quarry Road NW, Corydon, IN 47112
Permit Number: F061-31157-05308
Reviewer: Hannah L. Desrosiers

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

Maximum Hourly Asphalt Production = ton/hr
 Maximum Annual Asphalt Production = ton/yr

Criteria Pollutant	Uncontrolled Emission Factors (lb/ton)			Unlimited/Uncontrolled Potential to Emit (tons/yr)			Worse Case PTE
	Drum-Mix Plant (dryer/mixer)			Drum-Mix Plant (dryer/mixer)			
	Natural Gas	No. 2 Fuel Oil	Waste Oil	Natural Gas	No. 2 Fuel Oil	Waste Oil	
PM*	28	28	28	49,056.00	49,056.00	49,056.00	49,056.00
PM10*	6.5	6.5	6.5	11,388.00	11,388.00	11,388.00	11,388.00
PM2.5*	1.5	1.5	1.5	2,628.00	2,628.00	2,628.00	2,628.00
SO2**	0.0034	0.011	0.058	5.96	19.27	101.62	101.62
NOx**	0.026	0.055	0.055	45.55	96.36	96.36	96.36
VOC**	0.032	0.032	0.032	56.06	56.06	56.06	56.06
CO***	0.13	0.13	0.13	227.76	227.76	227.76	227.76
Hazardous Air Pollutant							
HCl			2.10E-04			3.68E-01	0.37
Antimony	1.80E-07	1.80E-07	1.80E-07	3.15E-04	3.15E-04	3.15E-04	3.15E-04
Arsenic	5.60E-07	5.60E-07	5.60E-07	9.81E-04	9.81E-04	9.81E-04	9.81E-04
Beryllium	negl	negl	negl	negl	negl	negl	0.00E+00
Cadmium	4.10E-07	4.10E-07	4.10E-07	7.18E-04	7.18E-04	7.18E-04	7.18E-04
Chromium	5.50E-06	5.50E-06	5.50E-06	9.64E-03	9.64E-03	9.64E-03	9.64E-03
Cobalt	2.60E-08	2.60E-08	2.60E-08	4.56E-05	4.56E-05	4.56E-05	4.56E-05
Lead	6.20E-07	1.50E-05	1.50E-05	1.09E-03	2.63E-02	2.63E-02	2.63E-02
Manganese	7.70E-06	7.70E-06	7.70E-06	1.35E-02	1.35E-02	1.35E-02	1.35E-02
Mercury	2.40E-07	2.60E-06	2.60E-06	4.20E-04	4.56E-03	4.56E-03	4.56E-03
Nickel	6.30E-05	6.30E-05	6.30E-05	0.11	0.11	0.11	0.11
Selenium	3.50E-07	3.50E-07	3.50E-07	6.13E-04	6.13E-04	6.13E-04	6.13E-04
2,2,4 Trimethylpentane	4.00E-05	4.00E-05	4.00E-05	0.07	0.07	0.07	0.07
Acetaldehyde			1.30E-03			2.28	2.28
Acrolein			2.60E-05			4.56E-02	4.56E-02
Benzene	3.90E-04	3.90E-04	3.90E-04	0.68	0.68	0.68	0.68
Ethylbenzene	2.40E-04	2.40E-04	2.40E-04	0.42	0.42	0.42	0.42
Formaldehyde	3.10E-03	3.10E-03	3.10E-03	5.43	5.43	5.43	5.43
Hexane	9.20E-04	9.20E-04	9.20E-04	1.61	1.61	1.61	1.61
Methyl chloroform	4.80E-05	4.80E-05	4.80E-05	0.08	0.08	0.08	0.08
MEK			2.00E-05			0.04	0.04
Propionaldehyde			1.30E-04			0.23	0.23
Quinone			1.60E-04			0.28	0.28
Toluene	1.50E-04	2.90E-03	2.90E-03	0.26	5.08	5.08	5.08
Total PAH Haps	1.90E-04	8.80E-04	8.80E-04	0.33	1.54	1.54	1.54
Xylene	2.00E-04	2.00E-04	2.00E-04	0.35	0.35	0.35	0.35

Total HAPs 18.68
Worst Single HAP 5.43 (formaldehyde)

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

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

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

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

Abbreviations

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

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

Company Name: Corydon Stone & Asphalt Co.
Source Address: 1100 Quarry Road NW, Corydon, IN 47112
Permit Number: F061-31157-05308
Reviewer: Hannah L. Desrosiers

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

Maximum Hourly Asphalt Production = ton/hr
 Maximum Annual Asphalt Production = ton/yr

Criteria Pollutant	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)			CO2e for Worst Case Fuel (tons/yr)
	Natural Gas	No. 2 Fuel Oil	Waste Oil		Natural Gas	No. 2 Fuel Oil	Waste Oil	
CO2	33	33	33	1	57,816.00	57,816.00	57,816.00	58,257.50
CH4	0.0120	0.0120	0.0120	21	21.02	21.02	21.02	
N2O				310	0	0	0	
Total					57,837.02	57,837.02	57,837.02	
CO2e Equivalent Emissions (tons/yr)					58,257.50	58,257.50	58,257.50	

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: Corydon Stone & Asphalt Co.
Source Address: 1100 Quarry Road NW, Corydon, IN 47112
Permit Number: F061-31157-05308
Reviewer: Hannah L. Desrosiers

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

Maximum Annual Blast Furnace Slag Usage =

1,471,680

 ton/yr

1.50

 % sulfur
 Maximum Annual Steel Slag Usage =

1,471,680

 ton/yr

0.66

 % sulfur

Type of Slag	SO2 Emission Factor (lb/ton)	Unlimited Potential to Emit SO2 (tons/yr)
Blast Furnace Slag*	0.74	544.52
Steel Slag**	0.0014	1.03

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: Corydon Stone & Asphalt Co.
Source Location: 1100 Quarry Road NW, Corydon, IN 47112
Permit Number: F061-31157-05308
Reviewer: Hannah L. Desrosiers

Maximum Hot Oil Heater Fuel Input Rate = 2.00 MMBtu/hr
 Natural Gas Usage = 18 MMCF/yr
 No. 2 Fuel Oil Usage = 0 gal/yr, and 0.00 % 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	0.017	0	0.02
PM10/PM2.5	7.6	3.3	0.067	0	0.07
SO2	0.6	71.0	0.005	0	0.01
NOx	100	20.0	0.876	0	0.88
VOC	5.5	0.20	0.048	0	0.05
CO	84	5.0	0.736	0	0.74
Hazardous Air Pollutant					
Arsenic	2.0E-04	5.6E-04	1.8E-06	0	1.8E-06
Beryllium	1.2E-05	4.2E-04	1.1E-07	0	1.1E-07
Cadmium	1.1E-03	4.2E-04	9.6E-06	0	9.6E-06
Chromium	1.4E-03	4.2E-04	1.2E-05	0	1.2E-05
Cobalt	8.4E-05		7.4E-07		7.4E-07
Lead	5.0E-04	1.3E-03	4.4E-06	0	4.4E-06
Manganese	3.8E-04	8.4E-04	3.3E-06	0	3.3E-06
Mercury	2.6E-04	4.2E-04	2.3E-06	0	2.3E-06
Nickel	2.1E-03	4.2E-04	1.8E-05	0	1.8E-05
Selenium	2.4E-05	2.1E-03	2.1E-07	0	2.1E-07
Benzene	2.1E-03		1.8E-05		1.8E-05
Dichlorobenzene	1.2E-03		1.1E-05		1.1E-05
Ethylbenzene					0.0E+00
Formaldehyde	7.5E-02	6.10E-02	6.6E-04	0	6.6E-04
Hexane	1.8E+00		1.6E-02		1.6E-02
Phenol					0.0E+00
Toluene	3.4E-03		3.0E-05		3.0E-05
Total PAH Haps	negl		negl		0.0E+00
Polycyclic Organic Matter		3.30E-03		0	0.0E+00
Total HAPs =			1.7E-02	0	0.017
Worst Single HAP =			1.6E-02	0	1.6E-02
			(Hexane)	(Formaldehyde)	(Hexane)

Methodology

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

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

Abbreviations

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

**Appendix A.1: Unlimited Emissions Calculations
Greenhouse Gas (CO₂e) Emissions from
Hot Oil Heater Fuel Combustion with Maximum Capacity < 100 MMBtu/hr**

Company Name: Corydon Stone & Asphalt Co.
Source Address: 1100 Quarry Road NW, Corydon, IN 47112
Permit Number: F061-31157-05308
Reviewer: Hannah L. Desrosiers

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	1,052.62	0
CH ₄	2.49	0.91	21	0.02	0
N ₂ O	2.2	0.26	310	0.02	0
				1,052.66	0

Worse Case CO₂e Emissions (tons/yr)
1,059.05

CO ₂ e Equivalent Emissions (tons/yr)	1,059.05	0
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Methodology

Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.

Equivalent Natural Gas Usage (MMCF/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 MMCF/1,000 MMBtu]

Equivalent Oil Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.140 MMBtu]

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

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

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

Emission Factor (EF) Conversions

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

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

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

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

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

Abbreviations

CO₂ = Carbon Dioxide
 CH₄ = Methane

N₂O = Nitrogen Dioxide
 PTE = Potential to Emit

Appendix A.1: Unlimited Emissions Calculations
Hot Oil Heating System - Process Emissions

Company Name: Corydon Stone & Asphalt Co.
Source Address: 1100 Quarry Road NW, Corydon, IN 47112
Permit Number: F061-31157-05308
Reviewer: Hannah L. Desrosiers

The following calculations determine the unlimited/uncontrolled emissions from the combustion of natural gas and No. 2 fuel oil in the hot oil heating system, which is used to heat a specially designed transfer oil. The hot transfer oil is then pumped through a piping system that passes through the asphalt cement storage tanks, in order to keep the asphalt cement at the correct temperature.

Maximum Fuel Input Rate To Hot Oil Heater = 2.00 MMBtu/hr
 Natural Gas Usage = 18 MMCF/yr, and
 No. 2 Fuel Oil Usage = 0 gal/yr

Criteria Pollutant	Emission Factors		Unlimited/Uncontrolled Potential to Emit (tons/yr)		Worse Case PTE
	Natural Gas (lb/ft3)	No. 2 Fuel Oil (lb/gal)	Natural Gas	No. 2 Fuel Oil	
VOC	2.60E-08	2.65E-05	2.28E-04	0	0.000
CO	8.90E-06	0.0012	0.078	0	0.078
Greenhouse Gas as CO2e*					
CO2	0.20	28.00	1752.00	0	1752.00
Hazardous Air Pollutant					
Formaldehyde	2.60E-08	3.50E-06	2.28E-04	0	2.28E-04
Acenaphthene		5.30E-07		0	0.00E+00
Acenaphthylene		2.00E-07		0	0.00E+00
Anthracene		1.80E-07		0	0.00E+00
Benzo(b)fluoranthene		1.00E-07		0	0.00E+00
Fluoranthene		4.40E-08		0	0.00E+00
Fluorene		3.20E-08		0	0.00E+00
Naphthalene		1.70E-05		0	0.00E+00
Phenanthrene		4.90E-06		0	0.00E+00
Pyrene		3.20E-08		0	0.00E+00
Total HAPs				2.28E-04	
Worst Single HAP				2.28E-04	(Naphthalene)

Methodology

Natural Gas Usage (MMCF/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 MMCF/1,000 MMBtu]
 No. 2 Fuel Oil Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.140 MMBtu]
 Natural Gas: Potential to Emit (tons/yr) = (Natural Gas Usage (MMCF/yr))*(Emission Factor (lb/CF))*(1000000 CF/MMCF)*(ton/2000 lbs)
 No. 2 Fuel Oil: Potential to Emit (tons/yr) = (No. 2 Fuel Oil Usage (gals/yr))*(Emission Factor (lb/gal))*(ton/2000 lbs)
 Unlimited Potential to Emit CO2e (tons/yr) = Unlimited Potential to Emit CO2 (ton/yr) x CO2 GWP (1)
 1 gallon of No. 2 Fuel Oil has a heating value of 140,000 Btu
 Emission Factors from AP-42 Chapter 11.1 (dated 3/04), Table 11.1-13

*Note: There are no emission factors for CH4 and N2O available in either 40 CFR 98, Subpart C or AP-42 Chapter 11.1. Therefore, it is assumed that there are no CH4 and N2O emission anticipated from this process.

Abbreviations

CO = Carbon Monoxide

VOC = Volatile Organic Compound

CO2 = Carbon Dioxide

**Appendix A.1: Unlimited Emissions Calculations
Reciprocating Internal Combustion Engines - Diesel Fuel
Output Rating (<=600 HP)**

Company Name: Corydon Stone & Asphalt Co.
Source Address: 1100 Quarry Road NW, Corydon, IN 47112
Permit Number: F061-31157-05308
Reviewer: Hannah L. Desrosiers

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

	Pollutant						
	PM ²	PM10 ²	direct PM2.5 ²	SO2	NOx	VOC	CO
Emission Factor in lb/hp-hr	0.0022	0.0022	0.0022	0.0021	0.0310	0.0025	0.0067
Emission Factor in lb/kgal ¹	43.07	43.07	43.07	40.13	606.85	49.22	130.77
Potential Emission in tons/yr	0.00	0.00	0.00	0.00	0.00	0.00	0.00

¹ The AP-42 Chapter 3.3-1 emission factors in lb/hp-hr were converted to lb/kgal emission factors using an average brake specific fuel consumption of 7,000 Btu / hp-hr, diesel heating value of 19,300 Btu / lb, and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

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							
	Benzene	Toluene	Xylene	1,3-Butadiene	Formaldehyde	Acetaldehyde	Acrolein	Total PAH HAPs ³
Emission Factor in lb/MMBtu	9.33E-04	4.09E-04	2.85E-04	3.91E-05	1.18E-03	7.67E-04	9.25E-05	1.68E-04
Emission Factor in lb/kgal ⁴	1.28E-01	5.60E-02	3.91E-02	5.36E-03	1.62E-01	1.05E-01	1.27E-02	2.30E-02
Potential Emission in tons/yr	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

³PAH = Polycyclic Aromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)

⁴The AP-42 Chapter 3.3-1 emission factors in lb/MMBtu were converted to lb/kgal emission factors using an average diesel heating value of 19,300 Btu / lb and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

⁴Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) * 1/10⁶ (MMBtu/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

Potential Emission of Total HAPs (tons/yr)	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: Corydon Stone & Asphalt Co.
Source Address: 1100 Quarry Road NW, Corydon, IN 47112
Permit Number: F061-31157-05308
Reviewer: Hannah L. Desrosiers

Output Horsepower Rating (hp)	0.0	Sulfur Content (S) of Fuel (% by weight)	0.00
Maximum Hours Operated per Year	8760		
Potential Throughput (hp-hr/yr)	0		
Maximum Diesel Fuel Usage (gal/yr)	0		

	Pollutant						
	PM	PM10 ²	direct PM2.5 ²	SO2	NOx	VOC	CO
Emission Factor in lb/hp-hr	7.00E-04			0.00E+00 (.00809S)	2.40E-02	7.05E-04	5.50E-03
Emission Factor in lb/MMBtu		0.0573	0.0573				
Emission Factor in lb/kgal ¹	13.70	7.85	7.85	0.00	469.82	13.80	107.67
Potential Emission in tons/yr	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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.

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)

²Emission factors in lb/kgal were converted from the AP-42 Chapter 3.4-1 emission factors in lb/MMBtu using an average diesel heating value of 19,300 Btu / lb and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

²Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) * 1/10⁶ (MMBtu/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

Hazardous Air Pollutants (HAPs)

	Pollutant						
	Benzene	Toluene	Xylene	Formaldehyde	Acetaldehyde	Acrolein	Total PAH HAPs ³
Emission Factor in lb/MMBtu	7.76E-04	2.81E-04	1.93E-04	7.89E-05	2.52E-05	7.88E-06	2.12E-04
Emission Factor in lb/kgal ⁴	1.06E-01	3.85E-02	2.64E-02	1.08E-02	3.45E-03	1.08E-03	2.91E-02
Potential Emission in tons/yr	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

³PAH = Polyaromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)

⁴Emission factors in lb/kgal were converted from the AP-42 Chapter 3.4-1 emission factors in lb/MMBtu using an average diesel heating value of 19,300 Btu / lb and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

⁴Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) * 1/10⁶ (MMBtu/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

Potential Emission of Total HAPs (tons/yr)	0.00E+00
Potential Emission of Worst Case HAPs (tons/yr)	0.00E+00

Green House Gas Emissions (GHG)

	Pollutant		
	CO2 ⁵	CH4 ^{5,6}	N2O ⁷
Emission Factor in lb/hp-hr	1.16	6.35E-05	NA
Emission Factor in kg/MMBtu	NA	NA	0.0006
Emission Factor in lb/kgal	22,707.83	1.24	0.18
Potential Emission in tons/yr	0.00	0.00	0.00

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.

⁵Emission factor (lb/kgal) = AP-42 EF (lb/hp-hr) * 1/7,000 (hp-hr/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

⁶According to AP-42, Table 3.4-1, TOC (as CH4) is 9% methane by weight. As a result, the lb/hp-hr emission factor for TOC (as CH4) in AP-42 has been multiplied by 9% to determine the portion that is emitted as methane.

⁷The 40 CFR 98 Subpart C emission factors in kg/MMBtu were converted to lb/kgal emission factors using an average diesel heating value of 19,300 Btu / lb and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

⁷Emission factor (lb/kgal) = 40 CFR 98 EF (kg/MMBtu) * 2.20462 (lb/kg) * 1/10⁶ (MMBtu/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

Summed Potential Emissions in tons/yr	0.00
CO2e Total in tons/yr	0.00

Methodology

Potential Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] * [Maximum Hours Operated per Year]

Maximum Diesel Fuel Usage (gal/yr) = Potential Throughput (hp-hr/yr) * 7000 (Btu/hp-hr) * 1/19300 (lb/Btu) * 1/7.1 (gal/lb)

Emission Factors are from AP 42 (Supplement B 10/96) Tables 3.4-1, 3.4-2, 3.4-3, and 3.4-4 and have been converted to lb/kgal.

N2O Emission Factor from 40 CFR 98 Subpart C Table C-2 and have been converted to lb/kgal.

Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.

Potential Emissions (tons/yr) = [Maximum Diesel Fuel Usage (gal/yr) x Emission Factor (lb/kgal)] / (1,000 gal/kgal) / (2,000 lb/ton)

CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O

Potential Emission ton/yr x N2O GWP (310).

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

Company Name: Corydon Stone & Asphalt Co.
Source Address: 1100 Quarry Road NW, Corydon, IN 47112
Permit Number: F061-31157-05308
Reviewer: Hannah L. Desrosiers

The following calculations determine the unlimited/uncontrolled fugitive emissions from hot asphalt mix load-out, silo filling, and on-site yard for a drum mix hot mix asphalt plant

Asphalt Temperature, T =	325	F
Asphalt Volatility Factor, V =	-0.5	
Maximum Annual Asphalt Production =	3,504,000	tons/yr

Pollutant	Emission Factor (lb/ton asphalt)			Unlimited/Uncontrolled Potential to Emit (tons/yr)			
	Load-Out	Silo Filling	On-Site Yard	Load-Out	Silo Filling	On-Site Yard	Total
Total PM*	5.2E-04	5.9E-04	NA	0.91	1.03	NA	1.94
Organic PM	3.4E-04	2.5E-04	NA	0.60	0.445	NA	1.04
TOC	0.004	0.012	0.001	7.29	21.35	1.927	30.6
CO	0.001	0.001	3.5E-04	2.36	2.067	0.617	5.05

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

PM/HAPs	0.042	0.050	0	0.093
VOC/HAPs	0.108	0.272	0.028	0.408
non-VOC/HAPs	5.6E-04	5.8E-05	1.5E-04	7.7E-04
non-VOC/non-HAPs	0.53	0.30	0.14	0.97

Total VOCs	6.85	21.35	1.8	30.0
Total HAPs	0.15	0.32	0.029	0.50
	Worst Single HAP			0.155
				(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: Corydon Stone & Asphalt Co.
Source Address: 1100 Quarry Road NW, Corydon, IN 47112
Permit Number: F061-31157-05308
Reviewer: Hannah L. Desrosiers

Organic Particulate-Based Compounds (Table 11.1-15)

Pollutant	CASRN	Category	HAP Type	Source	Speciation Profile		Unlimited/Uncontrolled Potential to Emit (tons/yr)			
					Load-out and Onsite Yard (% by weight of Total Organic PM)	Silo Filling and Asphalt Storage Tank (% by weight of Total Organic PM)	Load-out	Silo Filling	Onsite Yard	Total
PAH HAPs										
Acenaphthene	83-32-9	PM/HAP	POM	Organic PM	0.26%	0.47%	1.6E-03	2.1E-03	NA	3.6E-03
Acenaphthylene	208-96-8	PM/HAP	POM	Organic PM	0.028%	0.014%	1.7E-04	6.2E-05	NA	2.3E-04
Anthracene	120-12-7	PM/HAP	POM	Organic PM	0.07%	0.13%	4.2E-04	5.8E-04	NA	1.0E-03
Benzo(a)anthracene	56-55-3	PM/HAP	POM	Organic PM	0.019%	0.056%	1.1E-04	2.5E-04	NA	3.6E-04
Benzo(b)fluoranthene	205-99-2	PM/HAP	POM	Organic PM	0.0076%	0	4.5E-05	0	NA	4.5E-05
Benzo(k)fluoranthene	207-08-9	PM/HAP	POM	Organic PM	0.0022%	0	1.3E-05	0	NA	1.3E-05
Benzo(g,h,i)perylene	191-24-2	PM/HAP	POM	Organic PM	0.0019%	0	1.1E-05	0	NA	1.1E-05
Benzo(a)pyrene	50-32-8	PM/HAP	POM	Organic PM	0.0023%	0	1.4E-05	0	NA	1.4E-05
Benzo(e)pyrene	192-97-2	PM/HAP	POM	Organic PM	0.0078%	0.0095%	4.7E-05	4.2E-05	NA	8.9E-05
Chrysene	218-01-9	PM/HAP	POM	Organic PM	0.103%	0.21%	6.2E-04	9.3E-04	NA	1.5E-03
Dibenz(a,h)anthracene	53-70-3	PM/HAP	POM	Organic PM	0.00037%	0	2.2E-06	0	NA	2.2E-06
Fluoranthene	206-44-0	PM/HAP	POM	Organic PM	0.05%	0.15%	3.0E-04		NA	3.0E-04
Fluorene	86-73-7	PM/HAP	POM	Organic PM	0.77%	1.01%	4.6E-03	4.5E-03	NA	9.1E-03
Indeno(1,2,3-cd)pyrene	193-39-5	PM/HAP	POM	Organic PM	0.00047%	0	2.8E-06	0	NA	2.8E-06
2-Methylnaphthalene	91-57-6	PM/HAP	POM	Organic PM	2.38%	5.27%	1.4E-02	2.3E-02	NA	0.038
Naphthalene	91-20-3	PM/HAP	POM	Organic PM	1.25%	1.82%	7.5E-03	8.1E-03	NA	1.6E-02
Perylene	198-55-0	PM/HAP	POM	Organic PM	0.022%	0.03%	1.3E-04	1.3E-04	NA	2.6E-04
Phenanthrene	85-01-8	PM/HAP	POM	Organic PM	0.81%	1.80%	4.8E-03	8.0E-03	NA	1.3E-02
Pyrene	129-00-0	PM/HAP	POM	Organic PM	0.15%	0.44%	9.0E-04	2.0E-03	NA	2.9E-03
Total PAH HAPs							0.035	0.050	NA	0.086
Other semi-volatile HAPs										
Phenol		PM/HAP	---	Organic PM	1.18%	0	7.0E-03	0	0	7.0E-03

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

Methodology

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

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

Abbreviations

PM = Particulate Matter

HAP = Hazardous Air Pollutant

POM = Polycyclic Organic Matter

**Appendix A.1: 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%	6.85	21.35	1.81	30.01
non-VOC/non-HAPS										
Methane	74-82-8	non-VOC/non-HAP	---	TOC	6.50%	0.26%	4.7E-01	5.6E-02	1.3E-01	0.654
Acetone	67-64-1	non-VOC/non-HAP	---	TOC	0.046%	0.055%	3.4E-03	1.2E-02	8.9E-04	0.016
Ethylene	74-85-1	non-VOC/non-HAP	---	TOC	0.71%	1.10%	5.2E-02	2.3E-01	1.4E-02	0.300
Total non-VOC/non-HAPS					7.30%	1.40%	0.532	0.299	0.141	0.97
Volatile organic HAPs										
Benzene	71-43-2	VOC/HAP	---	TOC	0.052%	0.032%	3.8E-03	6.8E-03	1.0E-03	1.2E-02
Bromomethane	74-83-9	VOC/HAP	---	TOC	0.0096%	0.0049%	7.0E-04	1.0E-03	1.9E-04	1.9E-03
2-Butanone	78-93-3	VOC/HAP	---	TOC	0.049%	0.039%	3.6E-03	8.3E-03	9.4E-04	1.3E-02
Carbon Disulfide	75-15-0	VOC/HAP	---	TOC	0.013%	0.016%	9.5E-04	3.4E-03	2.5E-04	4.6E-03
Chloroethane	75-00-3	VOC/HAP	---	TOC	0.00021%	0.004%	1.5E-05	8.5E-04	4.0E-06	8.7E-04
Chloromethane	74-87-3	VOC/HAP	---	TOC	0.015%	0.023%	1.1E-03	4.9E-03	2.9E-04	6.3E-03
Cumene	92-82-8	VOC/HAP	---	TOC	0.11%	0	8.0E-03	0	2.1E-03	1.0E-02
Ethylbenzene	100-41-4	VOC/HAP	---	TOC	0.28%	0.038%	2.0E-02	8.1E-03	5.4E-03	0.034
Formaldehyde	50-00-0	VOC/HAP	---	TOC	0.088%	0.69%	6.4E-03	1.5E-01	1.7E-03	0.155
n-Hexane	100-54-3	VOC/HAP	---	TOC	0.15%	0.10%	1.1E-02	2.1E-02	2.9E-03	0.035
Isooctane	540-84-1	VOC/HAP	---	TOC	0.0018%	0.00031%	1.3E-04	6.6E-05	3.5E-05	2.3E-04
Methylene Chloride	75-09-2	non-VOC/HAP	---	TOC	0	0.00027%	0	5.8E-05	0	5.8E-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%	5.3E-04	1.2E-03	1.4E-04	1.8E-03
Tetrachloroethene	127-18-4	non-VOC/HAP	---	TOC	0.0077%	0	5.6E-04	0	1.5E-04	7.1E-04
Toluene	100-88-3	VOC/HAP	---	TOC	0.21%	0.062%	1.5E-02	1.3E-02	4.0E-03	0.033
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	9.5E-05	0	2.5E-05	1.2E-04
m-/p-Xylene	1330-20-7	VOC/HAP	---	TOC	0.41%	0.20%	3.0E-02	4.3E-02	7.9E-03	0.080
o-Xylene	95-47-6	VOC/HAP	---	TOC	0.08%	0.057%	5.8E-03	1.2E-02	1.5E-03	2.0E-02
Total volatile organic HAPs					1.50%	1.30%	0.109	0.278	0.029	0.416

Methodology

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

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

Abbreviations

TOC = Total Organic Compounds

HAP = Hazardous Air Pollutant

VOC = Volatile Organic Compound

MTBE = Methyl tert butyl ether

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

Company Name: Corydon Stone & Asphalt Co.
Source Address: 1100 Quarry Road NW, Corydon, IN 47112
Permit Number: F061-31157-05308
Reviewer: Hannah L. Desrosiers

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

$$E_f = 1.7 \cdot (s/1.5) \cdot (365-p)/235 \cdot (f/15)$$

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

Material	Silt Content (wt %)*	Emission Factor (lb/acre/day)	Maximum Anticipated Pile Size (acres)**	PTE of PM (tons/yr)	PTE of PM10/PM2.5 (tons/yr)
Sand	2.6	3.01	0.80	0.439	0.154
Limestone	1.6	1.85	1.30	0.439	0.154
RAP	0.5	0.58	1.40	0.148	0.052
Gravel	1.6	1.85	1.20	0.406	0.142
Shingles	0.5	0.58	1.40	0.148	0.052
Slag	3.8	4.40	1.00	0.803	0.281
Totals				2.38	0.83

Methodology

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

PTE of PM10/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: Corydon Stone & Asphalt Co.
Source Address: 1100 Quarry Road NW, Corydon, IN 47112
Permit Number: F061-31157-05308
Reviewer: Hannah L. Desrosiers

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

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

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

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

Maximum Annual Asphalt Production = 3,504,000 tons/yr
 Percent Asphalt Cement/Binder (weight %) = 5.0%
 Maximum Material Handling Throughput = 3,328,800 tons/yr

Type of Activity	Unlimited/Uncontrolled PTE of PM (tons/yr)	Unlimited/Uncontrolled PTE of PM10 (tons/yr)	Unlimited/Uncontrolled PTE of PM2.5 (tons/yr)
Truck unloading of materials into storage piles	3.77	1.78	0.27
Front-end loader dumping of materials into feeder bins	3.77	1.78	0.27
Conveyor dropping material into dryer/mixer or batch tower	3.77	1.78	0.27
Total (tons/yr)	11.32	5.35	0.81

Methodology

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

Material Screening and Conveying (AP-42 Section 11.19.2)

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

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

Methodology

Maximum Material Handling Throughput (tons/yr) = [Annual Asphalt Production Limitation (tons/yr)] * [1 - Percent Asphalt Cement/Binder (weight %)]
 Unlimited Potential to Emit (tons/yr) = [Maximum Material Handling Throughput (tons/yr)] * [Emission Factor (lb/ton)] * [ton/2000 lbs]
 Raw materials may include stone/gravel, slag, and recycled asphalt pavement (RAP)
 Emission Factors from AP-42 Chapter 11.19.2 (dated 8/04), Table 11.19.2-2
 *Uncontrolled emissions factors for PM/PM10 represent tertiary crushing of stone with moisture content ranging from 0.21 to 1.3 percent by weight (Table 11.19.2-2). The bulk moisture content of aggregate in the storage piles at a hot mix asphalt production plant typically stabilizes between 3 to 5 percent by weight (Source: AP-42 Section 11.1.1.1).
 **Assumes PM10 = PM2.5

Abbreviations

PM = Particulate Matter
 PM10 = Particulate Matter (<10 um)
 PM2.5 = Particulate matter (< 2.5 um)
 PTE = Potential to Emit

**Appendix A.1: Unlimited Emissions Calculations
Unpaved Roads**

Company Name: Corydon Stone & Asphalt Co.
Source Address: 1100 Quarry Road NW, Corydon, IN 47112
Permit Number: F061-31157-05308
Reviewer: Hannah L. Desrosiers

Unpaved Roads at Industrial Site

The following calculations determine the amount of emissions created by unpaved roads, based on 8,760 hours of use and AP-42, Ch 13.2.2 (12/2003).

Maximum Annual Asphalt Production	3,504,000	tons/yr
Percent Asphalt Cement/Binder (weight %)	5.0%	
Maximum Material Handling Throughput	3,328,800	tons/yr
Maximum Asphalt Cement/Binder Throughput	175,200	tons/yr
Maximum No. 2 Fuel Oil Usage	6,257,143	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	1.5E+05	5.9E+06	100	0.019	2,814.5
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	17.0	0	17.0	1.5E+05	2.5E+06	100	0.019	2,814.5
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	12.0	36.0	48.0	4.9E+03	2.3E+05	0	0.000	0.0
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.0	4.9E+03	5.8E+04	0	0.000	0.0
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	12.0	32.0	44.0	6.6E+02	2.9E+04	0	0.000	0.0
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.0	6.6E+02	7.9E+03	0	0.000	0.0
Aggregate/RAP Loader Full	Front-end loader (3 CY)	15.0	4.2	19.2	7.9E+05	1.5E+07	100	0.019	15,010.8
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	15.0	0	15.0	7.9E+05	1.2E+07	100	0.019	15,010.8
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	17.0	24.0	41.0	1.5E+05	6.0E+06	0	0.000	0.0
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	17.0	0	17.0	1.5E+05	2.5E+06	0	0.000	0.0
Total						2.2E+06	4.4E+07		3.6E+04

Average Vehicle Weight Per Trip = 20.3 tons/trip
 Average Miles Per Trip = 0.016 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, $E_{ext} = E \cdot [(365 - P)/365]$
 Mitigated Emission Factor, $E_{ext} = E \cdot [(365 - P)/365]$
 where P = 125 days of rain greater than or equal to 0.01 inches (see Fig. 13.2.2-1)

	PM	PM10	PM2.5	
Unmitigated Emission Factor, E_f	6.09	1.55	0.16	lb/mile
Mitigated Emission Factor, E_{ext}	4.01	1.02	0.10	lb/mile
Dust Control Efficiency =	50%	50%	50%	(pursuant to control measures outlined in fugitive dust control plan)

Process	Vehicle Type	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	8.58	2.19	0.22	5.64	1.44	0.14	2.82	0.72	0.07
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	8.58	2.19	0.22	5.64	1.44	0.14	2.82	0.72	0.07
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	0.000	0.000	0.00	0.000	0.000	0.00	0.000	0.000	0.00
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	0.000	0.000	0.00	0.000	0.000	0.00	0.000	0.000	0.00
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	0.000	0.000	0.00	0.000	0.000	0.00	0.000	0.000	0.00
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	0.000	0.000	0.00	0.000	0.000	0.00	0.000	0.000	0.00
Aggregate/RAP Loader Full	Front-end loader (3 CY)	45.74	11.66	1.17	30.08	7.67	0.77	15.04	3.83	0.38
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	45.74	11.66	1.17	30.08	7.67	0.77	15.04	3.83	0.38
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Totals		108.64	27.69	2.77	71.44	18.21	1.82	35.72	9.10	0.91

Methodology

Maximum Material Handling Throughput = [Annual Asphalt Production Limitation (tons/yr)] * [1 - Percent Asphalt Cement/Binder (weight %)]
 Maximum Asphalt Cement/Binder Throughput = [Annual Asphalt Production Limitation (tons/yr)] * [Percent Asphalt Cement/Binder (weight %)]
 Maximum Weight of Vehicle and Load (tons/trip) = [Maximum Weight of Vehicle (tons/trip)] + [Maximum Weight of Load (tons/trip)]
 Maximum trips per year (trip/yr) = [Throughput (tons/yr)] / [Maximum Weight of Load (tons/trip)]
 Total Weight driven per year (ton/yr) = [Maximum Weight of Vehicle and Load (tons/trip)] * [Maximum trips per year (trip/yr)]
 Maximum one-way distance (mi/trip) = [Maximum one-way distance (feet/trip)] / [5280 ft/mile]
 Maximum one-way miles (miles/yr) = [Maximum trips per year (trip/yr)] * [Maximum one-way distance (mi/trip)]
 Average Vehicle Weight Per Trip (ton/trip) = SUM[Total Weight driven per year (ton/yr)] / SUM[Maximum trips per year (trip/yr)]
 Average Miles Per Trip (miles/trip) = SUM[Maximum one-way miles (miles/yr)] / SUM[Maximum trips per year (trip/yr)]
 Unmitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Unmitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
 Mitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Mitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
 Controlled PTE (tons/yr) = (Mitigated PTE (tons/yr)) * (1 - Dust Control Efficiency)

Abbreviations

PM = Particulate Matter PM10 = Particulate Matter (<10 um) PM2.5 = Particulate Matter (<2.5 um) PTE = Potential to Emit

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

Company Name: Corydon Stone & Asphalt Co.
Source Address: 1100 Quarry Road NW, Corydon, IN 47112
Permit Number: F061-31157-05308
Reviewer: Hannah L. Desrosiers

Paved Roads at Industrial Site

The following calculations determine the amount of emissions created by paved roads, based on 8,760 hours of use and AP-42, Ch 13.2.1 (12/2003).

Maximum Annual Asphalt Production	3,504,000	tons/yr
Percent Asphalt Cement/Binder (weight %)	5.0%	
Maximum Material Handling Throughput	3,328,800	tons/yr
Maximum Asphalt Cement/Binder Throughput	175,200	tons/yr
Maximum No. 2 Fuel Oil Usage	6,257,143	gallons/yr

Process	Vehicle Type	Maximum Weight of Vehicle (tons)	Maximum Weight of Load (tons)	Maximum Weight of Vehicle and Load (tons/trip)	Maximum trips per year (trip/yr)	Total Weight driven per day (ton/yr)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	17.0	22.4	39.40	1.5E+05	5.9E+06	700	0.133	19701.7
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	17.0	0	17.00	1.5E+05	2.5E+06	700	0.133	19701.7
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	12.0	36.0	48.00	4.9E+03	2.3E+05	700	0.133	645.2
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.00	4.9E+03	5.8E+04	700	0.133	645.2
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	12.0	32.0	44.00	6.6E+02	2.9E+04	700	0.133	87.6
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.00	6.6E+02	7.9E+03	700	0.133	87.6
Aggregate/RAP Loader Full	Front-end loader (3 CY)	15.0	4.2	19.20	7.9E+05	1.5E+07	700	0.133	105075.8
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	15.0	0	15.00	7.9E+05	1.2E+07	700	0.133	105075.8
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	17.0	24.0	41.00	1.5E+05	6.0E+06	700	0.133	19356.1
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	17.0	0	17.00	1.5E+05	2.5E+06	700	0.133	19356.1
Total					2.2E+06	4.4E+07			2.9E+05

Average Vehicle Weight Per Trip = 20.3 tons/trip
 Average Miles Per Trip = 0.133 miles/trip

Unmitigated Emission Factor, Ef = [k * (sL)^0.91 * (W)^1.02] (Equation 1 from AP-42 13.2.1)

	PM	PM10	PM2.5	
where k =	0.011	0.0022	0.00054	lb/mi = particle size multiplier (AP-42 Table 13.2.1-1)
W =	20.3	20.3	20.3	tons = average vehicle weight (provided by source)
sL =	0.6	0.6	0.6	g/m ² = Ubiquitous Baseline Silt Loading Values of paved roads (Table 13.2.1-3 for summer months)

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

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

	PM	PM10	PM2.5	
Unmitigated Emission Factor, Ef =	0.15	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)	1.46	0.29	0.07	1.34	0.27	0.07	0.67	0.13	0.03
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	1.46	0.29	0.07	1.34	0.27	0.07	0.67	0.13	0.03
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	0.048	0.010	2.4E-03	0.044	0.009	2.2E-03	0.022	4.4E-03	1.1E-03
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	0.048	0.010	2.4E-03	0.044	0.009	2.2E-03	0.022	4.4E-03	1.1E-03
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	6.5E-03	1.3E-03	3.2E-04	6.0E-03	1.2E-03	2.9E-04	3.0E-03	6.0E-04	1.5E-04
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	6.5E-03	1.3E-03	3.2E-04	6.0E-03	1.2E-03	2.9E-04	3.0E-03	6.0E-04	1.5E-04
Aggregate/RAP Loader Full	Front-end loader (3 CY)	7.81	1.56	0.38	7.14	1.43	0.35	3.57	0.71	0.18
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	7.81	1.56	0.38	7.14	1.43	0.35	3.57	0.71	0.18
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	1.44	0.29	0.07	1.32	0.26	0.06	0.66	0.13	0.03
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	1.44	0.29	0.07	1.32	0.26	0.06	0.66	0.13	0.03
Totals		21.54	4.31	1.06	19.70	3.94	0.97	9.85	1.97	0.48

Methodology

Maximum Material Handling Throughput = [Annual Asphalt Production Limitation (tons/yr)] * [1 - Percent Asphalt Cement/Binder (weight %)]
 Maximum Asphalt Cement/Binder Throughput = [Annual Asphalt Production Limitation (tons/yr)] * [Percent Asphalt Cement/Binder (weight %)]
 Maximum Weight of Vehicle and Load (tons/trip) = [Maximum Weight of Vehicle (tons/trip)] + [Maximum Weight of Load (tons/trip)]
 Maximum trips per year (trip/yr) = [Throughput (tons/yr)] / [Maximum Weight of Load (tons/trip)]
 Total Weight driven per year (ton/yr) = [Maximum Weight of Vehicle and Load (tons/trip)] * [Maximum trips per year (trip/yr)]
 Maximum one-way distance (mi/trip) = [Maximum one-way distance (feet/trip)] / [5280 ft/mile]
 Maximum one-way miles (miles/yr) = [Maximum trips per year (trip/yr)] * [Maximum one-way distance (mi/trip)]
 Average Vehicle Weight Per Trip (ton/trip) = SUM[Total Weight driven per year (ton/yr)] / SUM[Maximum trips per year (trip/yr)]
 Average Miles Per Trip (miles/trip) = SUM[Maximum one-way miles (miles/yr)] / SUM[Maximum trips per year (trip/yr)]
 Unmitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Unmitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
 Mitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Mitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
 Controlled PTE (tons/yr) = (Mitigated PTE (tons/yr)) * (1 - Dust Control Efficiency)

Abbreviations

PM = Particulate Matter PM10 = Particulate Matter (<10 um) PM2.5 = Particulate Matter (<2.5 um) PTE = Potential to Emit

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

Company Name: Corydon Stone & Asphalt Co.
Source Address: 1100 Quarry Road NW, Corydon, IN 47112
Permit Number: F061-31157-05308
Reviewer: Hannah L. Desrosiers

The following calculations determine the amount of VOC and HAP emissions created from volatilization of solvent used as diluent in the liquid binder for cold mix asphalt production

Maximum Annual Asphalt Production = 3,504,000 tons/yr
 Percent Asphalt Cement/Binder (weight %) = 5.0%
 Maximum Asphalt Cement/Binder Throughput = 175,200 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%	44,325.6	42,109.3
Cut back asphalt medium cure (assuming kerosene solvent)	28.6%	70.0%	50,107.2	35,075.0
Cut back asphalt slow cure (assuming fuel oil solvent)	20.0%	25.0%	35,040.0	8,760.0
Emulsified asphalt with solvent (assuming water, emulsifying agent, and 15% fuel oil solvent)	15.0%	46.4%	26,280.0	12,193.9
Other asphalt with solvent binder	25.9%	2.5%	45,376.8	1,134.4
Worst Case PTE of VOC =				42,109.3

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) =		10,983.67
PTE of Single HAP (tons/yr) =		3,789.84 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: Corydon Stone & Asphalt Co.
Source Address: 1100 Quarry Road NW, Corydon, IN 47112
Permit Number: F061-31157-05308
Reviewer: Hannah L. Desrosiers

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

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

Volatile Organic Compounds

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

Hazardous Air Pollutants

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

Methodology

The gasoline throughput was provided by the source.

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

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

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

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

*Source: Petroleum Liquids. Potter, T.L. and K.E. Simmons. 1998. Total Petroleum Hydrocarbon Criteria Working Group Series, Volume 2. Composition of Petroleum Mixtures. The Association for Environmental Health and Science.

Abbreviations

VOC = Volatile Organic Compounds

PTE = Potential to Emit

Appendix A.2: Limited Emissions Summary
Entire Source - Drum Mix

Company Name: Corydon Stone & Asphalt Co.
Source Address: 1100 Quarry Road NW, Corydon, IN 47112
Permit Number: F061-31157-05308
Reviewer: Hannah L. Desrosiers

Asphalt Plant Limitations - Drum Mix

Maximum Hourly Asphalt Production	400	ton/hr								
Annual Asphalt Production Limitation	1,478,987	ton/yr								
Blast Furnace Slag Usage Limitation	150,000	ton/yr	1.50	% sulfur						
Steel Slag Usage Limitation	1,478,987		0.66	% sulfur						
Maximum Dryer Fuel Input Rate	100	MMBtu/hr								
Natural Gas Limitation	876	MMCF/yr								
No. 2 Fuel Oil Limitation	1,225,204	gal/yr, and	0.50	% sulfur						
No. 4 Fuel Oil Limitation	1,159,860	gal/yr, and	0.50	% sulfur						
Residual (No. 5 or No. 6) Fuel Oil Limitation	1,108,146	gal/yr, and	0.50	% sulfur						
Propane Limitation	0	gal/yr, and	0	gr/100 ft3 sulfur						
Butane Limitation	0	gal/yr, and	0	gr/100 ft3 sulfur						
Used/Waste Oil Limitation	591,765	gal/yr, and	1.00	% sulfur	1.02	% ash	0.200	% chlorine,	0.010	% lead
Diesel Fuel Limitation - Generator < 600 HP	0	gal/yr, and								
Diesel Fuel Limitation - Generator > 600 HP	0	gal/yr	0	% sulfur						
PM Dryer/Mixer Limitation	0.274	lb/ton of asphalt production								
PM10 Dryer/Mixer Limitation	0.112	lb/ton of asphalt production								
PM2.5 Dryer/Mixer Limitation	0.119	lb/ton of asphalt production								
SO2 Dryer/Mixer Limitation	0.058	lb/ton of asphalt production								
NOx Dryer/Mixer Limitation	0.055	lb/ton of asphalt production								
VOC Dryer/Mixer Limitation	0.032	lb/ton of asphalt production								
CO Dryer/Mixer Limitation	0.130	lb/ton of asphalt production								
Blast Furnace Slag SO2 Dryer/Mixer Limitation	0.740	lb/ton of slag processed								
Steel Slag SO2 Dryer/Mixer Limitation	0.0014	lb/ton of slag processed								
Cold Mix Asphalt VOC Limitation	62.62	tons/yr								
HCl Limitation	13.2	lb/kgal								

Limited/Controlled Emissions

Process Description	Limited/Controlled Potential Emissions (tons/year)									
	Criteria Pollutants							Greenhouse Gas Pollutants	Hazardous Air Pollutants	
	PM	PM10	PM2.5	SO2	NOx	VOC	CO	CO2e	Total HAPs	Worst Case HAP
Ducted Emissions										
Dryer Fuel Combustion (worst case)	19.32	15.39	15.39	43.49	83.22	2.41	36.79	52,952.54	5.03	3.91 (HCL)
Dryer/Mixer (Process)	202.46	82.61	87.98	42.89	40.67	23.66	96.13	24,589.64	7.88	2.29 (formaldehyde)
Dryer/Mixer Slag Processing	0	0	0	55.50	0	0	0	0	0	0
Hot Oil Heater Fuel Combustion/Process (worst case)	0.02	0.07	0.07	0.01	0.88	0.05	0.74	1,752.00	0.02	0.016 (hexane)
Diesel-Fired Generator < 600 HF	0	0	0	0	0	0	0	0	0	0
Diesel-Fired Generator > 600 HF	0	0	0	0	0	0	0	0	0	0
Worst Case Emissions*	202.48	82.67	88.05	99.00	84.10	23.71	96.87	54,704.54	7.90	3.91 (HCL)
Fugitive Emissions										
Asphalt Load-Out, Silo Filling, On-Site Yard	0.82	0.82	0.82	0	0	12.67	2.13	0	0.21	0.07 (formaldehyde)
Material Storage Piles	2.38	0.83	0.83	0	0	0	0	0	0	0
Material Processing and Handling	4.78	2.26	0.34	0	0	0	0	0	0	0
Material Crushing, Screening, and Conveying	23.46	8.57	8.57	0	0	0	0	0	0	0
Unpaved and Paved Roads (worst case)	15.08	3.84	0.38	0	0	0	0	0	0	0
Cold Mix Asphalt Production	0	0	0	0	0	62.62	0	0	16.33	5.64 (xylenes)
Gasoline Fuel Transfer and Dispensing	0	0	0	0	0	0	0	0	0	0
Volatile Organic Liquid Storage Vessels	0	0	0	0	0	0	0	0	negl	negl
Total Fugitive Emissions	46.52	16.33	10.95	0.00	0.00	75.29	2.13	0.00	16.55	5.64 (xylenes)
Totals Limited/Controlled Emissions	249.00	99.00	99.00	99.00	84.10	99.00	99.00	54,704.54	24.45	5.64 (xylenes)

negl = negligible

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

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

Fuel component percentages provided by the source.

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

Company Name: Corydon Stone & Asphalt Co.
Source Address: 1100 Quarry Road NW, Corydon, IN 47112
Permit Number: F061-31157-05308
Reviewer: Hannah L. Desrosiers

The following calculations determine the limited emissions created from the combustion of natural gas, fuel oil, propane, butane, or used/waste oil in the dryer/mixer and all other fuel combustion sources at the source.

Fuel Limitations

Maximum Fuel Input Rate =	100	MMBtu/hr
Natural Gas Limitation =	876	MMCF/yr
No. 2 Fuel Oil Limitation =	1,225,204	gal/yr, and
No. 4 Fuel Oil Limitation =	1,159,860	gal/yr, and
Residual (No. 5 or No. 6) Fuel Oil Limitation =	1,108,146	gal/yr, and
Propane Limitation =	0	gal/yr, and
Butane Limitation =	0	gal/yr, and
Used/Waste Oil Limitation =	591,765	gal/yr, and
	0.50	% sulfur
	0.50	% sulfur
	0.50	% sulfur
	0	gr/100 ft3 sulfur
	0	gr/100 ft3 sulfur
	1.00	% sulfur
	1.02	% ash
	0.200	% chlorine
	0.010	% lead

Limited Emissions

Criteria Pollutant	Emission Factor (units)							Limited Potential to Emit (tons/yr)							Worse Case Fuel (tons/yr)
	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	No. 4 Fuel Oil* (lb/kgal)	Residual (No. 5 or No. 6) Fuel Oil (lb/kgal)	Propane (lb/kgal)	Butane (lb/kgal)	Used/Waste Oil (lb/kgal)	Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)	No. 4 Fuel Oil (tons/yr)	Residual (No. 5 or No. 6) Fuel Oil (tons/yr)	Propane (tons/yr)	Butane (tons/yr)	Used/Waste Oil (tons/yr)	
PM	1.9	2	7	7.815	0.5	0.6	65.28	0.83	1.23	4.06	4.33	0	0	19.32	19.32
PM10/PM2.5	7.6	3.3	8.3	9.315	0.5	0.6	52.02	3.33	2.02	4.81	5.16	0	0	15.39	15.39
SO2	0.6	71.0	75.0	78.5	0	0	147.0	0.26	43.49	43.49	43.49	0	0	43.49	43.49
NOx	190	24.0	47.0	47.0	13.0	15.0	19.0	83.22	14.70	27.26	26.04	0	0	5.62	83.22
VOC	5.5	0.20	0.20	0.28	1.00	1.10	1.0	2.41	0.12	0.12	0.16	0	0	0.30	2.41
CO	84	5.0	5.0	5.0	7.5	8.4	5.0	36.79	3.06	2.90	2.77	0	0	1.48	36.79
Hazardous Air Pollutant															
HCl							13.2							3.91	3.91
Antimony			5.25E-03	5.25E-03			negl			3.04E-03	2.91E-03			negl	3.0E-03
Arsenic	2.0E-04	5.6E-04	1.32E-03	1.32E-03			1.1E-01	8.8E-05	3.43E-04	7.66E-04	7.31E-04			3.25E-02	3.3E-02
Beryllium	1.2E-05	4.2E-04	2.78E-05	2.78E-05			negl	5.3E-06	2.57E-04	1.61E-05	1.54E-05			negl	2.6E-04
Cadmium	1.1E-03	4.2E-04	3.98E-04	3.98E-04			9.3E-03	4.8E-04	2.57E-04	2.31E-04	2.21E-04			2.75E-03	2.8E-03
Chromium	1.4E-03	4.2E-04	8.45E-04	8.45E-04			2.0E-02	6.1E-04	2.57E-04	4.90E-04	4.68E-04			5.92E-03	5.9E-03
Cobalt	8.4E-05		6.02E-03	6.02E-03			2.1E-04	3.7E-05		3.49E-03	3.34E-03			6.21E-05	3.5E-03
Lead	5.0E-04	1.3E-03	1.51E-03	1.51E-03			0.55	2.2E-04	7.72E-04	8.76E-04	8.37E-04			1.6E-01	0.16
Manganese	3.8E-04	8.4E-04	3.00E-03	3.00E-03			6.8E-02	1.7E-04	5.15E-04	1.74E-03	1.66E-03			2.01E-02	0.02
Mercury	2.6E-04	4.2E-04	1.13E-04	1.13E-04				1.1E-04	2.57E-04	6.55E-05	6.26E-05				2.6E-04
Nickel	2.1E-03	4.2E-04	8.45E-02	8.45E-02			1.1E-02	9.2E-04	2.57E-04	4.90E-02	4.68E-02			3.25E-03	0.049
Selenium	2.4E-05	2.1E-03	6.83E-04	6.83E-04			negl	1.1E-05	1.29E-03	3.96E-04	3.78E-04			negl	1.3E-03
1,1,1-Trichloroethane			2.36E-04	2.36E-04						1.37E-04	1.31E-04				1.4E-04
1,3-Butadiene															0.0E+00
Acetaldehyde															0.0E+00
Acrolein															0.0E+00
Benzene	2.1E-03		2.14E-04	2.14E-04				9.2E-04		1.24E-04	1.19E-04				9.2E-04
Bis(2-ethylhexyl)phthalate							2.2E-03							6.51E-04	6.5E-04
Dichlorobenzene	1.2E-03						8.0E-07	5.3E-04						2.37E-07	5.3E-04
Ethylbenzene			6.36E-05	6.36E-05						3.69E-05	3.52E-05				3.7E-05
Formaldehyde	7.5E-02	6.10E-02	3.30E-02	3.30E-02				3.3E-02	3.74E-02	1.91E-02	1.83E-02				0.037
Hexane	1.8E+00							0.79							0.788
Phenol							2.4E-03						7.10E-04		7.1E-04
Toluene	3.4E-03		6.20E-03	6.20E-03				1.5E-03		3.60E-03	3.44E-03				3.6E-03
Total PAH Haps	negl		1.13E-03	1.13E-03			3.9E-02	negl		6.55E-04	6.26E-04			1.16E-02	1.2E-02
Polycyclic Organic Matter		3.30E-03							2.02E-03						2.0E-03
Xylene			1.09E-04	1.09E-04						6.32E-05	6.04E-05				6.3E-05
Total HAPs								0.83	0.04	0.08	0.08	0	0	4.15	5.03

Methodology

Natural Gas: Limited Potential to Emit (tons/yr) = (Natural Gas Limitation (MMCF/yr)) * (Emission Factor (lb/MMCF)) * (ton/2000 lbs)
 All Other Fuels: Limited Potential to Emit (tons/yr) = (Fuel Limitation (gals/yr)) * (Emission Factor (lb/kgal)) * (kgal/1000 gal) * (ton/2000 lbs)
 Sources of AP-42 Emission Factors for fuel combustion:
 Natural Gas : AP-42 Chapter 1.4 (dated 7/98), Tables 1.4-1, 1.4-2, 1.4-3, and 1.4-4
 No. 2, No. 4, and No. 6 Fuel Oil: AP-42 Chapter 1.3 (dated 5/10), Tables 1.3-1, 1.3-2, 1.3-3, 1.3-8, 1.3-9, 1.3-10, and 1.3-11
 Propane and Butane: AP-42 Chapter 1.5 (dated 7/08), Tables 1.5-1 (assuming PM = PM10)
 Waste Oil: AP-42 Chapter 1.11 (dated 10/96), Tables 1.11-1, 1.11-2, 1.11-3, 1.11-4, and 1.11-5

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

Abbreviations

PM = Particulate Matter
 PM10 = Particulate Matter (<10 um)
 PM2.5 = Particulate Matter (< 2.5 um)
 SO2 = Sulfur Dioxide
 NOx = Nitrous Oxides
 VOC - Volatile Organic Compounds

CO = Carbon Monoxide
 HAP = Hazardous Air Pollutant
 HCl = Hydrogen Chloride
 PAH = Polyaromatic Hydrocarbon

**Appendix A.2: Limited Emissions Summary
Greenhouse Gas (CO₂e) Emissions from the
Dryer/Mixer Fuel Combustion with Maximum Capacity ≥ 100 MMBtu/hr**

Company Name: Corydon Stone & Asphalt Co.
Source Address: 1100 Quarry Road NW, Corydon, IN 47112
Permit Number: F061-31157-05308
Reviewer: Hannah L. Desrosiers

The following calculations determine the limited emissions created from the combustion of natural gas, fuel oil, propane, butane, or used/waste oil in the dryer/mixer and all other fuel combustion sources at the source.

Fuel Limitations

Maximum Fuel Input Rate =	100	MMBtu/hr								
Natural Gas Limitation =	876	MMCF/yr								
No. 2 Fuel Oil Limitation =	1,225,204	gal/yr, and	0.50	% sulfur						
No. 4 Fuel Oil Limitation =	1,159,860	gal/yr, and	0.50	% sulfur						
Residual (No. 5 or No. 6) Fuel Oil Limitation =	1,108,146	gal/yr, and	0.50	% sulfur						
Propane Limitation =	0	gal/yr, and	0	gr/100 ft3 sulfur						
Butane Limitation =	0	gal/yr, and	0	gr/100 ft3 sulfur						
Used/Waste Oil Limitation =	591,765	gal/yr, and	1.00	% sulfur	1.02	% ash	0.200	% 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	52,630.89	13,784.41	14,007.32	13,760.43	0	0	6,516.56
CH ₄	1.09	0.56	0.56	0.55	0	0	0.26
N ₂ O	0.96	0.16	0.11	0.29	0	0	0.05
Total	52,632.94	13,785.13	14,007.99	13,761.28	0	0	6,516.88
CO ₂ e Equivalent Emissions (tons/yr)	52,952.54	13,845.53	14,053.80	13,863.10	0	0	6,538.62

CO₂e for Worst Case Fuel* (tons/yr)
52,952.54

Methodology

Fuel Limitations from TSD Appendix A.2, page 1 of 15.

Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.

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

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

Company Name: Corydon Stone & Asphalt Co.
Source Address: 1100 Quarry Road NW, Corydon, IN 47112
Permit Number: F061-31157-05308
Reviewer: Hannah L. Desrosiers

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

Maximum Hourly Asphalt Production =	400	ton/hr
Annual Asphalt Production Limitation =	1,478,987	ton/yr
PM Dryer/Mixer Limitation =	0.274	lb/ton of asphalt production
PM10 Dryer/Mixer Limitation =	0.112	lb/ton of asphalt production
PM2.5 Dryer/Mixer Limitation =	0.119	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*	0.274	0.274	0.274	202.5	202.5	202.5	202.5
PM10*	0.112	0.112	0.112	82.6	82.6	82.6	82.6
PM2.5*	0.119	0.119	0.119	88.0	88.0	88.0	88.0
SO2**	0.003	0.011	0.058	2.5	8.1	42.9	42.9
NOx**	0.026	0.055	0.055	19.2	40.7	40.7	40.7
VOC**	0.032	0.032	0.032	23.7	23.7	23.7	23.7
CO***	0.130	0.130	0.130	96.1	96.1	96.1	96.1
Hazardous Air Pollutant							
HCl			2.10E-04			0.16	0.16
Antimony	1.80E-07	1.80E-07	1.80E-07	1.33E-04	1.33E-04	1.33E-04	1.33E-04
Arsenic	5.60E-07	5.60E-07	5.60E-07	4.14E-04	4.14E-04	4.14E-04	4.14E-04
Beryllium	negl	negl	negl	negl	negl	negl	0.00E+00
Cadmium	4.10E-07	4.10E-07	4.10E-07	3.03E-04	3.03E-04	3.03E-04	3.03E-04
Chromium	5.50E-06	5.50E-06	5.50E-06	4.07E-03	4.07E-03	4.07E-03	4.07E-03
Cobalt	2.60E-08	2.60E-08	2.60E-08	1.92E-05	1.92E-05	1.92E-05	1.92E-05
Lead	6.20E-07	1.50E-05	1.50E-05	4.58E-04	1.11E-02	1.11E-02	1.11E-02
Manganese	7.70E-06	7.70E-06	7.70E-06	5.69E-03	5.69E-03	5.69E-03	5.69E-03
Mercury	2.40E-07	2.60E-06	2.60E-06	1.77E-04	1.92E-03	1.92E-03	1.92E-03
Nickel	6.30E-05	6.30E-05	6.30E-05	4.66E-02	4.66E-02	4.66E-02	4.66E-02
Selenium	3.50E-07	3.50E-07	3.50E-07	2.59E-04	2.59E-04	2.59E-04	2.59E-04
2,2,4 Trimethylpentane	4.00E-05	4.00E-05	4.00E-05	2.96E-02	2.96E-02	2.96E-02	2.96E-02
Acetaldehyde			1.30E-03			0.96	0.96
Acrolein			2.60E-05			1.92E-02	1.92E-02
Benzene	3.90E-04	3.90E-04	3.90E-04	0.29	0.29	0.29	0.29
Ethylbenzene	2.40E-04	2.40E-04	2.40E-04	0.18	0.18	0.18	0.18
Formaldehyde	3.10E-03	3.10E-03	3.10E-03	2.29	2.29	2.29	2.29
Hexane	9.20E-04	9.20E-04	9.20E-04	0.68	0.68	0.68	0.68
Methyl chloroform	4.80E-05	4.80E-05	4.80E-05	0.04	0.04	0.04	0.04
MEK			2.00E-05			0.01	0.01
Propionaldehyde			1.30E-04			0.10	0.10
Quinone			1.60E-04			0.12	0.12
Toluene	1.50E-04	2.90E-03	2.90E-03	0.11	2.14	2.14	2.14
Total PAH Haps	1.90E-04	8.80E-04	8.80E-04	0.14	0.65	0.65	0.65
Xylene	2.00E-04	2.00E-04	2.00E-04	0.15	0.15	0.15	0.15
Total HAPs							7.88
Worst Single HAP							2.292429969 (formaldehyde)

Methodology

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

Emission Factors from AP-42 Chapter 11.1 (dated 3/04), Tables 11.1-3, 11.1-4, 11.1-7, 11.1-8, 11.1-10, and 11.1-12

Natural gas, No. 2 fuel oil, and waste oil represent the worst possible emissions scenario. AP-42 did not provide emission factors for any other fuels.

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

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

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

Abbreviations

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

**Appendix A.2: Limited Emissions Summary
Greenhouse Gas (CO₂e) Emissions from the
Drum-Mix Plant (Dryer/Mixer) Process Emissions**

Company Name: Corydon Stone & Asphalt Co.
Source Address: 1100 Quarry Road NW, Corydon, IN 47112
Permit Number: F061-31157-05308
Reviewer: Hannah L. Desrosiers

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

Maximum Hourly Asphalt Production =

400

 ton/hr
 Annual Asphalt Production Limitation =

1,478,987

 ton/yr

Criteria Pollutant	Emission Factor (lb/ton) Drum-Mix Plant (dryer/mixer)			Global Warming Potentials (GWP)	Limited Potential to Emit (tons/yr) Drum-Mix Plant (dryer/mixer)			CO ₂ e for Worst Case Fuel (tons/yr)
	Natural Gas	No. 2 Fuel Oil	Waste Oil		Natural Gas	No. 2 Fuel Oil	Waste Oil	
CO ₂	33	33	33	1	24,403.29	24,403.29	24,403.29	24,589.64
CH ₄	0.0120	0.0120	0.0120	21	8.87	8.87	8.87	
N ₂ O				310	0	0	0	
Total					24,412.16	24,412.16	24,412.16	
CO ₂ e Equivalent Emissions (tons/yr)					24,589.64	24,589.64	24,589.64	

Methodology

Emission Factors from AP-42 Chapter 11.1 (dated 3/04), Tables 11.1-7 and 11.1-8

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

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

Natural gas, No. 2 fuel oil, and waste oil represent the worst possible emissions scenario. AP-42 did not provide emission factors for any other fuels.

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

Abbreviations

CO₂ = Carbon Dioxide

CH₄ = Methane

N₂O = Nitrogen Dioxide

PTE = Potential to Emit



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

Company Name: Corydon Stone & Asphalt Co.
Source Address: 1100 Quarry Road NW, Corydon, IN 47112
Permit Number: F061-31157-05308
Reviewer: Hannah L. Desrosiers

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

Limited Blast Furnace Slag Usage =

150,000

 ton/yr

1.50

 % sulfur
Limited Annual Steel Slag Usage =

1,478,987

 ton/yr

0.66

 % sulfur

Type of Slag	SO2 Emission Factor (lb/ton)	Limited Potential to Emit SO2 (tons/yr)
Blast Furnace Slag*	0.7400	55.5
Steel Slag**	0.0014	1.04

Methodology

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

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

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

Abbreviations

SO2 = Sulfur Dioxide

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

Company Name: Corydon Stone & Asphalt Co.
Source Location: 1100 Quarry Road NW, Corydon, IN 47112
Permit Number: F061-31157-05308
Reviewer: Hannah L. Desrosiers

Maximum Hot Oil Heater Fuel Input Rate = 2.00 MMBtu/hr
 Natural Gas Usage = 18 MMCF/yr
 No. 2 Fuel Oil Usage = 0 gal/yr, and 0 % 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	0.017	0.000	0.02
PM10/PM2.5	7.6	3.3	0.067	0.000	0.07
SO2	0.6	71.0	0.005	0.000	0.01
NOx	100	20.0	0.876	0.000	0.88
VOC	5.5	0.20	0.048	0.000	0.05
CO	84	5.0	0.736	0.000	0.74
Hazardous Air Pollutant					
Arsenic	2.0E-04	5.6E-04	1.8E-06	0.00E+00	1.8E-06
Beryllium	1.2E-05	4.2E-04	1.1E-07	0.00E+00	1.1E-07
Cadmium	1.1E-03	4.2E-04	9.6E-06	0.00E+00	9.6E-06
Chromium	1.4E-03	4.2E-04	1.2E-05	0.00E+00	1.2E-05
Cobalt	8.4E-05		7.4E-07		7.4E-07
Lead	5.0E-04	1.3E-03	4.4E-06	0.00E+00	4.4E-06
Manganese	3.8E-04	8.4E-04	3.3E-06	0.00E+00	3.3E-06
Mercury	2.6E-04	4.2E-04	2.3E-06	0.00E+00	2.3E-06
Nickel	2.1E-03	4.2E-04	1.8E-05	0.00E+00	1.8E-05
Selenium	2.4E-05	2.1E-03	2.1E-07	0.00E+00	2.1E-07
Benzene	2.1E-03		1.8E-05		1.8E-05
Dichlorobenzene	1.2E-03		1.1E-05		1.1E-05
Ethylbenzene					0
Formaldehyde	7.5E-02	6.10E-02	6.6E-04	0.00E+00	0.001
Hexane	1.8E+00		0.02		0.016
Phenol					0
Toluene	3.4E-03		3.0E-05		3.0E-05
Total PAH Haps	negl		negl		0
Polycyclic Organic Matter		3.30E-03		0.00E+00	0.0E+00
Total HAPs =			1.7E-02	0.0E+00	0.017
Worst Single HAP =			1.6E-02	0.0E+00	1.6E-02
			(Hexane)	(Formaldehyde)	(Hexane)

Methodology

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

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

Abbreviations

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

**Appendix A.2: Limited Emissions Summary
Greenhouse Gas (CO₂e) Emissions from
Hot Oil Heater Fuel Combustion with Maximum Capacity < 100 MMBtu/hr**

Company Name: Corydon Stone & Asphalt Co.
Source Address: 1100 Quarry Road NW, Corydon, IN 47112
Permit Number: F061-31157-05308
Reviewer: Hannah L. Desrosiers

Maximum Hot Oil Heater Fuel Input Rate = 2.00 MMBtu/hr
 Natural Gas Usage = 18 MMCF/yr
 No. 2 Fuel Oil Usage = 0 gal/yr, 0.00 % 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	1,052.62	0.00
CH ₄	2.49	0.91	21	0.022	0.00E+00
N ₂ O	2.20	0.26	310	0.019	0.00E+00
Total				1,052.66	0.00

Worse Case CO₂e Emissions (tons/yr)
1,059.05

CO ₂ e Equivalent Emissions (tons/yr)	1,059.05	0.00
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Methodology

Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.

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

Natural Gas : Emission Factors for CO₂ and CH₄ from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from 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

Emission Factor (EF) Conversions

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

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

Equivalent Natural Gas Usage (MMCF/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 MMCF/1,000 MMBtu]

Equivalent Oil Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.140 MMBtu]

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

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

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

Abbreviations

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

Appendix A.2: Limited Emissions Summary
Hot Oil Heating System - Process Emissions

Company Name: Corydon Stone & Asphalt Co.
Source Address: 1100 Quarry Road NW, Corydon, IN 47112
Permit Number: F061-31157-05308
Reviewer: Hannah L. Desrosiers

The following calculations determine the unlimited/uncontrolled emissions from the combustion of natural gas and No. 2 fuel oil in the hot oil heating system, which is used to heat a specially designed transfer oil. The hot transfer oil is then pumped through a piping system that passes through the asphalt cement storage tanks, in order to keep the asphalt cement at the correct temperature.

Maximum Fuel Input Rate To Hot Oil Heater = 2.00 MMBtu/hr
 Natural Gas Usage = 18 MMCF/yr, and
 No. 2 Fuel Oil Usage = 0 gal/yr

Criteria Pollutant	Emission Factors		Unlimited/Uncontrolled Potential to Emit (tons/yr)		Worse Case PTE
	Natural Gas (lb/ft3)	No. 2 Fuel Oil (lb/gal)	Natural Gas	No. 2 Fuel Oil	
VOC	2.60E-08	2.65E-05	2.28E-04	0.000	2.28E-04
CO	8.90E-06	0.0012	0.078	0.000	0.078
Greenhouse Gas as CO2e*					
CO2	0.20	28.00	1752.00	0.00	1,752.00
Hazardous Air Pollutant					
Formaldehyde	2.60E-08	3.50E-06	2.28E-04	0.00E+00	2.28E-04
Acenaphthene		5.30E-07		0.00E+00	0.00E+00
Acenaphthylene		2.00E-07		0.00E+00	0.00E+00
Anthracene		1.80E-07		0.00E+00	0.00E+00
Benzo(b)fluoranthene		1.00E-07		0.00E+00	0.00E+00
Fluoranthene		4.40E-08		0.00E+00	0.00E+00
Fluorene		3.20E-08		0.00E+00	0.00E+00
Naphthalene		1.70E-05		0.00E+00	0.00E+00
Phenanthrene		4.90E-06		0.00E+00	0.00E+00
Pyrene		3.20E-08		0.00E+00	0.00E+00

Total HAPs 2.28E-04
Worst Single HAP 2.28E-04 (Naphthalene)

Methodology

Natural Gas Usage (MMCF/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 MMCF/1,000 MMBtu]
 No. 2 Fuel Oil Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.140 MMBtu]
 Natural Gas: Potential to Emit (tons/yr) = (Natural Gas Usage (MMCF/yr))*(Emission Factor (lb/CF))*(1000000 CF/MMCF)*(ton/2000 lbs)
 No. 2 Fuel Oil: Potential to Emit (tons/yr) = (No. 2 Fuel Oil Usage (gals/yr))*(Emission Factor (lb/gal))*(ton/2000 lbs)
 Unlimited Potential to Emit CO2e (tons/yr) = Unlimited Potential to Emit CO2 (ton/yr) x CO2 GWP (1)
 1 gallon of No. 2 Fuel Oil has a heating value of 140,000 Btu
 Emission Factors from AP-42 Chapter 11.1 (dated 3/04), Table 11.1-13

*Note: There are no emission factors for CH4 and N2O available in either 40 CFR 98, Subpart C or AP-42 Chapter 11.1. Therefore, it is assumed that there are no CH4 and N2O emission anticipated from this process.

Abbreviations

CO = Carbon Monoxide VOC = Volatile Organic Compound CO2 = Carbon Dioxide

Appendix A.2: Limited Emissions Summary
Reciprocating Internal Combustion Engines - Diesel Fuel
Output Rating (<=600 HP)

Company Name: Corydon Stone & Asphalt Co.
Source Address: 1100 Quarry Road NW, Corydon, IN 47112
Permit Number: F061-31157-05308
Reviewer: Hannah L. Desrosiers

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	SO ₂	NO _x	VOC	CO
Emission Factor in lb/hp-hr	0.0022	0.0022	0.0022	0.0021	0.0310	0.0025	0.0067
Emission Factor in lb/kgal ¹	43.07	43.07	43.07	40.13	606.85	49.22	130.77
Limited Emission in tons/yr	0.00	0.00	0.00	0.00	0.00	0.00	0.00

¹ The AP-42 Chapter 3.3-1 emission factors in lb/hp-hr were converted to lb/kgal emission factors using an average brake specific fuel consumption of 7,000 Btu / hp-hr, diesel heating value of 19,300 Btu / lb, and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

¹ Emission factor (lb/kgal) = AP-42 EF (lb/hp-hr) * 1/7,000 (hp-hr/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

² PM and PM2.5 emission factors are assumed to be equivalent to PM10 emission factors. No information was given regarding which method was used to determine the factor or the fraction of PM10 which is condensable.

Hazardous Air Pollutants (HAPs)

	Pollutant							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

³ PAH = Polyaromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)

⁴ The AP-42 Chapter 3.3-1 emission factors in lb/MMBtu were converted to lb/kgal emission factors using an average diesel heating value of 19,300 Btu / lb and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

⁴ Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) * 1/10⁶ (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		
	CO ₂ ⁵	CH ₄ ⁶	N ₂ O ⁶
Emission Factor in lb/hp-hr	1.15	NA	NA
Emission Factor in kg/MMBtu	NA	0.003	0.0006
Emission Factor in lb/kgal	22,512.07	0.91	0.18
Limited Emission in tons/yr	0.00	0.000	0.000

⁵ The AP-42 Chapter 3.3-1 emission factor in lb/hp-hr was converted to lb/kgal emission factor using an average brake specific fuel consumption of 7,000 Btu / hp-hr, diesel heating value of 19,300 Btu / lb, and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

⁵ Emission factor (lb/kgal) = AP-42 EF (lb/hp-hr) * 1/7,000 (hp-hr/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

⁶ The 40 CFR 98 Subpart C emission factors in kg/MMBtu were converted to lb/kgal emission factors using an average diesel heating value of 19,300 Btu / lb and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

⁶ Emission factor (lb/kgal) = 40 CFR 98 EF (kg/MMBtu) * 2.20462 (lb/kg) * 1/10⁶ (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: Corydon Stone & Asphalt Co.
Source Address: 1100 Quarry Road NW, Corydon, IN 47112
Permit Number: F061-31157-05308
Reviewer: Hannah L. Desrosiers

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

Sulfur Content (S) of Fuel (% by weight) 0

	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: Corydon Stone & Asphalt Co.
Source Address: 1100 Quarry Road NW, Corydon, IN 47112
Permit Number: F061-31157-05308
Reviewer: Hannah L. Desrosiers

The following calculations determine the limited fugitive emissions from hot asphalt mix load-out, silo filling, and on-site yard for a drum mix hot mix asphalt plant

Asphalt Temperature, T =	325	F
Asphalt Volatility Factor, V =	-0.5	
Annual Asphalt Production Limitation =	1,478,987	tons/yr

Pollutant	Emission Factor (lb/ton asphalt)			Limited Potential to Emit (tons/yr)			
	Load-Out	Silo Filling	On-Site Yard	Load-Out	Silo Filling	On-Site Yard	Total
Total PM*	5.2E-04	5.9E-04	NA	0.39	0.43	NA	0.82
Organic PM	3.4E-04	2.5E-04	NA	0.25	0.188	NA	0.44
TOC	0.004	0.012	0.001	3.08	9.01	0.813	12.9
CO	0.001	0.001	3.5E-04	1.00	0.873	0.260	2.13

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

PM/HAPs	0.018	0.021	0	0.039
VOC/HAPs	0.045	0.115	0.012	0.172
non-VOC/HAPs	2.4E-04	2.4E-05	6.3E-05	3.2E-04
non-VOC/non-HAPs	0.22	0.13	0.06	0.41

Total VOCs	2.89	9.01	0.8	12.7
Total HAPs	0.06	0.14	0.012	0.21
		Worst Single HAP		0.066
				(formaldehyde)

Methodology

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Abbreviations

TOC = Total Organic Compounds

CO = Carbon Monoxide

PM = Particulate

Matter

PM10 = Particulate Matter (<10 um)

PM2.5 = Particulate Matter (<2.5 um)

HAP = Hazardous Air Pollutant

VOC = Volatile Organic Compound

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

Company Name: Corydon Stone & Asphalt Co.
Source Address: 1100 Quarry Road NW, Corydon, IN 47112
Permit Number: F061-31157-05308
Reviewer: Hannah L. Desrosiers

Organic Particulate-Based Compounds (Table 11.1-15)

Pollutant	CASRN	Category	HAP Type	Source	Speciation Profile		Limited Potential to Emit (tons/yr)			
					Load-out and Onsite Yard (% by weight of Total Organic PM)	Silo Filling and Asphalt Storage Tank (% by weight of Total Organic PM)	Load-out	Silo Filling	Onsite Yard	Total
PAH HAPs										
Acenaphthene	83-32-9	PM/HAP	POM	Organic PM	0.26%	0.47%	6.6E-04	8.8E-04	NA	1.5E-03
Acenaphthylene	208-96-8	PM/HAP	POM	Organic PM	0.028%	0.014%	7.1E-05	2.6E-05	NA	9.7E-05
Anthracene	120-12-7	PM/HAP	POM	Organic PM	0.07%	0.13%	1.8E-04	2.4E-04	NA	4.2E-04
Benzo(a)anthracene	56-55-3	PM/HAP	POM	Organic PM	0.019%	0.056%	4.8E-05	1.1E-04	NA	1.5E-04
Benzo(b)fluoranthene	205-99-2	PM/HAP	POM	Organic PM	0.0076%	0	1.9E-05	0	NA	1.9E-05
Benzo(k)fluoranthene	207-08-9	PM/HAP	POM	Organic PM	0.0022%	0	5.5E-06	0	NA	5.5E-06
Benzo(g,h,i)perylene	191-24-2	PM/HAP	POM	Organic PM	0.0019%	0	4.8E-06	0	NA	4.8E-06
Benzo(a)pyrene	50-32-8	PM/HAP	POM	Organic PM	0.0023%	0	5.8E-06	0	NA	5.8E-06
Benzo(e)pyrene	192-97-2	PM/HAP	POM	Organic PM	0.0078%	0.0095%	2.0E-05	1.8E-05	NA	3.8E-05
Chrysene	218-01-9	PM/HAP	POM	Organic PM	0.103%	0.21%	2.6E-04	3.9E-04	NA	6.5E-04
Dibenz(a,h)anthracene	53-70-3	PM/HAP	POM	Organic PM	0.00037%	0	9.3E-07	0	NA	9.3E-07
Fluoranthene	206-44-0	PM/HAP	POM	Organic PM	0.05%	0.15%	1.3E-04	2.8E-04	NA	4.1E-04
Fluorene	86-73-7	PM/HAP	POM	Organic PM	0.77%	1.01%	1.9E-03	1.9E-03	NA	3.8E-03
Indeno(1,2,3-cd)pyrene	193-39-5	PM/HAP	POM	Organic PM	0.00047%	0	1.2E-06	0	NA	1.2E-06
2-Methylnaphthalene	91-57-6	PM/HAP	POM	Organic PM	2.38%	5.27%	6.0E-03	9.9E-03	NA	0.016
Naphthalene	91-20-3	PM/HAP	POM	Organic PM	1.25%	1.82%	3.2E-03	3.4E-03	NA	6.6E-03
Perylene	198-55-0	PM/HAP	POM	Organic PM	0.022%	0.03%	5.5E-05	5.6E-05	NA	1.1E-04
Phenanthrene	85-01-8	PM/HAP	POM	Organic PM	0.81%	1.80%	2.0E-03	3.4E-03	NA	5.4E-03
Pyrene	129-00-0	PM/HAP	POM	Organic PM	0.15%	0.44%	3.8E-04	8.3E-04	NA	1.2E-03
Total PAH HAPs							0.015	0.021	NA	0.036
Other semi-volatile HAPs										
Phenol		PM/HAP	---	Organic PM	1.18%	0	3.0E-03	0	0	3.0E-03

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

Methodology

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

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

Abbreviations

PM = Particulate Matter

HAP = Hazardous Air Pollutant

POM = Polycyclic Organic Matter

Appendix A.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%	2.89	9.01	0.76	12.67
non-VOC/non-HAPS										
Methane	74-82-8	non-VOC/non-HAP	---	TOC	6.50%	0.26%	2.0E-01	2.3E-02	5.3E-02	0.276
Acetone	67-64-1	non-VOC/non-HAP	---	TOC	0.046%	0.055%	1.4E-03	5.0E-03	3.7E-04	0.007
Ethylene	74-85-1	non-VOC/non-HAP	---	TOC	0.71%	1.10%	2.2E-02	9.9E-02	5.8E-03	0.127
Total non-VOC/non-HAPS					7.30%	1.40%	0.225	0.126	0.059	0.41
Volatile organic HAPs										
Benzene	71-43-2	VOC/HAP	---	TOC	0.052%	0.032%	1.6E-03	2.9E-03	4.2E-04	4.9E-03
Bromomethane	74-83-9	VOC/HAP	---	TOC	0.0096%	0.0049%	3.0E-04	4.4E-04	7.8E-05	8.1E-04
2-Butanone	78-93-3	VOC/HAP	---	TOC	0.049%	0.039%	1.5E-03	3.5E-03	4.0E-04	5.4E-03
Carbon Disulfide	75-15-0	VOC/HAP	---	TOC	0.013%	0.016%	4.0E-04	1.4E-03	1.1E-04	1.9E-03
Chloroethane	75-00-3	VOC/HAP	---	TOC	0.00021%	0.004%	6.5E-06	3.6E-04	1.7E-06	3.7E-04
Chloromethane	74-87-3	VOC/HAP	---	TOC	0.015%	0.023%	4.6E-04	2.1E-03	1.2E-04	2.7E-03
Cumene	92-82-8	VOC/HAP	---	TOC	0.11%	0	3.4E-03	0	8.9E-04	4.3E-03
Ethylbenzene	100-41-4	VOC/HAP	---	TOC	0.28%	0.038%	8.6E-03	3.4E-03	2.3E-03	0.014
Formaldehyde	50-00-0	VOC/HAP	---	TOC	0.088%	0.69%	2.7E-03	6.2E-02	7.2E-04	0.066
n-Hexane	100-54-3	VOC/HAP	---	TOC	0.15%	0.10%	4.6E-03	9.0E-03	1.2E-03	0.015
Isooctane	540-84-1	VOC/HAP	---	TOC	0.0018%	0.00031%	5.5E-05	2.8E-05	1.5E-05	9.8E-05
Methylene Chloride	75-09-2	non-VOC/HAP	---	TOC	0	0.00027%	0	2.4E-05	0	2.4E-05
MTBE	1634-04-4	VOC/HAP	---	TOC	0	0	0	0	0	0
Styrene	100-42-5	VOC/HAP	---	TOC	0.0073%	0.0054%	2.2E-04	4.9E-04	5.9E-05	7.7E-04
Tetrachloroethene	127-18-4	non-VOC/HAP	---	TOC	0.0077%	0	2.4E-04	0	6.3E-05	3.0E-04
Toluene	100-88-3	VOC/HAP	---	TOC	0.21%	0.062%	6.5E-03	5.6E-03	1.7E-03	0.014
1,1,1-Trichloroethane	71-55-6	VOC/HAP	---	TOC	0	0	0	0	0	0
Trichloroethene	79-01-6	VOC/HAP	---	TOC	0	0	0	0	0	0
Trichlorofluoromethane	75-69-4	VOC/HAP	---	TOC	0.0013%	0	4.0E-05	0	1.1E-05	5.1E-05
m-/p-Xylene	1330-20-7	VOC/HAP	---	TOC	0.41%	0.20%	1.3E-02	1.8E-02	3.3E-03	0.034
o-Xylene	95-47-6	VOC/HAP	---	TOC	0.08%	0.057%	2.5E-03	5.1E-03	6.5E-04	8.2E-03
Total volatile organic HAPs					1.50%	1.30%	0.046	0.117	0.012	0.175

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: Corydon Stone & Asphalt Co.
Source Address: 1100 Quarry Road NW, Corydon, IN 47112
Permit Number: F061-31157-05308
Reviewer: Hannah L. Desrosiers

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

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

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

Material	Silt Content (wt %)*	Emission Factor (lb/acre/day)	Maximum Anticipated Pile Size (acres)**	PTE of PM (tons/yr)	PTE of PM10/PM2.5 (tons/yr)
Sand	2.6	3.01	0.80	0.439	0.154
Limestone	1.6	1.85	1.30	0.439	0.154
RAP	0.5	0.58	1.40	0.148	0.052
Gravel	1.6	1.85	1.20	0.406	0.142
Shingles	0.5	0.58	1.40	0.148	0.052
Slag	3.8	4.40	1.00	0.803	0.281
Totals				2.38	0.83

Methodology

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

PTE of PM10/PM2.5 (tons/yr) = (Potential PM Emissions (tons/yr)) * 35%

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

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

PM2.5 = PM10

Abbreviations

RAP = recycled asphalt pavement

PM = Particulate Matter

PM10 = Particulate Matter (<10 um)

PM2.5 = Particulate Matter (<2.5 um)

PTE = Potential to Emit

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

Company Name: Corydon Stone & Asphalt Co.
Source Address: 1100 Quarry Road NW, Corydon, IN 47112
Permit Number: F061-31157-05308
Reviewer: Hannah L. Desrosiers

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

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

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

where: E_f = Emission factor (lb/ton)

k (PM) =	0.74	= particle size multiplier (0.74 assumed for aerodynamic diameter <=100 um)
k (PM10) =	0.35	= particle size multiplier (0.35 assumed for aerodynamic diameter <=10 um)
k (PM2.5) =	0.053	= particle size multiplier (0.053 assumed for aerodynamic diameter <=2.5 um)
U =	10.2	= worst case annual mean wind speed (Source: NOAA, 2006*)
M =	4.0	= material % moisture content of aggregate (Source: AP-42 Section 11.1.1.1)
E_f (PM) =	2.27E-03	lb PM/ton of material handled
E_f (PM10) =	1.07E-03	lb PM10/ton of material handled
E_f (PM2.5) =	1.62E-04	lb PM2.5/ton of material handled

Annual Asphalt Production Limitation =	1,478,987	tons/yr
Percent Asphalt Cement/Binder (weight %) =	5.0%	
Maximum Material Handling Throughput =	1,405,038	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	1.59	0.75	0.11
Front-end loader dumping of materials into feeder bins	1.59	0.75	0.11
Conveyor dropping material into dryer/mixer or batch tower	1.59	0.75	0.11
Total (tons/yr)	4.78	2.26	0.34

Methodology

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

Material Screening and Conveying (AP-42 Section 19.2.2)

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

Operation	Uncontrolled Emission Factor for PM (lbs/ton)*	Uncontrolled Emission Factor for PM10 (lbs/ton)*	Limited PTE of PM (tons/yr)	Limited PTE of PM10/PM2.5 (tons/yr)**
Crushing	0.0054	0.0024	3.79	1.69
Screening	0.025	0.0087	17.56	6.11
Conveying	0.003	0.0011	2.11	0.77
Limited Potential to Emit (tons/yr) =			23.46	8.57

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: Corydon Stone & Asphalt Co.
Source Address: 1100 Quarry Road NW, Corydon, IN 47112
Permit Number: F061-31157-05308
Reviewer: Hannah L. Desrosiers

Unpaved Roads at Industrial Site

The following calculations determine the amount of emissions created by unpaved roads, based on 8,760 hours of use and AP-42, Ch 13.2.2 (12/2003).

Annual Asphalt Production Limitation	= 1,478,987	tons/yr
Percent Asphalt Cement/Binder (weight %)	= 5.0%	
Maximum Material Handling Throughput	= 1,405,038	tons/yr
Maximum Asphalt Cement/Binder Throughput	= 73,949	tons/yr
No. 2 Fuel Oil Limitation	= 1,225,204	gallons/yr

Process	Vehicle Type	Maximum Weight of Vehicle (tons)	Maximum Weight of Load (tons)	Maximum Weight of Vehicle and Load (tons/trip)	Maximum trips per year (trip/yr)	Total Weight driven per year (ton/yr)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	17.0	22.4	39.4	6.3E+04	2.5E+06	100	0.019	1,188.0
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	17.0	0	17.0	6.3E+04	1.1E+06	100	0.019	1,188.0
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	12.0	36.0	48.0	2.1E+03	9.9E+04	0	0.000	0.0
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.0	2.1E+03	2.5E+04	0	0.000	0.0
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	12.0	32.0	44.0	1.3E+02	5.7E+03	0	0.000	0.0
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.0	1.3E+02	1.6E+03	0	0.000	0.0
Aggregate/RAP Loader Full	Front-end loader (3 CY)	15.0	4.2	19.2	3.3E+05	6.4E+06	100	0.019	6,335.8
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	15.0	0	15.0	3.3E+05	5.0E+06	100	0.019	6,335.8
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	17.0	24.0	41.0	6.2E+04	2.5E+06	0	0.000	0.0
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	17.0	0	17.0	6.2E+04	1.0E+06	0	0.000	0.0
Total					9.2E+05	1.9E+07			1.5E+04

Average Vehicle Weight Per Trip = 20.3 tons/trip
Average Miles Per Trip = 0.016 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	6.09	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)	3.62	0.92	0.09	2.38	0.61	0.06	1.19	0.30	0.03
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	3.62	0.92	0.09	2.38	0.61	0.06	1.19	0.30	0.03
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	0.000	0.000	0.00	0.000	0.000	0.0E+00	0.000	0.000	0.0E+00
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	0.000	0.000	0.00	0.000	0.000	0.0E+00	0.000	0.000	0.0E+00
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	0.000	0.000	0.0E+00	0.000	0.000	0.0E+00	0.000	0.000	0.0E+00
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	0.000	0.000	0.0E+00	0.000	0.000	0.0E+00	0.000	0.000	0.0E+00
Aggregate/RAP Loader Full	Front-end loader (3 CY)	19.31	4.92	0.49	12.69	3.24	0.32	6.35	1.62	0.16
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	19.31	4.92	0.49	12.69	3.24	0.32	6.35	1.62	0.16
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Totals		45.85	11.69	1.17	30.15	7.68	0.77	15.08	3.84	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 (mi/trip) = [Maximum one-way distance (feet/trip)] / [5280 ft/mile]
 Maximum one-way miles (miles/yr) = [Maximum trips per year (trip/yr)] * [Maximum one-way distance (mi/trip)]
 Average Vehicle Weight Per Trip (ton/trip) = SUM[Total Weight driven per year (ton/yr)] / SUM[Maximum trips per year (trip/yr)]
 Average Miles Per Trip (miles/trip) = SUM[Maximum one-way miles (miles/yr)] / SUM[Maximum trips per year (trip/yr)]
 Unmitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Unmitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
 Mitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Mitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
 Controlled PTE (tons/yr) = (Mitigated PTE (tons/yr)) * (1 - Dust Control Efficiency)

Abbreviations

PM = Particulate Matter PM10 = Particulate Matter (<10 um) PM2.5 = Particulate Matter (<2.5 um) PTE = Potential to Emit

Appendix A.2: Limited Emissions Summary
Paved Roads
Limited Emissions

Company Name: Corydon Stone & Asphalt Co.
Source Address: 1100 Quarry Road NW, Corydon, IN 47112
Permit Number: F061-31157-05308
Reviewer: Hannah L. Desrosiers

Paved Roads at Industrial Site

The following calculations determine the amount of emissions created by paved roads, based on 8,760 hours of use and AP-42, Ch 13.2.1 (12/2003).

Annual Asphalt Production Limitation	=	1,478,987	tons/yr
Percent Asphalt Cement/Binder (weight %)	=	5.0%	
Maximum Material Handling Throughput	=	1,405,038	tons/yr
Maximum Asphalt Cement/Binder Throughput	=	73,949	tons/yr
No. 2 Fuel Oil Limitation	=	1,225,204	gallons/yr

Process	Vehicle Type	Maximum Weight of Vehicle (tons)	Maximum Weight of Load (tons)	Maximum Weight of Vehicle and Load (tons/trip)	Maximum trips per year (trip/yr)	Total Weight driven per day (ton/yr)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	17.0	22.4	39.40	6.3E+04	2.5E+06	700	0.133	8,315.8
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	17.0	0	17.00	6.3E+04	1.1E+06	700	0.133	8,315.8
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	12.0	36.0	48.00	2.1E+03	9.9E+04	700	0.133	272.3
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.00	2.1E+03	2.5E+04	700	0.133	272.3
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	12.0	32.0	44.00	1.3E+02	5.7E+03	700	0.133	17.2
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.00	1.3E+02	1.6E+03	700	0.133	17.2
Aggregate/RAP Loader Full	Front-end loader (3 CY)	15.0	4.2	19.20	3.3E+05	6.4E+06	700	0.133	44,350.9
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	15.0	0	15.00	3.3E+05	5.0E+06	700	0.133	44,350.9
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	17.0	24.0	41.00	6.2E+04	2.5E+06	700	0.133	8,169.9
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	17.0	0	17.00	6.2E+04	1.0E+06	700	0.133	8,169.9
Total					9.2E+05	1.9E+07			1.2E+05

Average Vehicle Weight Per Trip	=	20.3	tons/trip
Average Miles Per Trip	=	0.133	miles/trip

Unmitigated Emission Factor, $E_f = [k * (sL)^{0.91} * (W)^{1.02}]$ (Equation 1 from AP-42 13.2.1)

	PM	PM10	PM2.5	
where k =	0.011	0.0022	0.00054	lb/mi = particle size multiplier (AP-42 Table 13.2.1-1)
W =	20.3	20.3	20.3	tons = average vehicle weight (provided by source)
sL =	0.6	0.6	0.6	g/m ² = Ubiquitous Baseline Silt Loading Values of paved roads (Table 13.2.1-3 for summer months)

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

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

	PM	PM10	PM2.5	
Unmitigated Emission Factor, E_f	0.15	0.03	0.01	lb/mile
Mitigated Emission Factor, E_{ext}	0.14	0.03	0.01	lb/mile
Dust Control Efficiency =	50%	50%	50%	(pursuant to control measures outlined in fugitive dust control plan)

Process	Vehicle Type	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Aggregate/RAP Truck Enter Full	Dump truck (16 CY)	0.62	0.12	0.03	0.57	0.11	0.03	0.28	0.06	0.01
Aggregate/RAP Truck Leave Empty	Dump truck (16 CY)	0.62	0.12	0.03	0.57	0.11	0.03	0.28	0.06	0.01
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	0.020	0.004	9.9E-04	0.019	0.004	9.1E-04	0.009	1.9E-03	4.5E-04
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	0.020	0.004	9.9E-04	0.019	0.004	9.1E-04	0.009	1.9E-03	4.5E-04
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	1.3E-03	2.6E-04	6.3E-05	1.2E-03	2.3E-04	5.7E-05	5.8E-04	1.2E-04	2.9E-05
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	1.3E-03	2.6E-04	6.3E-05	1.2E-03	2.3E-04	5.7E-05	5.8E-04	1.2E-04	2.9E-05
Aggregate/RAP Loader Full	Front-end loader (3 CY)	3.30	0.66	0.16	3.02	0.60	0.15	1.51	0.30	0.07
Aggregate/RAP Loader Empty	Front-end loader (3 CY)	3.30	0.66	0.16	3.02	0.60	0.15	1.51	0.30	0.07
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	0.61	0.12	0.03	0.56	0.11	0.03	0.28	0.06	0.01
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	0.61	0.12	0.03	0.56	0.11	0.03	0.28	0.06	0.01
Totals		9.09	1.82	0.45	8.31	1.66	0.41	4.16	0.83	0.20

Methodology

Maximum Material Handling Throughput = [Annual Asphalt Production Limitation (tons/yr)] * [1 - Percent Asphalt Cement/Binder (weight %)]
 Maximum Asphalt Cement/Binder Throughput = [Annual Asphalt Production Limitation (tons/yr)] * [Percent Asphalt Cement/Binder (weight %)]
 Maximum Weight of Vehicle and Load (tons/trip) = [Maximum Weight of Vehicle (tons/trip)] + [Maximum Weight of Load (tons/trip)]
 Maximum trips per year (trip/yr) = [Throughput (tons/yr)] / [Maximum Weight of Load (tons/trip)]
 Total Weight driven per year (ton/yr) = [Maximum Weight of Vehicle and Load (tons/trip)] * [Maximum trips per year (trip/yr)]
 Maximum one-way distance (mi/trip) = [Maximum one-way distance (feet/trip)] / [5280 ft/mile]
 Maximum one-way miles (miles/yr) = [Maximum trips per year (trip/yr)] * [Maximum one-way distance (mi/trip)]
 Average Vehicle Weight Per Trip (ton/trip) = SUM[Total Weight driven per year (ton/yr)] / SUM[Maximum trips per year (trip/yr)]
 Average Miles Per Trip (miles/trip) = SUM[Maximum one-way miles (miles/yr)] / SUM[Maximum trips per year (trip/yr)]
 Unmitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Unmitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
 Mitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Mitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
 Controlled PTE (tons/yr) = (Mitigated PTE (tons/yr)) * (1 - Dust Control Efficiency)

Abbreviations

PM = Particulate Matter PM10 = Particulate Matter (<10 um) PM2.5 = Particulate Matter (<2.5 um) PTE = Potential to Emit

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

Company Name: Corydon Stone & Asphalt Co.
Source Address: 1100 Quarry Road NW, Corydon, IN 47112
Permit Number: F061-31157-05308
Reviewer: Hannah L. Desrosiers

The following calculations determine the amount of VOC and HAP emissions created from volatilization of solvent used as diluent in the liquid binder for cold mix asphalt production

Limited VOC Emissions from the Sum of the Liquid Binders = 62.62 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%	65.92	62.62	1.053
Cut back asphalt medium cure (assuming kerosene solvent)	28.6%	70.0%	89.46	62.62	1.429
Cut back asphalt slow cure (assuming fuel oil solvent)	20.0%	25.0%	250.49	62.62	4.000
Emulsified asphalt with solvent (assuming water, emulsifying agent, and 15% fuel oil solvent)	15.0%	46.4%	134.96	62.62	2.155
Other asphalt with solvent binder	25.9%	2.5%	2,504.90	62.62	40.0
Worst Case Limited PTE of VOC =				62.62	

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) =	16.33
Limited PTE of Single HAP (tons/yr) =	5.64 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.

Abbreviations

VOC = Volatile Organic Compounds
 PTE = Potential to Emit

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

Company Name: Corydon Stone & Asphalt Co.
Source Address: 1100 Quarry Road NW, Corydon, IN 47112
Permit Number: F061-31157-05308
Reviewer: Hannah L. Desrosiers

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

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

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

Volatile Organic Compounds

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

Hazardous Air Pollutants

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

Methodology

The gasoline throughput was provided by the source.

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

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

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

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

*Source: Petroleum Liquids. Potter, T.L. and K.E. Simmons. 1998. Total Petroleum Hydrocarbon Criteria Working Group Series, Volume 2. Composition of Petroleum Mixtures. The Association for Environmental Health and Science.

Abbreviations

VOC = Volatile Organic Compounds

PTE = Potential to Emit



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

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: Steve Walker
Corydon Stone & Asphalt Company
PO Box D
Sellersburg, IN 47172

DATE: August 10, 2012

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

SUBJECT: Final Decision
Federally Enforceable State Operating Permit (FESOP) Renewal
061-31157-05308

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:
Kenneth B. Rush, Responsible Official
OAQ Permits Branch Interested Parties List

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

Final Applicant Cover letter.dot 11/30/07



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August 10, 2012

TO: Corydon Public Library

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

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

Applicant Name: Corydon Stone & Asphalt Company
Permit Number: 061-31157-05308

You previously received information to make available to the public during the public comment period of a draft permit. Enclosed is a copy of the final decision and supporting materials for the same project. Please place the enclosed information along with the information you previously received. To ensure that your patrons have ample opportunity to review the enclosed permit, **we ask that you retain this document for at least 60 days.**

The applicant is responsible for placing a copy of the application in your library. If the permit application is not on file, or if you have any questions concerning this public review process, please contact Joanne Smiddie-Brush, OAQ Permits Administration Section at 1-800-451-6027, extension 3-0185.

Enclosures
Final Library.dot 11/30/07

Mail Code 61-53

IDEM Staff	PWAY 8/10/2012 Corydon Stone & Asphalt Company 061-31157-05308 (final)		AFFIX STAMP HERE IF USED AS CERTIFICATE OF MAILING	
Name and address of Sender		Indiana Department of Environmental Management Office of Air Quality – Permits Branch 100 N. Senate Indianapolis, IN 46204	Type of Mail: CERTIFICATE OF MAILING ONLY	

Line	Article Number	Name, Address, Street and Post Office Address	Postage	Handing Charges	Act. Value (If Registered)	Insured Value	Due Send if COD	R.R. Fee	S.D. Fee	S.H. Fee	Rest. Del. Fee	Remarks
1		Steve Walker Corydon Stone & Asphalt Company PO Box D Sellersburg IN 47172 (Source CAATS)										
2		Kenneth B Rush VP Corydon Stone & Asphalt Company PO Box D Sellersburg IN 47172 (RO CAATS)										
3		Harrison County Commissioners 300 North Capital Corydon IN 47112 (Local Official)										
4		Harrison County Health Department 241 Atwood Street Ste#105 Corydon IN 47112-1882 (Health Department)										
5		Mr. Robert Bottom Paddlewheel Alliance P.O. Box 35531 Louisville KY 40232-5531 (Affected Party)										
6		Harrison County Library 105 N Capitol Avenue Corydon IN 47112 (Library)										
7		Corydon Town Council 113 N. Oak St. Corydon IN 47112 (Local Official)										
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