INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We Protect Hoosiers and Our Environment.
100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Michael R. Pence
Governor

Thomas W. Easterly
Commissioner

TO: Interested Parties / Applicant

DATE: July 31, 2013

RE: J.H. Rudolph & Company, Inc. – St. Croix Plant / 123-32840-00025

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.dot 6/13/13

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Mr. Brian Peters, EHS Manager
J. H. Rudolph & Company, Inc. - St. Croix Plant
534 Mozart St
Tell City, IN 47586

July 31, 2013

Re: 123-32840-00025
Second Significant Revision to
F123-28142-00025

Dear Mr. Peters:

J. H. Rudolph & Company, Inc. - St. Croix Plant was issued a Federally Enforceable State Operating Permit (FESOP) Renewal No. F123-28142-00025 on February 11, 2010, for a stationary drum hot-mix asphalt plant, with the capability of producing warm-mix asphalt, and a cold-mix asphalt production operation, located at 12050 Optical Road, English, IN 47118. On February 19, 2013, the Office of Air Quality (OAQ) received an application from the source requesting that the permit be amended to add one (1) diesel fuel-fired crusher to its operation to "break" large masses, or "clumps", of recycled asphalt materials (RAM), including recycled asphalt pavement (RAP), and/or recycled asphalt shingles (RAS). Additionally, J. H. Rudolph & Company, Inc. has requested approval to add limestone to its aggregate mix, increase its operational flexibility of the operation by adjusting the existing fuel limits, revise the baghouse pressure drop to reflect the normal operating condition of the unit, update the gasoline storage tank emission unit description, and remove the natural gas fired inert gas generator from the permit since the unit is no longer in use and has been removed from the site. Finally, J. H. Rudolph & Company, Inc. has notified IDEM that the existing 150 ton/hr crusher, identified as RAP Crusher, approved for construction in 2011 as a part of FESOP SPR No.: F123-30568-00025, was never installed and will instead become an intermittent activity. The attached Technical Support Document (TSD) provides additional explanation of the changes to the source and permit. Pursuant to the provisions of 326 IAC 2-8-11.1, these changes to the permit are required to be reviewed in accordance with the Significant Permit Revision (SPR) procedures of 326 IAC 2-8-11.1(f). Pursuant to the provisions of 326 IAC 2-8-11.1, a significant permit revision to this permit is hereby approved as described in the attached Technical Support Document (TSD).

The following construction conditions are applicable to the proposed project:

1. General Construction Conditions
The data and information supplied with the application shall be considered part of this source modification approval. Prior to any proposed change in construction which may affect the potential to emit (PTE) of the proposed project, the change must be approved by the Office of Air Quality (OAQ).

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

3. Effective Date of the Permit
Pursuant to IC 13-15-5-3, this approval becomes effective upon its issuance.

4. Pursuant to 326 IAC 2-1.1-9 (Revocation), the Commissioner may revoke this approval if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.

5. All requirements and conditions of this construction approval shall remain in effect unless modified in a manner consistent with procedures established pursuant to 326 IAC 2.

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

This decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21.5-3-5. If you have any questions on this matter, please contact Ms. Hannah Desrosiers, of my staff, at 317-233-9327 or 1-800-451-6027, and ask for extension 3-9327.

Sincerely,

Nathan Bell

Nathan Bell, Section Chief
Permits Branch
Office of Air Quality

Attachments: Technical Support Document and revised permit, including attachments A-E.

NB/hd

cc: File - Perry County
Perry County Health Department
U.S. EPA, Region V
Compliance and Enforcement Branch

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Michael R. Pence
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Commissioner

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

J.H. Rudolph & Company, Inc. - St. Croix Plant
12050 Optical Road
English, Indiana 47118

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

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

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

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

Operation Permit No. F123-28142-00025	
Original Issued by: Iryn Calilung, Section Chief Permits Branch Office of Air Quality	Issuance Date: February 11, 2010 Expiration Date: February 11, 2020

First Administrative Amendment No 123-29250-00025, issued June 17, 2010;
First Significant Permit Revision No 123-30568-00025, issued October 3, 2011.

Second Significant Permit Revision No. 123-32840-00025	
Issued by: Nathan C. Bell, Section Chief Permits Branch Office of Air Quality	Issuance Date: July 31, 2013 Expiration Date: February 11, 2020

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Attachment A: Fugitive Dust Control Plan

Attachment B: NSPS Subpart I - Standards of Performance for Hot Mix Asphalt Facilities [40 CFR Part 60, Subpart I] [326 IAC 12-1]

Attachment C: NSPS Subpart OOO - Standards of Performance for Nonmetallic Mineral Processing Plants [40 CFR Part 60, Subpart OOO] [326 IAC 12-1]

Attachment D: NESHAP Subpart ZZZZ - Standards for Stationary Reciprocating Internal Combustion Engines [40 CFR 63, Subpart ZZZZ] [326 IAC 20-82]

Attachment E: NESHAP Subpart CCCCCC - Area Source Standards for Source Category: Gasoline Dispensing Facilities [40 CFR 63, Subpart 6C] [326 IAC 20]

SECTION A SOURCE SUMMARY

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

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

The Permittee owns and operates a stationary drum hot-mix asphalt plant, with the capability of producing warm-mix asphalt, and a cold-mix asphalt production operation. Electric arc furnace steel mill slag and asbestos-free recycled asphalt shingles are processed in the aggregate mix. Additionally, recycled asphalt pavement (RAP) is crushed and asbestos-free recycled shingles are ground on-site.

Source Address:	12050 Optical Road, English, Indiana 47118
General Source Phone Number:	(812) 547-1400
SIC Code:	2951 (Asphalt Paving Mixtures and Blocks)
County Location:	Perry
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 dryer/mixer, constructed in 2005, capable of processing three hundred twenty-five (325) tons of raw material per hour per hour, processing steel slag and asbestos-free recycled asphalt shingles (RAS) in the aggregate mix, equipped with one (1) one hundred twenty (120) million British thermal units (MMBtu) per hour re-refined waste oil fired dryer burner, using natural gas, No. 2 distillate fuel oil, No. 4 distillate fuel oil, and biodiesel as backup fuels, controlling particulate emissions with one (1) jetpulse baghouse, and exhausting to one (1) stack, identified as EP1. This asphalt plant has the capability of producing warm-mix asphalt;

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

(b) Material handling, screening, and conveying operations, constructed in 2005, and approved for modification in 2011, uncontrolled and exhausting to the atmosphere, and consisting of the following:

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

(A) Sand storage piles, with a maximum anticipated pile size of one and fifty hundredths (1.50) acres

(B) Gravel storage piles, with a maximum anticipated pile size of one and fifty hundredths (1.50) acres

(C) Steel slag storage piles, with a maximum anticipated pile size of one and fifty hundredths (1.50) acres

(D) Limestone storage piles, with a maximum anticipated pile size of eight (8.00) acres.

(2) Four (4) aggregate conveyors;

(3) One (1) scalping screen;

(4) Six (6) cold feed bins;

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

(c) One (1) recycled asphalt materials (RAM) processing system, constructed in 2005, modified in 2011, and approved for modification in 2013, with a maximum throughput capacity of one hundred (150) tons of RAM per hour, uncontrolled and exhausting to the atmosphere, and consisting of:

(1) One (1) intermittent, portable, non-stationary, recycled asphalt materials (RAM) crushing operation, identified as RAM Crusher, having a maximum rated capacity of 150 tons of RAM per hour, uncontrolled and exhausting to the atmosphere;

Under 40 CFR 1068.30, General Compliance Provisions for Highway, Stationary, and Nonroad Programs, this unit is considered a portable, non-stationary, nonroad engine.

(2) One (1) 210 horsepower (hp), diesel fuel-fired portable crusher, identified as RAM Lump Breaker, manufactured in 1985 and initially constructed in 1990, approved for construction in 2013, with a maximum rated capacity of 100 tons of recycled asphalt material (RAM) per hour, uncontrolled and exhausting to the atmosphere;

Under 40 CFR 63, Subpart ZZZZ (NESHAP for Stationary Reciprocating Internal Combustion Engines (RICE)), this unit is considered an affected facility.

(3) Five (5) RAM conveyors;

(4) Two (2) RAM feeder bins;

(5) Two (2) RAM screens;

(6) Recycled asphalt pavement (RAP) storage piles, with a maximum anticipated pile size of one and fifty hundredths (1.50) acres; and

(7) Asbestos-free recycled asphalt shingle (ground factory seconds and/or post consumer waste) (RAS) storage piles, with a combined maximum anticipated pile size of one and fifty hundredths (1.50) acres.

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

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

(1) cold-mix (stockpile mix) asphalt storage piles;

(2) One (1) liquid asphalt storage tank, 64-22, horizontal, identified as Tank #9, constructed in 2005, with a maximum storage capacity of 17,500 gallons, uncontrolled and exhausting to the atmosphere; and

(3) One (1) emulsified tank, horizontal split, constructed in 2005, with a maximum storage capacity of 11,000 gallons, uncontrolled and exhausting to the atmosphere.

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) liquid asphalt cement hot oil heating system, constructed in 2005, and consisting of the following:

(1) One (1) natural gas fired hot oil heater, with a maximum rated heat input capacity of two and one hundred fifteen thousandths (2.115) MMBtu/hr, using No. 2 distillate fuel oil, No. 4 distillate fuel oil**,** re-refined waste oil, and biodiesel as backup fuels, uncontrolled and exhausting to one (1) stack, identified as EP2;

(b) One (1) liquid asphalt storage tank, 64-22, horizontal, identified as Tank #3, with a maximum storage capacity of 20,000 gallons, uncontrolled and exhausting to the atmosphere;

(c) One (1) liquid asphalt storage tank, 64-22, horizontal, identified as Tank #1, with a maximum storage capacity of 25,000 gallons, uncontrolled and exhausting to the atmosphere;

(d) One (1) liquid asphalt storage tank, 64-22, horizontal, identified as Tank #2, with a maximum storage capacity of 18,000 gallons, uncontrolled and exhausting to the atmosphere;

(e) One (1) No. 2 distillate fuel oil storage tank, vertical, identified as #2 Off Road Diesel, constructed in 2005, with a maximum storage capacity of 15,500 gallons, uncontrolled and exhausting to the atmosphere;

(f) One (1) waste oil storage tank, vertical, identified as #4 Waste Oil, constructed in 2005, with a maximum storage capacity of 15,500 gallons, uncontrolled and exhausting to the atmosphere;

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

(1) One (1) gasoline storage tank, constructed in 2005, approved for modification in 2011, with a maximum storage capacity of 560 gallons, uncontrolled and exhausting to the atmosphere;

Under 40 CFR 63, Subpart CCCCCC: National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities, the gasoline fuel transfer and dispensing operation, including the 560 gallon gasoline storage tank, is considered an affected facility.

(h) One (1) petroleum fuel, other than gasoline, dispensing facility, having a maximum storage capacity of less than or equal to 10,500 gallons and dispensing less than or equal to 230,000 gallons per month, including the following:

(1) One (1) No. 2 on-road fuel tank, constructed in 2005, approved for modification in 2011, with a maximum storage capacity of 1,300 gallons, uncontrolled and exhausting to the atmosphere;

(i) One (1) liquid asphalt storage tank, 64-22, horizontal, identified as Tank #4, with a maximum storage capacity of 10,000 gallons, uncontrolled and exhausting to the atmosphere;

(j) One (1) liquid asphalt storage tank, 64-22, horizontal, identified as Tank #8, approved for construction in 2011, with a maximum storage capacity of 18,500 gallons, uncontrolled and exhausting to the atmosphere;

(k) One (1) liquid asphalt storage tank, 64-22, horizontal, identified as Tank #7, approved for construction in 2011, with a maximum storage capacity of 25,000 gallons, uncontrolled and exhausting to the atmosphere;

(l) One (1) liquid asphalt storage tank, 64-22, horizontal, identified as Tank #6, approved for construction in 2011, with a maximum storage capacity of 30,000 gallons, uncontrolled and exhausting to the atmosphere;

(m) One (1) split compartment liquid asphalt storage tank, horizontal, identified as Tanks #10 and #11, constructed in 2011, with a maximum storage capacity of 5,000 gallons and 6,000 gallons, respectively, uncontrolled and exhausting to the atmosphere;

(n) One (1) electrically powered, liquid asphalt storage tank, 64-22, horizontal, identified as Tank #16, approved for construction in 2013, with a maximum storage capacity of 20,000 gallons, uncontrolled and exhausting to the atmosphere;

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

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

(q) 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, F123-28142-00025, is issued for a fixed term of ten (10) years from the issuance date of this permit, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3. Subsequent revisions, modifications, or amendments of this permit do not affect the expiration date of this permit.

(b) If IDEM, OAQ, upon receiving a timely and complete renewal permit application, fails to issue or deny the permit renewal prior to the expiration date of this permit, this existing permit shall not expire and all terms and conditions shall continue in effect, until the renewal permit has been issued or denied.

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

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

(a) the condition is modified in a subsequent permit action pursuant to Title I of the Clean Air Act; or

(b) the emission unit to which the condition pertains permanently ceases operation.

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

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

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

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

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

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

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

(a) The Permittee shall furnish to IDEM, OAQ, within a reasonable time, any information that IDEM, OAQ may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. Upon request, the Permittee shall also furnish to IDEM, OAQ copies of records required to be kept by this permit.

(b) For information furnished by the Permittee to IDEM, OAQ, the Permittee may include a claim of confidentiality in accordance with 326 IAC 17.1. When furnishing copies of requested records directly to U. S. EPA, the Permittee may assert a claim of confidentiality in accordance with 40 CFR 2, Subpart B.

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

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

(i) it contains a certification by an "authorized individual", as defined by 326 IAC 2-1.1-1(1), and

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

(b) The Permittee may use the attached Certification Form, or its equivalent, with each submittal requiring certification. One (1) certification may cover multiple forms in one (1) submittal.

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

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

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

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

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

(c) The annual compliance certification report shall include the following:

(1) The appropriate identification of each term or condition of this permit that is the basis of the certification;

(2) The compliance status;

(3) Whether compliance was continuous or intermittent;

(4) The methods used for determining the compliance status of the source, currently and over the reporting period consistent with 326 IAC 2-8-4(3); and

(5) Such other facts, as specified in Sections D of this permit, as IDEM, OAQ may require to determine the compliance status of the source.

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

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

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

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

(a) A Preventive Maintenance Plan meets the requirements of 326 IAC 1-6-3 if it includes, at a minimum:

(1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;

(2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and

(3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

The Permittee shall implement the PMPs.

(b) If required by specific condition(s) in Section D of this permit where no PMP was previously required, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMPs) no later than ninety (90) days after issuance of this permit or ninety (90) days after initial start-up, whichever is later, including the following information on each facility:

(1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;

(2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and

(3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

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

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

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

The Permittee shall implement the PMPs.

(c) A copy of the PMPs shall be submitted to IDEM, OAQ upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ may require the Permittee to revise its PMPs whenever lack of proper maintenance causes or is the primary contributor to an exceedance of any limitation on emissions. The PMPs and their submittal do not require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(d) To the extent the Permittee is required by 40 CFR Part 60/63 to have an Operation Maintenance, and Monitoring (OMM) Plan for a unit, such Plan is deemed to satisfy the PMP requirements of 326 IAC 1-6-3 for that unit.

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

(a) An emergency, as defined in 326 IAC 2-7-1(12), is not an affirmative defense for an action brought for noncompliance with a federal or state health-based emission limitation except as provided in 326 IAC 2-8-12.

(b) An emergency, as defined in 326 IAC 2-7-1(12), constitutes an affirmative defense to an action brought for noncompliance with a health-based or technology-based emission limitation if the affirmative defense of an emergency is demonstrated through properly signed, contemporaneous operating logs or other relevant evidence that describe the following:

(1) An emergency occurred and the Permittee can, to the extent possible, identify the causes of the emergency;

(2) The permitted facility was at the time being properly operated;

(3) During the period of an emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or other requirements in this permit;

(4) For each emergency lasting one (1) hour or more, the Permittee notified IDEM, OAQ, 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) 380-2305; fax: (812) 380-2304.
Southwest Regional Office phone: (812) 380-2305; fax: (812) 380-2304.

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

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

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

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

(A) A description of the emergency;

(B) Any steps taken to mitigate the emissions; and

(C) Corrective actions taken.

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

(6) The Permittee immediately took all reasonable steps to correct the emergency.

(c) In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.

(d) This emergency provision supersedes 326 IAC 1-6 (Malfunctions). This permit condition is in addition to any emergency or upset provision contained in any applicable requirement.

(e) The Permittee seeking to establish the occurrence of an emergency shall make records available upon request to ensure that failure to implement a PMP did not cause or contribute to an exceedance of any limitations on emissions. However, IDEM, OAQ may require that the Preventive Maintenance Plans required under 326 IAC 2-8-3(c)(6) be revised in response to an emergency.

(f) Failure to notify IDEM, OAQ by telephone or facsimile of an emergency lasting more than one (1) hour in accordance with (b)(4) and (5) of this condition shall constitute a violation of 326 IAC 2-8 and any other applicable rules.

(g) Operations may continue during an emergency only if the following conditions are met:

(1) If the emergency situation causes a deviation from a technology-based limit, the Permittee may continue to operate the affected emitting facilities during the emergency provided the Permittee immediately takes all reasonable steps to correct the emergency and minimize emissions.

(2) If an emergency situation causes a deviation from a health-based limit, the Permittee may not continue to operate the affected emissions facilities unless:

(A) The Permittee immediately takes all reasonable steps to correct the emergency situation and to minimize emissions; and

(B) Continued operation of the facilities is necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw material of substantial economic value.

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

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

(a) All terms and conditions of permits established prior to F123-28142-00025 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 one hundred (100) pounds per hour and the methods in 326 IAC 6-3-2(b) through (d) do not apply shall not exceed five hundred fifty-one thousandths (0.551) pounds per hour.

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

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

(a) Pursuant to 326 IAC 2-8:

(1) The potential to emit any regulated pollutant, except particulate matter (PM), from the entire source shall be limited to less than one hundred (100) tons per twelve (12) consecutive month period.

(2) The potential to emit any individual hazardous air pollutant (HAP) from the entire source shall be limited to less than ten (10) tons per twelve (12) consecutive month period; and

(3) The potential to emit any combination of HAPs from the entire source shall be limited to less than twenty-five (25) tons per twelve (12) consecutive month period.

(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 Stack Height [326 IAC 1-7]

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

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

(a) Notification requirements apply to each owner or operator. If the combined amount of regulated asbestos containing material (RACM) to be stripped, removed or disturbed is at least 260 linear feet on pipes or 160 square feet on other facility components, or at least thirty-five (35) cubic feet on all facility components, then the notification requirements of 326 IAC 14-10-3 are mandatory. All demolition projects require notification whether or not asbestos is present.

(b) The Permittee shall ensure that a written notification is sent on a form provided by the Commissioner at least ten (10) working days before asbestos stripping or removal work or before demolition begins, per 326 IAC 14-10-3, and shall update such notice as necessary, including, but not limited to the following:

(1) When the amount of affected asbestos containing material increases or decreases by at least twenty percent (20%); or

(2) If there is a change in the following:

(A) Asbestos removal or 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.10 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.11 Compliance Requirements [326 IAC 2-1.1-11]

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

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

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

Unless otherwise specified in this permit, 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.13 Instrument Specifications [326 IAC 2-1.1-11] [326 IAC 2-8-4(3)][326 IAC 2-8-5(1)]

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

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

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

C.14 Emergency Reduction Plans [326 IAC 1-5-2] [326 IAC 1-5-3]

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

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

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

C.15 Risk Management Plan [326 IAC 2-8-4] [40 CFR 68]

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

C.16 Response to Excursions or Exceedances [326 IAC 2-8-4] [326 IAC 2-8-5]

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

(a) The Permittee shall take reasonable response steps to restore operation of the emissions unit (including any control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing excess emissions.

(b) The response shall include minimizing the period of any startup, shutdown or malfunction. The response may include, but is not limited to, the following:

(1) initial inspection and evaluation;

(2) recording that operations returned or are returning to normal without operator action (such as through response by a computerized distribution control system); or

(3) any necessary follow-up actions to return operation to normal or usual manner of operation.

(c) A determination of whether the Permittee has used acceptable procedures in response to an excursion or exceedance will be based on information available, which may include, but is not limited to, the following:

(1) monitoring results;

(2) review of operation and maintenance procedures and records; and/or

(3) inspection of the control device, associated capture system, and the process.

(d) Failure to take reasonable response steps shall be considered a deviation from the permit.

(e) The Permittee shall record the reasonable response steps taken.

C.17 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-8-4][326 IAC 2-8-5]

(a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall submit a description of its response actions to IDEM, OAQ, no later than seventy-five (75) days after the date of the test.

(b) A retest to demonstrate compliance shall be performed no later than one hundred eighty (180) days after the date of the test. Should the Permittee demonstrate to IDEM, OAQ that retesting in one hundred eighty (180) days is not practicable, IDEM, OAQ may extend the retesting deadline

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

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

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

C.18 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, where applicable:

(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, where applicable:

(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.19 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.20 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: Drum, Hot-Mix Asphalt Plant

(a) One (1) drum dryer/mixer, constructed in 2005, capable of processing three hundred twenty-five (325) tons of raw material per hour per hour, processing steel slag and asbestos-free recycled asphalt shingles (RAS) in the aggregate mix, equipped with one (1) one hundred twenty (120) million British thermal units (MMBtu) per hour re-refined waste oil fired dryer burner, using natural gas, No. 2 distillate fuel oil, No. 4 distillate fuel oil, and biodiesel as backup fuels, controlling particulate emissions with one (1) jetpulse baghouse, and exhausting to one (1) stack, identified as EP1. This asphalt plant has the capability of producing warm-mix asphalt;

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

(b) Material handling, screening, and conveying operations, constructed in 2005, approved for modification in 2011, and revised in 2011, uncontrolled and exhausting to the atmosphere, and consisting of the following:

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

(A) Sand storage piles, with a maximum anticipated pile size of one and fifty hundredths (1.50) acres

(B) Gravel storage piles, with a maximum anticipated pile size of one and fifty hundredths (1.50) acres

(C) Steel slag storage piles, with a maximum anticipated pile size of one and fifty hundredths (1.50) acres

(D) Limestone storage piles, with a maximum anticipated pile size of eight (8.00) acres.

(2) Four (4) aggregate conveyors;

(3) One (1) scalping screen;

(4) Six (6) cold feed bins;

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

(c) One (1) recycled asphalt materials (RAM) processing system, constructed in 2005, modified in 2011, and approved for modification in 2013, with a maximum throughput capacity of one hundred (150) tons of RAM per hour, uncontrolled and exhausting to the atmosphere, and consisting of:

(1) One (1) intermittent, portable, non-stationary, recycled asphalt materials (RAM) crushing operation, identified as RAM Crusher, having a maximum rated capacity of 150 tons of RAM per hour, uncontrolled and exhausting to the atmosphere;

Under 40 CFR 1068.30, General Compliance Provisions for Highway, Stationary, and Nonroad Programs, this unit is considered a portable, non-stationary, nonroad engine.

(2) One (1) 210 horsepower (hp), diesel fuel-fired portable crusher, identified as RAM Lump Breaker, manufactured in 1985 and initially constructed in 1990, approved for construction in 2013, with a maximum rated capacity of 100 tons of recycled asphalt material (RAM) per hour, uncontrolled and exhausting to the atmosphere;

Under 40 CFR 63, Subpart ZZZZ (NESHAP for Stationary Reciprocating Internal Combustion Engines (RICE)), this unit is considered an affected facility.

(3) Five (5) RAM conveyors;

(4) Two (2) RAM feeder bins;

(5) Two (2) RAM screens;

(6) Recycled asphalt pavement (RAP) storage piles, with a maximum anticipated pile size of one and fifty hundredths (1.50) acres; and

(7) Asbestos-free recycled asphalt shingle (ground factory seconds and/or post consumer waste) (RAS) storage piles, with a combined maximum anticipated pile size of one and fifty hundredths (1.50) acres.

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

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

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

D.1.1 PSD Limits [326 IAC 2-2]

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

(a) The combined maximum amount of hot-mix and warm-mix asphalt produced shall not exceed 474,820 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 eight hundred fifty-eight thousandths (0.858) pounds of PM per ton of asphalt produced.

Compliance with these limitations, combined with the limits and emissions from other emission units at this source will render 326 IAC 2-7, Part 70, and 326 IAC 2-2, PSD, not applicable.

D.1.2 FESOP and PSD Limits [326 IAC 2-8-4] [326 IAC 2-2]

Pursuant to 326 IAC 2-8-4 (FESOP), the amount of steel slag used in the production of asphalt shall not exceed three hundred seventy-five thousand (375,000) tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

Compliance with this limit, combined with the potential SO2 emissions from all other emission units at this source, shall limit the source-wide total potential to emit SO2 to less than one hundred (100) tons per twelve (12) consecutive month period, and shall render 326 IAC 2-7 (Part 70 Permits) and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD) not applicable.

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

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

(a) The combined maximum amount of hot-mix and warm-mix asphalt produced shall not exceed 474,820 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(b) PM10 emissions from the dryer/mixer shall not exceed three hundred forty-five thousandths (0.345) pounds of PM10 per ton of asphalt produced.

(c) PM2.5 emissions from the dryer/mixer shall not exceed three hundred sixty-four thousandths (0.364) pounds of PM2.5 per ton of asphalt produced.

(d) SO2 emissions from the dryer/mixer shall not exceed (0.058) pounds of SO2 per ton of asphalt produced.

(e) NOx emissions from the dryer/mixer shall not exceed 0.055 pounds of NOx per ton of asphalt produced.

(f) CO emissions from the dryer/mixer shall not exceed one hundred thirty thousandths (0.130) pounds of CO per ton of asphalt produced.

Compliance with these limits, combined with the potential to emit PM10, PM2.5, SO2, NOx, 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, and CO to less than one hundred (100) tons per twelve (12) consecutive month period, each, and shall render 326 IAC 2-7 (Part 70 Permits) and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD) not applicable.

D.1.4 Fuel, Steel Slag, and HAP Limitations [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 limit the SO2, NOx, HCl, and combined HAP emissions from all emission units at this source, the Permittee shall comply with the following:

(a) Fuel and Slag Specifications

(1) The sulfur content of the No. 2 and No. 4 distillate fuel oils, each, shall not exceed 0.75% by weight;

(2) The sulfur content of the biodiesel shall not exceed 0.50% by weight;

(3) The sulfur content of the re-refined waste oil shall not exceed 1.50% by weight;

(4) The calendar-month average sulfur content of the steel slag shall not exceed 1.00% by weight with compliance determined at the end of each month.

(5) SO2 emissions from the steel slag used in the hot-mix asphalt dryer/mixer shall not exceed 0.0021 pounds of SO2 per ton of steel slag processed.

(6) The ash content of the re-refined waste oil shall not exceed 1.50% by weight;

(7) The lead content of the re-refined waste oil shall not exceed 0.060% by weight;

(8) The chlorine content of the re-refined waste oil shall not exceed 0.15% by weight; and

(9) The HCl emissions from the dryer/mixer burner shall not exceed 9.9 pounds of HCl per one thousand (1000) gallons of re-refined fuel oil burned, based on a chlorine content limit of 0.15% by weight.

(b) Single Fuel Usage Limitations:
When combusting only one type of fuel per twelve (12) consecutive month period in the dryer/mixer burner the usage of fuel shall be limited as follows:

(1) Re-refined waste oil usage shall not exceed 744,910 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month;

(2) Natural gas usage shall not exceed 709 million cubic feet per twelve (12) consecutive month period, with compliance determined at the end of each month;

(3) No. 2 distillate fuel oil usage shall not exceed 1,542,279 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month;

(4) No. 4 distillate fuel oil usage shall not exceed 1,460,024 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month; and

(5) Biodiesel usage shall not exceed 2,313,418 gallons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(c) Multiple Fuel and Steel 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 steel slag in the aggregate mix, emissions from the dryer/mixer shall be limited as follows:

(1) Nitrogen oxides (NOx) emissions shall not exceed 67.38 tons per twelve (12) consecutive month period, with compliance determined at the end of each month, and

(2) Sulfur dioxide (SO2) emissions shall not exceed 85.52 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(3) HCl emissions shall not exceed 3.69 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(d) The Permittee shall only grind and process certified asbestos-free factory second and/or post consumer waste shingles as an additive in its aggregate mix.

Compliance with these limits, combined with the potential emissions from all other emission units at this source, shall limit the source-wide total potential to emit NOx and SO2 to less than one hundred (100) tons per twelve (12) consecutive month period, each, HCl to less than ten (10) tons per twelve (12) consecutive month period, and any combination of HAPs to less than twenty-five (25) tons per twelve (12) consecutive month period, and shall render 326 IAC 2-7 (Part 70 Permits), 326 IAC 2-2 (PSD), and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP)) not applicable.

D.1.5 Sulfur Dioxide (SO_2) [326 IAC 7-1.1-1][326 IAC 7-2-1]

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

(a) The sulfur dioxide (SO2) emissions from the dryer/mixer burner shall not exceed five tenths (0.5) pounds per million Btu heat input when using distillate oil (including the No. 2 and No. 4 distillate fuel oils, and biodiesel).

(b) The sulfur dioxide (SO2) emissions from the dryer/mixer burner shall not exceed one and sixty hundredths (1.60) pounds per million Btu heat input when using residual oil and re-refined waste oil.

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

D.1.6 Particulate Emission Limitations for Manufacturing Processes [326 IAC 6-3]

Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), particulate emissions from the recycled asphalt pavement (RAP) crushing operations shall not exceed 55.44 pounds per hour each when operating at a process weight rate of 150 tons 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:

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

D.1.7 Volatile Organic Compounds (VOC) [326 IAC 8-1-6]

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

(a) The combined maximum amount of hot-mix and warm-mix asphalt produced shall not exceed 474,820 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

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

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

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

A Preventive Maintenance Plan is required for the RAP crushing, RAS grinding, material handling, screening, conveying, and material transfer points, dryer/mixer, and any/all related control device(s). 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.1.9 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11]

In order to demonstrate compliance with the Conditions D.1.1 and D.1.3, the Permittee shall perform the following:

(a) In order to demonstrate compliance with Condition D.1.1(b), the Permittee shall perform PM testing on the exhaust from the baghouse controlling the dryer/mixer, utilizing methods as approved by the Commissioner, at least once every five (5) years from the date of the most recent 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.

(b) In order to demonstrate compliance with Conditions D.1.3(b) and D.1.3(c), the Permittee shall perform PM2.5 and PM10 testing on the exhaust from the baghouse controlling the dryer/mixer, utilizing methods as approved by the Commissioner, within 180 days of publication of the new or revised condensable PM test method(s) referenced in the U. S. EPA's Final Rule for Implementation of the New Source Review (NSR) Program for Particulate Matter Less Than 2.5 Micrometers (PM2.5), signed on May 8th, 2008, or within five (5) years of issuance of this FESOP Renewal, No. 123-28142-00025, whichever is later. These tests shall be repeated at least once every five (5) years from the date of the most recent 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, each, includes filterable and condensable PM.

D.1.10 Particulate Matter (PM, PM10, and PM2.5) Control

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

D.1.11 Sulfur Dioxide (SO2) Emissions and Sulfur Content

(a) Compliance with the sulfur dioxide emissions and sulfur content limitations in Conditions D.1.4(a)(1), D.1.4(a)(2), D.1.4(a)(3), D.1.5(a), and D.1.5(b), shall be determined utilizing one of the following options. Pursuant to 326 IAC 7-2-1 (Sulfur Dioxide Reporting Requirements), compliance shall be demonstrated on a thirty (30) day calendar-month average.

(1) Pursuant to 326 IAC 3-7-4, the Permittee shall demonstrate compliance with sulfur dioxide emissions and sulfur content limitations by:

(A) Providing vendor analysis of heat content and sulfur content of fuel delivered, if accompanied by a vendor certification; or

(B) Analyzing the fuel sample to determine the sulfur content of the oil via the procedures in 40 CFR 60, Appendix A, Method 19.

(i) Fuel samples may be collected from the fuel tank immediately after the fuel tank is filled and before any fuel is combusted; and

(ii) If a partially empty fuel tank is refilled, a new sample and analysis would be required upon filling.

(2) Compliance may also be determined by conducting a stack test for sulfur dioxide emissions from the dryer/mixer 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 (a) or (b) above shall not be refuted by evidence of compliance pursuant to the other method.

(b) Compliance with the steel slag limitations established in Condition D.1.4(a)(4) shall be determined utilizing one of the following options.

(1) Providing vendor analysis of the steel slag delivered, if accompanied by a vendor certification; or

(2) Analyzing a sample of the steel slag delivery to determine the sulfur content of the steel slag, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.

(3) Compliance may also be determined by conducting a stack test for sulfur dioxide emissions from the one hundred twenty (120) million British thermal units per hour 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 above shall not be refuted by evidence of compliance pursuant to the other method.

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

(a) In order to comply with Conditions D.1.4(a)(6), the Permittee shall demonstrate that the ash content of the fuel used for the dryer/mixer burner, and all other fuel combustion equipment, does not exceed 1.50% by weight, when combusting re-refined waste oil, by providing a vendor analysis of fuel delivered accompanied by a vendor certification.

(b) In order to comply with Conditions D.1.4(a)(7), the Permittee shall demonstrate that the lead content of the fuel used in the dryer/mixer burner, and all other fuel combustion equipment, does not exceed 0.060% by weight, when combusting re-refined waste oil, by providing a vendor analysis of fuel delivered accompanied by a vendor certification.

(c) In order to comply with Conditions D.1.4(a)(8) and D.1.4(a)(9), the Permittee shall demonstrate that the chlorine content of the fuel used in the dryer/mixer burner, and all other fuel combustion equipment, does not exceed 0.15% by weight, when combusting re-refined waste oil, by providing a vendor analysis of fuel delivered accompanied by a vendor certification.

D.1.13 Multiple Fuel and Steel Slag Usage

In order to comply with Condition D.1.4(c) when combusting more than one fuel per twelve (12) consecutive month period in the dryer/mixer burner, in conjunction with the use of steel slag in the aggregate mix, the Permittee shall limit fuel usage in the dryer/mixer burner according to the following formulas:

(a) Sulfur dioxide emission calculation

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

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 distillate fuel oil used in the last 12 months with less than or equal to 0.75% sulfur content
F = gallons of No. 4 distillate fuel oil used in the last 12 months with less than or equal to 0.75% sulfur
B = gallons of biodiesel used in last 12 months with less than or equal to 0.5% sulfur
W = gallons of re-refined waste oil used in last 12 months with less than or equal to 1.50% sulfur
L = tons of steel slag used in last twelve (12) months
E_G = 0.60 lb/million cubic feet of natural gas
E_O = 106.5 pounds/1000 gallons of No. 2 distillate fuel oil
E_F = 112.5 pounds/1000 gallons of No. 4 distillate fuel oil
E_B = 71 pounds/1000 gallons of biodiesel
E_W = 220.5 lb/1000 gallons of re-refined waste oil
E_L = 0.0021 pounds per ton of steel slag processed.

(b) Nitrogen oxide emission calculation

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

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 distillate fuel oil used in the last 12 months
F = gallons of No. 4 distillate fuel oil used in the last 12 months

B = gallons of biodiesel used in the last 12 months
W = gallons of re-refined waste oil used in the last 12 months
E_G = 190 lb/million cubic feet of natural gas
E_O = 24 lb/1000 gallons of No. 2 distillate fuel oil
E_F = 47 lb/1000 gallons of No. 4 distillate fuel oil
E_B = 26.4 lb/1000 gallons of biodiesel
E_W = 19 lb/1000 gallons of re-refined waste oil

(c) Hydrogen chloride (HCL) emission calculation

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

where:
HCl = tons of hydrogen chloride emissions for a 12-month consecutive period
W = gallons of waste oil used in the last 12 months.
E_W = 9.9 lbs/1000 gallons of waste oil.

D.1.14 Shingle Asbestos Content

Pursuant to 326 IAC 2-8-4, compliance with Condition D.1.4(d) shall be determined utilizing one or more of the following options:

(a) Providing shingle supplier certification that the factory second and/or post consumer waste shingles do not contain asbestos; or

(b) Analyzing a sample of the factory second and/or post consumer waste shingles delivery to determine the asbestos content of the factory second 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.1.15 Visible Emissions Notations

(a) Visible emission notations of the grinding/crushing, material handling, screens, conveyors, material transfer points, and dryer/ mixer stack (EP1) 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. Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. Failure to take response steps shall be considered a deviation from this permit.

D.1.16 Baghouse Parametric Monitoring [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

(a) The Permittee shall record the pressure drop across the baghouse used in conjunction with the dryer/mixer at least once per day when the dryer/mixer is in operation. When, for any one reading, the pressure drop across the baghouse is outside of the normal range, the Permittee shall take a reasonable response. The normal range for this unit is a pressure drop between five tenths (0.5) 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.

(b) 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 at least once every six (6) months.

D.1.17 Broken or Failed Bag Detection

In the event that bag failure has been observed:

(a) For a single compartment baghouse controlling emissions from a process operated continuously, a failed unit and the associated process shall be shut down immediately until the failed unit has been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

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

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

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

D.1.18 Record Keeping Requirements [326 IAC 2-8-4][326 IAC 2-2][326 IAC 2-3][326 IAC 7-1.1-2] [326 IAC 7-2-1]

(a) To document the compliance status with the asphalt production limit contained in Conditions D.1.1(a), D.1.3(a) and D.1.6(a), the Permittee shall maintain records of the amount of asphalt produced per month. Records necessary to demonstrate compliance shall be available within thirty (30) days of the end of each compliance period.

(b) To document the compliance status with the fuel limitations contained in Conditions D.1.4, and D.1.5, the Permittee shall maintain records in accordance with (1) through (7) below. Records maintained for (1) through (7) shall be taken daily and shall be complete and sufficient to establish compliance with the SO2, NOx, HCl, and combined HAPs emission limits established in Conditions D.1.4 and D.1.5. For the annual fuel limits, the compliance determination period is the most recent twelve (12) consecutive month period. For the sulfur and HCl content limits, the compliance determination period is each calendar month.

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

(2) Actual fuel usage, sulfur content, heat content and equivalent sulfur dioxide and nitrogen oxides emission rates for each fuel used at the source per month;

(3) Actual re-refined waste oil usage, chlorine content in weight percent (wt%), ash content in weight percent (wt%), lead content in weight percent (wt%), and equivalent hydrogen chloride (HCl) emission rate per month;

(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

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

(5) Fuel supplier certifications;

(6) The name of the fuel supplier; and

(7) A statement from the fuel supplier that certifies the sulfur content of No. 2 distillate fuel oil, No. 4 distillate fuel oil, biodiesel, and re-refined waste oil, and the chlorine, ash, and lead content of the re-refined waste oil.

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

(c) To document compliance status with the steel slag limitations contained in Conditions D.1.4(a)(4) and D.1.4(a)(5), the Permittee shall maintain monthly records of the information listed in items (1) through (4) below.

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

(2) Actual steel slag usage, calendar-month average sulfur content and equivalent sulfur dioxide emission rates for all steel slag used at the source since the last compliance determination period;

(3) A certification, signed by the owner or operator, that the records of the slag supplier certifications represent all of the steel slag used during the period; and

(4) If the slag supplier certification is used to demonstrate compliance the following, as a minimum, shall be maintained:

(A) Slag supplier certifications;

(B) The name of the slag supplier; and

(C) A statement from the slag supplier that certifies the sulfur content of the steel slag.

Records that may be used to document the information included in (1) through (4) may include delivery tickets, manufacturer’s data, material safety data sheets (MSDS), and other documents necessary to verify the type and amount used.

(d) To document the compliance status with the multiple fuel and steel slag usage limitations contained in Conditions D.1.4(c) and D.1.13 when combusting more than one fuel per twelve (12) consecutive month period in the dryer/mixer burner, in conjunction with the use of steel slag in the aggregate mix, the Permittee shall maintain records of actual fuel usage, actual slag usage, and equivalent nitrogen oxides, sulfur dioxide, and hydrogen chloride emission rates for each fuel, and the slag, used at the source per month.

(e) To document the compliance status with the Visible Emissions requirements contained in Condition D.1.15, the Permittee shall maintain daily records of the visible emission notations from each of the conveyors, screens, material transfer points, and dryer/mixer stack (EP1) exhaust. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g., the plant did not operate that day).

(f) To document the compliance with the monitoring requirements contained in Condition D.1.16, the Permittee shall maintain daily records of the pressure drop across the baghouse controlling the dryer/mixer. The Permittee shall include in its daily record when a pressure drop reading is not taken and the reason for the lack of a pressure drop reading, (e.g., the dryer/mixer did not operate that day).

(g) 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

(h) 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.

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

D.1.19 Reporting Requirements

A quarterly summary of the information to document the compliance status with Conditions D.1.1(a), D.1.2, D.1.3(a), D.1.4(b), D.1.4(c), D.1.7(a) and D.1.13, 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 Requirements 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 an “authorized individual” as defined by 326 IAC 2-1.1-1(1).

SECTION D.2 FACILITY CONDITIONS

Emissions Unit Description: Cold-mix Asphalt Production and Storage

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

(1) cold-mix (stockpile mix) asphalt storage piles;

(2) One (1) liquid asphalt storage tank, 64-22, horizontal, identified as Tank #9, constructed in 2005, approved for modification in 2011, with a maximum storage capacity of 17,500 gallons, uncontrolled and exhausting to the atmosphere; and

(3) One (1) emulsified, horizontal split, constructed in 2005, approved for modification in 2011, with a maximum storage capacity of 11,000 gallons, uncontrolled and exhausting to the atmosphere.

(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 2-8-4][326 IAC 2-2]

Pursuant to 326 IAC 2-8-4, the VOC emissions from the use of liquid binders, containing VOC solvents as diluents, in the cold-mix asphalt manufacturing operations and storage piles shall not exceed sixty-eight and eighty-nine hundredths (68.89) tons per twelve (12) consecutive month period, with compliance determined at the end of each month. This shall be achieved by limiting the total VOC solvent usage in of any one of the selected binders as follows:

When more than one binder is used, the formula in subsection (f) must be applied so that the total VOC emissions do not sixty-eight and eighty-nine hundredths (68.89) tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(a) Cut back asphalt rapid cure, containing a maximum of twenty-five and three tenths percent (25.3%) of the liquid binder by weight of VOC solvent and ninety-five percent (95%) by weight of VOC solvent evaporating.

Cutback asphalt rapid cure liquid binder usage shall not exceed seventy-two and fifty-one hundredths (72.51) tons of VOC solvent per twelve (12) consecutive month period, with compliance determined at the end of each month.

(b) Cut back asphalt medium cure, containing a maximum of twenty-eight and six tenths percent (28.6%) of the liquid binder by weight of VOC solvent and seventy percent (70%) by weight of VOC solvent evaporating.

Cutback asphalt medium cure liquid binder usage shall not exceed ninety-eight and forty-one hundredths (98.41) tons of VOC solvent per twelve (12) consecutive month period, with compliance determined at the end of each month.

(c) Cut back asphalt slow cure, containing a maximum of twenty percent (20%) of the liquid binder by weight of VOC solvent and twenty-five percent (25%) by weight of VOC solvent evaporating.

Cutback asphalt slow cure liquid binder usage shall not exceed two hundred seventy-five and fifty-six hundredths (275.56) tons of VOC solvent per twelve (12) consecutive month period, with compliance determined at the end of each month.

(d) Emulsified asphalt with solvent, containing a maximum of fifteen percent (15%) of liquid binder by weight of VOC solvent and forty-six and four tenths percent (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

Emulsified asphalt with solvent liquid binder usage shall not exceed one hundred and forty-eight and forty-seven hundredths (148.47) tons of VOC solvent per twelve (12) consecutive month period, with compliance determined at the end of each month.

(e) Other asphalt with solvent binder, containing a maximum twenty-five and nine tenths percent (25.9%) of the liquid binder of VOC solvent and two and five tenths percent (2.5%) by weight of the VOC solvent evaporating.

Other asphalt with solvent liquid binder shall not exceed two thousand seven hundred fifty-five and fifty-six hundredths (2,755.56) tons of VOC solvent per twelve (12) consecutive month period, with compliance determined at the end of each month.

(f) 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.

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

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

Compliance with these limits, combined with the VOC emissions from other units at this source, will limit source-wide VOC emissions to less than one hundred (100) tons per year, and render 326 IAC 2-7 (Part 70 Permit Program) and 326 IAC 2-2 (PSD), not applicable.

D.2.2 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.

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

D.2.3 Record Keeping Requirements

To document the compliance status with the VOC limitations contained in Condition D.2.1, the Permittee shall maintain records in accordance with (a) through (d) below. Records maintained for (a) through (d) shall be taken monthly and shall be complete and sufficient to establish compliance with the VOC usage limits and/or the VOC emission limits established in Condition D.2.1.

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

(b) Emulsified asphalt binder usage per month since the last compliance determination period;

(c) VOC solvent content by weight of the emulsified asphalt binder used each month; and

(d) Amount of VOC solvent used in the production of cold-mix asphalt, and the amount of VOC emitted each month.

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.2.1 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 Requirements 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 an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

SECTION D.3 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description: Insignificant Activities

(a) One (1) liquid asphalt cement hot oil heating system, constructed in 2005, and consisting of the following:

(1) One (1) natural gas fired hot oil heater, with a maximum rated heat input capacity of two and one hundred fifteen thousandths (2.115) MMBtu/hr, using No. 2 distillate fuel oil, No. 4 distillate fuel oil**,** biodiesel, and re-refined waste oil as backup fuels, uncontrolled and exhausting to one (1) stack, identified as EP2;

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

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

D.3.1 Particulate Emissions [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 per MMBtu heat input.

SECTION D.4 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description: Paved & Unpaved Roads

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

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

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

D.4.1 PM and PM10 Emissions [326 IAC 2-8-4] [326 IAC 6-5]

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

SECTION E.1 NSPS REQUIREMENTS

Emissions Unit Description: Hot-Mix Asphalt Plant

(a) One (1) drum dryer/mixer, constructed in 2005, capable of processing three hundred twenty-five (325) tons of raw material per hour per hour, processing steel slag and asbestos-free recycled asphalt shingles (RAS) in the aggregate mix, equipped with one (1) one hundred twenty (120) million British thermal units (MMBtu) per hour re-refined waste oil fired dryer burner, using natural gas, No. 2 distillate fuel oil, No. 4 distillate fuel oil, and biodiesel as backup fuels, controlling particulate emissions with one (1) jetpulse baghouse, and exhausting to one (1) stack, identified as EP1. This asphalt plant has the capability of producing warm-mix asphalt;

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

(b) Material handling, screening, and conveying operations, constructed in 2005, approved for modification in 2011, uncontrolled and exhausting to the atmosphere, and consisting of the following:

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

(A) Sand storage piles, with a maximum anticipated pile size of one and fifty hundredths (1.50) acres

(B) Gravel storage piles, with a maximum anticipated pile size of one and fifty hundredths (1.50) acres

(C) Steel slag storage piles, with a maximum anticipated pile size of one and fifty hundredths (1.50) acres

(D) Limestone storage piles, with a maximum anticipated pile size of eight (8.00) acres.

(2) Four (4) aggregate conveyors;

(3) One (1) scalping screen;

(4) Six (6) cold feed bins;

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

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

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

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

Pursuant to 40 CFR 60.90(a), the affected facility to which the provisions of this subpart apply is each hot mix asphalt facility, as defined in § 60.91(a), that commences construction or modification after June 11, 1973. For the purpose of this subpart, a hot mix asphalt facility is comprised only of any combination of the following: dryers; systems for screening, handling, storing, and weighing hot aggregate; systems for loading, transferring, and storing mineral filler, systems for mixing hot mix asphalt; and the loading, transfer, and storage systems associated with emission control systems.

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

(1) 40 CFR 60.90;

(2) 40 CFR 60.91;

(3) 40 CFR 60.92; and

(4) 40 CFR 60.93.

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

SECTION E.2 NSPS REQUIREMENTS

Emissions Unit Description: Recycled Asphalt Materials (RAM) Processing System

(c) One (1) recycled asphalt materials (RAM) processing system, constructed in 2005, modified in 2011, and approved for modification in 2013, with a maximum throughput capacity of one hundred (150) tons of RAM per hour, uncontrolled and exhausting to the atmosphere, and consisting of:

(1) One (1) intermittent, portable, non-stationary, recycled asphalt materials (RAM) crushing operation, identified as RAM Crusher, having a maximum rated capacity of 150 tons of RAM per hour, uncontrolled and exhausting to the atmosphere;

Under 40 CFR 1068.30, General Compliance Provisions for Highway, Stationary, and Nonroad Programs, this unit is considered a portable, non-stationary, nonroad engine.

(2) One (1) 210 horsepower (hp), diesel fuel-fired portable crusher, identified as RAM Lump Breaker, manufactured in 1985 and initially constructed in 1990, approved for construction in 2013, with a maximum rated capacity of 100 tons of recycled asphalt material (RAM) per hour, uncontrolled and exhausting to the atmosphere;

Under 40 CFR 63, Subpart ZZZZ (NESHAP for Stationary Reciprocating Internal Combustion Engines (RICE)), this unit is considered an affected facility.

(3) Five (5) RAM conveyors;

(4) Two (2) RAM feeder bins;

(5) Two (2) RAM screens;

(6) Recycled asphalt pavement (RAP) storage piles, with a maximum anticipated pile size of one and fifty hundredths (1.50) acres; and

(7) Asbestos-free recycled asphalt shingle (ground factory seconds and/or post consumer waste) (RAS) storage piles, with a combined maximum anticipated pile size of one and fifty hundredths (1.50) acres.

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

The Permittee shall comply with the following provisions of 40 CFR Part 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 Part 60, Subpart OOO, for the recycled asphalt materials (RAM) processing system, including the RAM Crusher and the RAM Lump Breaker:

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

E.2.3 Testing Requirements [40 CFR Part 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, not later than five (5) years from the most recent valid compliance demonstration, utilizing methods approved by the Commissioner. This test shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. 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.

SECTION E.3 NESHAP REQUIREMENTS

Emissions Unit Description [326 IAC 2-8-4(10)]: RAM Lump Breaker

(c) One (1) recycled asphalt materials (RAM) processing system, constructed in 2005, modified in 2011, and approved for modification in 2013, with a maximum throughput capacity of one hundred (150) tons of RAM per hour, uncontrolled and exhausting to the atmosphere, and consisting of:

(2) One (1) 210 horsepower (hp), diesel fuel-fired portable crusher, identified as RAM Lump Breaker, manufactured in 1985 and initially constructed in 1990, approved for construction in 2013, with a maximum rated capacity of 100 tons of recycled asphalt material (RAM) per hour, uncontrolled and exhausting to the atmosphere;

Under 40 CFR 63, Subpart ZZZZ (NESHAP for Stationary Reciprocating Internal Combustion Engines (RICE)), this unit 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.)

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

E.3.1 General Provisions Relating to National Emission Standards for Hazardous Air Pollutants under 40 CFR Part 63 [326 IAC 20-1] [40 CFR Part 63, Subpart A]

(a) Pursuant to 40 CFR 63.6665, the Permittee shall comply with the provisions of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated as 326 IAC 20-1-1, apply to the souce, as specified in Table 8 of 40 CFR Part 63, Subpart ZZZZ.

(b) Pursuant to 40 CFR 63.12, 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.3.2 National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Stationary Reciprocating Internal Combustion Engines (RICE) [40 CFR 63, Subpart ZZZZ] [326 IAC 20-82]

Pursuant to 40 CFR Part 60, Subpart ZZZZ, the Permittee shall comply with the provisions of 40 CFR Part 60, Subpart ZZZZ (4Z) (included as Attachment D), which are incorporated by reference as 326 IAC 20-82, for the 210 horsepower (hp), diesel fuel-fired, portable crusher, identified as RAM Lump Breaker, with a compliance date of May 3, 2013, or upon start up if later, as follows:

(a)	40 CFR 63.6580;	(k)	40 CFR 63.6645(a)(5);
(b)	40 CFR 63.6585;	(l)	40 CFR 63.6655;
(c)	40 CFR 63.6590(a)(1)(iii) and (iv);	(m)	40 CFR 63.6660;
(d)	40 CFR 63.6595(a)(1), (b), (c);	(n)	40 CFR 63.6665;
(e)	40 CFR 63.6603(a);	(o)	40 CFR 63.6670;
(f)	40 CFR 63.6605;	(p)	40 CFR 63.6675;
(g)	40 CFR 63.6625(e)(4), (h), (i);	(q)	Table 2d (item 1);
(h)	40 CFR 63.6635;	(r)	Table (item 9); and
(i)	40 CFR 63.6640(a), (b), and (e);	(s)	Table 8.

SECTION E.4 NSPS & NESHAP REQUIREMENTS

Emissions Unit Description [326 IAC 2-8-4(10)]: RAM Crusher

(c) One (1) recycled asphalt materials (RAM) processing system, constructed in 2005, modified in 2011, and approved for modification in 2013, with a maximum throughput capacity of one hundred (150) tons of RAM per hour, uncontrolled and exhausting to the atmosphere, and consisting of:

(1) One (1) intermittent, portable, non-stationary, recycled asphalt materials (RAM) crushing operation, identified as RAM Crusher, having a maximum rated capacity of 150 tons of RAM per hour, uncontrolled and exhausting to the atmosphere;

Under 40 CFR 1068.30, General Compliance Provisions for Highway, Stationary, and Nonroad Programs, this unit is considered a portable, non-stationary, nonroad engine.

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

E.4.1 Nonroad Engines [326 IAC 12][40 CFR 60, Subpart IIII][326 IAC 20-82][40 CFR 63, Subpart ZZZZ] [40 CFR 1068.30]

In order to render the requirements of the Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (40 CFR Part 60, Subpart IIII, which are incorporated by reference as 326 IAC 12, and the National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (40 CFR 63, Subpart ZZZZ), which are incorporated by reference as 326 IAC 20-82, not applicable, and to ensure the portable, non-stationary, RAM crusher is a nonroad engine, as defined at 40 CFR 1068.30 (excluding paragraph (2)(ii) of that definition), the Permittee shall comply with the following:

(a) The portable, non-stationary, RAM crusher shall remain at a location for a period not to exceed twelve (12) consecutive months.

(b) Any portable, non-stationary, RAM crusher that replaces a portable, non-stationary, RAM crusher at a location and that is intended to perform the same or similar function as the portable, non-stationary, RAM crusher replaced will be included in calculating the consecutive time period.

(c) For the purposes of this condition, and pursuant to 40 CFR 1069.30 Nonroad Engine (2)(iii), a location is any single site at a building, structure, facility, or installation.

Compliance with these limits shall render the requirements of the Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (40 CFR Part 60, Subpart IIII) and the National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (40 CFR 63, Subpart ZZZZ) not applicable.

E.4.2 Record Keeping Requirements

(a) To document the compliance status with Condition E.4.1(a), the Permittee shall maintain records of the dates of installation and removal of the portable, non-stationary, RAM crusher as the unit is installed and removed.

(b) To document the compliance status with Condition E.4.1(b), the Permittee shall maintain records of the make, model, horsepower rating, manufacture date, and model year of each portable, non-stationary, RAM crusher brought onto the site.

(c) Section C - General Record Keeping Requirements contains the Permittee's obligation with regard to the records required to be maintained by this condition.

SECTION E.5 NESHAP REQUIREMENTS

Emissions Unit Description: Gasoline Dispensing Facilities (GDF)

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

(1) One (1) gasoline storage tank, constructed in 2005, approved for modification in 2011, with a maximum storage capacity of 560 gallons, uncontrolled and exhausting to the atmosphere;

Under 40 CFR 63, Subpart CCCCCC: National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities, the gasoline fuel transfer and dispensing operation, including the 560 gallon gasoline storage tank, is considered an affected facility.

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

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

E.5.1 National Emission Standards for Hazardous Air Pollutants (NESHAPs): Area Source Standards for Source Category: Gasoline Dispensing Facilities [40 CFR 63, Subpart CCCCCC] [326 IAC 20]

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

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

(1) 40 CFR 63.11504(a)(1)(iii), (a)(2), (a)(3);

(2) 40 CFR 63.11505(a)(1), (b), (e);

(3) 40 CFR 63.11506(a);

(4) 40 CFR 63.11507(g);

(5) 40 CFR 63.11508(a), (b), (d)(1), (d)(2), (d)(8);

(6) 40 CFR 63.11509(a), (b), (c)(6), (c)(7), (d), (e), (f);

(7) 40 CFR 63.11510;

(8) 40 CFR 63.11511; and

(9) 40 CFR 63.11512.

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

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP) CERTIFICATION

Source Name: J.H. Rudolph & Company, Inc. - St. Croix Plant
Source Address: 12050 Optical Road, English, Indiana 47118
FESOP Permit No.: F123-28142-00025

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: J.H. Rudolph & Company, Inc. - St. Croix Plant
Source Address: 12050 Optical Road, English, Indiana 47118
FESOP Permit No.: F123-28142-00025

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

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

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

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

If any of the following are not applicable, mark N/A **Page 2 of 2**

Date/Time Emergency started:
Date/Time Emergency was corrected:
Was the facility being properly operated at the time of the emergency? Y N Describe:
Type of Pollutants Emitted: TSP, PM-10, SO_2, VOC, NO_X, CO, Pb, other:
Estimated amount of pollutant(s) emitted during emergency:
Describe the steps taken to mitigate the problem:
Describe the corrective actions/response steps taken:
Describe the measures taken to minimize emissions:
If applicable, describe the reasons why continued operation of the facilities are necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw materials of substantial economic value:

Form Completed by: _____

Title / Position: _____

Date: _____

Phone: _____

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

FESOP Quarterly Report

Source Name: J.H. Rudolph & Company, Inc. - St. Croix Plant
Source Address: 12050 Optical Road, English, Indiana 47118
FESOP Permit No.: F123-28142-00025
Facility: Dryer/mixer burner

Parameter: Combined Hot-Mix and Warm-mix Asphalt Production

Limit: The combined maximum annual hot-mix and warm-mix asphalt production shall not exceed 474,820 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

QUARTER: _____ YEAR: _____

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

☐ No deviation occurred in this quarter.

☐ Deviation/s occurred in this quarter.
Deviation has been reported on:_____

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

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

FESOP QUARTERLY REPORT

Page 1 of 2

Source Name: J.H. Rudolph & Company, Inc. - St. Croix Plant
Source Address: 12050 Optical Road, English, Indiana 47118
FESOP Permit No.: F123 28142 00025
Facility: Dryer/Mixer Burner
Parameter: **Fuel & Steel Slag Usage / SO2, NOx, & HCl emissions**

Emission Limits: *Sulfur dioxide (SO_2)* emissions shall not exceed 82.52 tons per twelve (12) consecutive month period, with compliance determined at the end of each month, using the equation found in Condition D.1.13(a).

Nitrogen Oxides (NOx) emissions shall not exceed 67.38 tons per twelve (12) consecutive month period, with compliance determined at the end of each month, using the equation found in Condition D.1.13(b).

Hydrogen Chloride (HCL) emissions shall not exceed 3.69 tons per twelve (12) consecutive month period, with compliance determined at the end of each month, using the equation found in Condition D.1.13(c).

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

Fuel/Slag Type (Units)	Fuel/Slag Usage Limit (per 12 consecutive month period)
Re-refined Waste Oil (gallons)	744,910
Natural Gas (million cubic feet)	709
No. 2 Fuel Oil (gallons)	1,542,279
No. 4 Fuel Oil (gallons)	1,460,024
Biodiesel (gallons)	2,313,418
Steel Slag (tons)	375,000

FESOP Quarterly Report - Fuel & Steel Slag Usage / SO2, NOx, CO2e, & HCL emissions

QUARTER:_____ YEAR:_____

Month	Fuel Types (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)			G				
	No. 2 distillate Fuel Oil ≤ 0.75 wt% sulfur (gallons)			O				
	No. 4 distillate Fuel Oil ≤ 0.75 wt% sulfur (gallons)			R				
	Biodiesel ≤ 0.50 wt% sulfur (gallons)			B				
	Re-refined Waste Oil ≤ 1.50 wt% sulfur (gallons)			U				
	Steel slag ≤ 1.00% wt% sulfur (tons)			L				
Month 2	Natural Gas (million cubic feet)			G				
	No. 2 distillate Fuel Oil ≤ 0.75 wt% sulfur (gallons)			O				
	No. 4 distillate Fuel Oil ≤ 0.75 wt% sulfur (gallons)			R				
	Biodiesel ≤ 0.50 wt% sulfur (gallons)			B				
	Re-refined Waste Oil ≤ 1.50 wt% sulfur (gallons)			U				
	Steel slag ≤ 1.00% wt% sulfur (tons)			L				
Month 3	Natural Gas (million cubic feet)			G				
	No. 2 distillate Fuel Oil ≤ 0.75 wt% sulfur (gallons)			O				
	No. 4 distillate Fuel Oil ≤ 0.75 wt% sulfur (gallons)			R				
	Biodiesel ≤ 0.50 wt% sulfur (gallons)			B				
	Re-refined Waste Oil ≤ 1.50 wt% sulfur (gallons)			U				
	Steel slag ≤ 1.00% wt% sulfur (tons)			L				

☐ 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:_____

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE BRANCH

FESOP Quarterly Report

Source Name: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
FESOP Permit No.: F123-28142-00025
Facility: Cold-mix (stockpile mix) asphalt manufacturing operations and storage piles

Parameter: Single Liquid Binder Solvent Usage / VOC Emissions

Limit: Volatile Organic Compound (VOC) emissions from the use of liquid binders, containing VOC solvents as diluents, in the cold-mix asphalt manufacturing operations and storage piles shall not exceed sixty-eight and eighty-nine hundredths (68.89) tons per twelve (12) consecutive month period. When using only one type of binder, the total VOC solvent usage shall be limited as follows:

Type of Binder	Binder VOC Limits (tons per 12 consecutive month period)
Cutback Asphalt Rapid Cure	72.51
Cutback Asphalt Medium Cure	98.41
Cutback Asphalt Slow Cure	275.56
Emulsified Asphalt	148.47
Other Asphalt	2,755.56

QUARTER: _____ YEAR: _____

The following liquid binder solvent was the only liquid binder solvent used over the previous 12 month period: _____ _____ Limit applicable:_____

(use of more than one binder requires the use of the "Multiple Liquid Binder Solvents" report form)

Month	Column 1	Column 2	Column 1 + Column 2
	Liquid Binder Usage This Month (tons)	Liquid Binder Usage Previous 11 Months (tons)	Liquid Binder Usage 12 Month Total (tons)
Month 1			
Month 2			
Month 3			

☐ 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: _____

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE BRANCH

FESOP Quarterly Report

Page 1 of 2

Source Name: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
FESOP Permit No.: F123-28142-00025
Facility: Cold-mix (stockpile mix) asphalt manufacturing operations and storage piles

Parameter: Multiple Liquid Binder Solvent Usage / VOC Emissions

Limit: Volatile Organic Compound (VOC) emissions from the use of liquid binders, containing VOC solvents as diluents, in the cold-mix asphalt manufacturing operations and storage piles shall not exceed sixty-eight and eighty-nine hundredths (68.89) tons per twelve (12) consecutive month period. When using more than one type of binder, the Permittee shall limit VOC solvent usage as follows:

Type of Binder	Binder VOC Limits (tons per 12 consecutive month period)
Cutback Asphalt Rapid Cure	72.51
Cutback Asphalt Medium Cure	98.41
Cutback Asphalt Slow Cure	275.56
Emulsified Asphalt	148.47
Other Asphalt	2,755.56

The tons of VOC emitted per each type of binder, shall be determined using the following equation:

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

Where:

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

Multiple Liquid Binder Solvent Usage **FESOP Quarterly Report** **Page 2 of 2**

QUARTER: _____ YEAR: _____

Month	Fuel Types (units)	Column 1	Column 2	Column 1 + Column 2	Equation Results
		Usage This Month	Usage Previous 11 Months	Usage 12 Month Total	VOC Emissions (tons per 12 months)
Month 1	Cutback asphalt rapid cure liquid binder (million cubic feet)				
	Cutback asphalt medium cure liquid binder (gallons)				
	Cutback asphalt slow cure liquid binder (gallons)				
	Emulsified asphalt with solvent liquid binder				
	Other asphalt with solvent liquid binder				
Month 2	Cutback asphalt rapid cure liquid binder (million cubic feet)				
	Cutback asphalt medium cure liquid binder (gallons)				
	Cutback asphalt slow cure liquid binder (gallons)				
	Emulsified asphalt with solvent liquid binder				
	Other asphalt with solvent liquid binder				
Month 3	Cutback asphalt rapid cure liquid binder (million cubic feet)				
	Cutback asphalt medium cure liquid binder (gallons)				
	Cutback asphalt slow cure liquid binder (gallons)				
	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: _____

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: J.H. Rudolph & Company, Inc. - St. Croix Plant
Source Address: 12050 Optical Road, English, Indiana 47118
FESOP Permit No.: F123-28142-00025

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

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

□ NO DEVIATIONS OCCURRED THIS REPORTING PERIOD.

□ THE FOLLOWING DEVIATIONS OCCURRED THIS REPORTING PERIOD

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

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

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

Form Completed by:_____

Title / Position:_____

Date:_____

Phone: _____

Federally Enforceable State Operating Permit (FESOP) Renewal

OFFICE OF AIR QUALITY

J.H. Rudolph & Company, Inc.
12050 Optical Road,
English, Indiana 47118

Attachment A

HOT-MIX ASPHALT PLANT

FUGITIVE DUST CONTROL PLAN

F123-28142-00025

HOT-MIX ASPHALT PLANT SITE FUGITIVE DUST CONTROL PLAN (FDP)

(a) Fugitive particulate matter emissions from paved roads, unpaved roads, and parking lots shall be controlled by one or more of the following methods:

(1) Application of water and/or water-dust control material solutions;

(2) Sweeping between watering;

(3) Limiting vehicular speed to 10 miles per hour.

(b) Fugitive particulate matter emissions from conveying/handling operations shall be controlled by minimizing all drop distances.

(c) Fugitive particulate matter emissions from storage piles shall be controlled by one of the following methods:

(1) minimizing drop distances; or

(2) maintaining moisture content of materials above 1.5%.

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

J.H. Rudolph & Company, Inc.
12050 Optical Road,
English, Indiana 47118

Attachment B

Title 40: Protection of Environment

PART 60—NEW SOURCE PERFORMANCE STANDARDS

Subpart I - STANDARDS OF PERFORMANCE FOR HOT MIX ASPHALT FACILITIES

F123-28142-00025

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 (FESOP) Renewal
OFFICE OF AIR QUALITY

J.H. Rudolph & Company, Inc.
12050 Optical Road,
English, Indiana 47118

Attachment C

Title 40: Protection of Environment

PART 60—NEW SOURCE PERFORMANCE STANDARDS

Subpart OOO - STANDARDS OF PERFORMANCE FOR NONMETALLIC MINERAL PROCESSING PLANTS

F123-28142-00025

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) Fluorospar.

(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 expediently 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 H_2 O (0.05 in. H_2 O)] 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.

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

Where:

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

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

A_e = 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 OOO of Part 60—Exceptions to Applicability of Subpart A to Subpart OOO

Subpart A reference	Applies to subpart OOO	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.

Table 2 to Subpart OOO of Part 60—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).

[a] Exceptions to the PM limit apply for individual enclosed storage bins and other equipment. See § 60.672(d) through (f).

[b] The stack opacity limit and associated opacity testing requirements do not apply for affected facilities using wet scrubbers.

Table 3 to Subpart OOO of Part 60—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 OOO—Standards Of Performance For Nonmetallic Mineral Processing Plants weblink:
http://www.ecfr.gov/cgi-bin/text-idx?c=ecfr&SID=bac8d1ec3f285923b18b2aa9cd418ba2&rgn=div6&view=text&node=40:7.0.1.1.1.81&idno=40

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

J.H. Rudolph & Company, Inc.
12050 Optical Road,
English, Indiana 47118

Attachment D

Title 40: Protection of Environment

PART 63—NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR SOURCE CATEGORIES

Subpart ZZZZ - NESHAPs for Stationary Reciprocating Internal Combustion Engines

F123-28142-00025

Subpart ZZZZ—National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

SOURCE: 69 FR 33506, June 15, 2004, unless otherwise noted.

What This Subpart Covers

§ 63.6580 What is the purpose of subpart ZZZZ?

Subpart ZZZZ establishes national emission limitations and operating limitations for hazardous air pollutants (HAP) emitted from stationary reciprocating internal combustion engines (RICE) located at major and area sources of HAP emissions. This subpart also establishes requirements to demonstrate initial and continuous compliance with the emission limitations and operating limitations.

[73 FR 3603, Jan. 18, 2008]

§ 63.6585 Am I subject to this subpart?

You are subject to this subpart if you own or operate a stationary RICE at a major or area source of HAP emissions, except if the stationary RICE is being tested at a stationary RICE test cell/stand.

(a) A stationary RICE is any internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work and which is not mobile. Stationary RICE differ from mobile RICE in that a stationary RICE is not a non-road engine as defined at 40 CFR 1068.30, and is not used to propel a motor vehicle or a vehicle used solely for competition.

(b) A major source of HAP emissions is a plant site that emits or has the potential to emit any single HAP at a rate of 10 tons (9.07 megagrams) or more per year or any combination of HAP at a rate of 25 tons (22.68 megagrams) or more per year, except that for oil and gas production facilities, a major source of HAP emissions is determined for each surface site.

(c) An area source of HAP emissions is a source that is not a major source.

(d) If you are an owner or operator of an area source subject to this subpart, your status as an entity subject to a standard or other requirements under this subpart does not subject you to the obligation to obtain a permit under 40 CFR part 70 or 71, provided you are not required to obtain a permit under 40 CFR 70.3(a) or 40 CFR 71.3(a) for a reason other than your status as an area source under this subpart. Notwithstanding the previous sentence, you must continue to comply with the provisions of this subpart as applicable.

(e) If you are an owner or operator of a stationary RICE used for national security purposes, you may be eligible to request an exemption from the requirements of this subpart as described in 40 CFR part 1068, subpart C.

(f) The emergency stationary RICE listed in paragraphs (f)(1) through (3) of this section are not subject to this subpart. The stationary RICE must meet the definition of an emergency stationary RICE in § 63.6675, which includes operating according to the provisions specified in § 63.6640(f).

(1) Existing residential emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in § 63.6640(f)(4)(ii).

(2) Existing commercial emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in § 63.6640(f)(4)(ii).

(3) Existing institutional emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in § 63.6640(f)(4)(ii).

[69 FR 33506, June 15, 2004, as amended at 73 FR 3603, Jan. 18, 2008; 78 FR 6700, Jan. 30, 2013]

§ 63.6590 What parts of my plant does this subpart cover?

This subpart applies to each affected source.

(a) *Affected source.* An affected source is any existing, new, or reconstructed stationary RICE located at a major or area source of HAP emissions, excluding stationary RICE being tested at a stationary RICE test cell/stand.

(1) *Existing stationary RICE.*

(i) For stationary RICE with a site rating of more than 500 brake horsepower (HP) located at a major source of HAP emissions, a stationary RICE is existing if you commenced construction or reconstruction of the stationary RICE before December 19, 2002.

(ii) For stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions, a stationary RICE is existing if you commenced construction or reconstruction of the stationary RICE before June 12, 2006.

(iii) For stationary RICE located at an area source of HAP emissions, a stationary RICE is existing if you commenced construction or reconstruction of the stationary RICE before June 12, 2006.

(iv) A change in ownership of an existing stationary RICE does not make that stationary RICE a new or reconstructed stationary RICE.

(2) *New stationary RICE.* (i) A stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions is new if you commenced construction of the stationary RICE on or after December 19, 2002.

(ii) A stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions is new if you commenced construction of the stationary RICE on or after June 12, 2006.

(iii) A stationary RICE located at an area source of HAP emissions is new if you commenced construction of the stationary RICE on or after June 12, 2006.

(3) *Reconstructed stationary RICE.* (i) A stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions is reconstructed if you meet the definition of reconstruction in § 63.2 and reconstruction is commenced on or after December 19, 2002.

(ii) A stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions is reconstructed if you meet the definition of reconstruction in § 63.2 and reconstruction is commenced on or after June 12, 2006.

(iii) A stationary RICE located at an area source of HAP emissions is reconstructed if you meet the definition of reconstruction in § 63.2 and reconstruction is commenced on or after June 12, 2006.

(b) *Stationary RICE subject to limited requirements.* (1) An affected source which meets either of the criteria in paragraphs (b)(1)(i) through (ii) of this section does not have to meet the requirements of this subpart and of subpart A of this part except for the initial notification requirements of § 63.6645(f).

(i) The stationary RICE is a new or reconstructed emergency stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions that does not operate or is not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii).

(ii) The stationary RICE is a new or reconstructed limited use stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions.

(2) A new or reconstructed stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis must meet the initial notification requirements of § 63.6645(f) and the requirements of §§ 63.6625(c), 63.6650(g), and 63.6655(c). These stationary RICE do not have to meet the emission limitations and operating limitations of this subpart.

(3) The following stationary RICE do not have to meet the requirements of this subpart and of subpart A of this part, including initial notification requirements:

(i) Existing spark ignition 2 stroke lean burn (2SLB) stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions;

(ii) Existing spark ignition 4 stroke lean burn (4SLB) stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions;

(iii) Existing emergency stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions that does not operate or is not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii).

(iv) Existing limited use stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions;

(v) Existing stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis;

(c) *Stationary RICE subject to Regulations under 40 CFR Part 60.* An affected source that meets any of the criteria in paragraphs (c)(1) through (7) of this section must meet the requirements of this part by meeting the requirements of 40 CFR part 60 subpart IIII, for compression ignition engines or 40 CFR part 60 subpart JJJJ, for spark ignition engines. No further requirements apply for such engines under this part.

(1) A new or reconstructed stationary RICE located at an area source;

(2) A new or reconstructed 2SLB stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions;

(3) A new or reconstructed 4SLB stationary RICE with a site rating of less than 250 brake HP located at a major source of HAP emissions;

(4) A new or reconstructed spark ignition 4 stroke rich burn (4SRB) stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions;

(5) A new or reconstructed stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis;

(6) A new or reconstructed emergency or limited use stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions;

(7) A new or reconstructed compression ignition (CI) stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions.

[69 FR 33506, June 15, 2004, as amended at 73 FR 3604, Jan. 18, 2008; 75 FR 9674, Mar. 3, 2010; 75 FR 37733, June 30, 2010; 75 FR 51588, Aug. 20, 2010; 78 FR 6700, Jan. 30, 2013]

§ 63.6595 When do I have to comply with this subpart?

(a) *Affected sources.* (1) If you have an existing stationary RICE, excluding existing non-emergency CI stationary RICE, with a site rating of more than 500 brake HP located at a major source of HAP emissions, you must comply with the applicable emission limitations, operating limitations and other requirements no later than June 15, 2007. If you have an existing non-emergency CI stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, an existing stationary CI RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions, or an existing stationary CI RICE located at an area source of HAP emissions, you must comply with the applicable emission limitations, operating limitations, and other requirements no later than May 3, 2013. If you have an existing stationary SI RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions, or an existing stationary SI RICE located at an area source of HAP emissions, you must comply with the applicable emission limitations, operating limitations, and other requirements no later than October 19, 2013.

(2) If you start up your new or reconstructed stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions before August 16, 2004, you must comply with the applicable emission limitations and operating limitations in this subpart no later than August 16, 2004.

(3) If you start up your new or reconstructed stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions after August 16, 2004, you must comply with the applicable emission limitations and operating limitations in this subpart upon startup of your affected source.

(4) If you start up your new or reconstructed stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions before January 18, 2008, you must comply with the applicable emission limitations and operating limitations in this subpart no later than January 18, 2008.

(5) If you start up your new or reconstructed stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions after January 18, 2008, you must comply with the applicable emission limitations and operating limitations in this subpart upon startup of your affected source.

(6) If you start up your new or reconstructed stationary RICE located at an area source of HAP emissions before January 18, 2008, you must comply with the applicable emission limitations and operating limitations in this subpart no later than January 18, 2008.

(7) If you start up your new or reconstructed stationary RICE located at an area source of HAP emissions after January 18, 2008, you must comply with the applicable emission limitations and operating limitations in this subpart upon startup of your affected source.

(b) *Area sources that become major sources.* If you have an area source that increases its emissions or its potential to emit such that it becomes a major source of HAP, the compliance dates in paragraphs (b)(1) and (2) of this section apply to you.

(1) Any stationary RICE for which construction or reconstruction is commenced after the date when your area source becomes a major source of HAP must be in compliance with this subpart upon startup of your affected source.

(2) Any stationary RICE for which construction or reconstruction is commenced before your area source becomes a major source of HAP must be in compliance with the provisions of this subpart that are applicable to RICE located at major sources within 3 years after your area source becomes a major source of HAP.

(c) If you own or operate an affected source, you must meet the applicable notification requirements in § 63.6645 and in 40 CFR part 63, subpart A.

[69 FR 33506, June 15, 2004, as amended at 73 FR 3604, Jan. 18, 2008; 75 FR 9675, Mar. 3, 2010; 75 FR 51589, Aug. 20, 2010; 78 FR 6701, Jan. 30, 2013]

Emission and Operating Limitations

§ 63.6600 What emission limitations and operating limitations must I meet if I own or operate a stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions?

Compliance with the numerical emission limitations established in this subpart is based on the results of testing the average of three 1-hour runs using the testing requirements and procedures in § 63.6620 and Table 4 to this subpart.

(a) If you own or operate an existing, new, or reconstructed spark ignition 4SRB stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you must comply with the emission limitations in Table 1a to this subpart and the operating limitations in Table 1b to this subpart which apply to you.

(b) If you own or operate a new or reconstructed 2SLB stationary RICE with a site rating of more than 500 brake HP located at major source of HAP emissions, a new or reconstructed 4SLB stationary RICE with a site rating of more than 500 brake HP located at major source of HAP emissions, or a new or reconstructed CI stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you must comply with the emission limitations in Table 2a to this subpart and the operating limitations in Table 2b to this subpart which apply to you.

(c) If you own or operate any of the following stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you do not need to comply with the emission limitations in Tables 1a, 2a, 2c, and 2d to this subpart or operating limitations in Tables 1b and 2b to this subpart: an existing 2SLB stationary RICE; an existing 4SLB stationary RICE; a stationary RICE that combusts landfill

gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis; an emergency stationary RICE; or a limited use stationary RICE.

(d) If you own or operate an existing non-emergency stationary CI RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you must comply with the emission limitations in Table 2c to this subpart and the operating limitations in Table 2b to this subpart which apply to you.

[73 FR 3605, Jan. 18, 2008, as amended at 75 FR 9675, Mar. 3, 2010]

§ 63.6601 What emission limitations must I meet if I own or operate a new or reconstructed 4SLB stationary RICE with a site rating of greater than or equal to 250 brake HP and less than or equal to 500 brake HP located at a major source of HAP emissions?

Compliance with the numerical emission limitations established in this subpart is based on the results of testing the average of three 1-hour runs using the testing requirements and procedures in § 63.6620 and Table 4 to this subpart. If you own or operate a new or reconstructed 4SLB stationary RICE with a site rating of greater than or equal to 250 and less than or equal to 500 brake HP located at major source of HAP emissions manufactured on or after January 1, 2008, you must comply with the emission limitations in Table 2a to this subpart and the operating limitations in Table 2b to this subpart which apply to you.

[73 FR 3605, Jan. 18, 2008, as amended at 75 FR 9675, Mar. 3, 2010; 75 FR 51589, Aug. 20, 2010]

§ 63.6602 What emission limitations and other requirements must I meet if I own or operate an existing stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions?

If you own or operate an existing stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions, you must comply with the emission limitations and other requirements in Table 2c to this subpart which apply to you. Compliance with the numerical emission limitations established in this subpart is based on the results of testing the average of three 1-hour runs using the testing requirements and procedures in § 63.6620 and Table 4 to this subpart.

[78 FR 6701, Jan. 30, 2013]

§ 63.6603 What emission limitations, operating limitations, and other requirements must I meet if I own or operate an existing stationary RICE located at an area source of HAP emissions?

Compliance with the numerical emission limitations established in this subpart is based on the results of testing the average of three 1-hour runs using the testing requirements and procedures in § 63.6620 and Table 4 to this subpart.

(a) If you own or operate an existing stationary RICE located at an area source of HAP emissions, you must comply with the requirements in Table 2d to this subpart and the operating limitations in Table 2b to this subpart that apply to you.

(b) If you own or operate an existing stationary non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP that meets either paragraph (b)(1) or (2) of this section, you do not have to meet the numerical CO emission limitations specified in Table 2d of this subpart. Existing stationary non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP that meet either paragraph (b)(1) or (2) of this section must meet the management practices that are shown for stationary non-emergency CI RICE with a site rating of less than or equal to 300 HP in Table 2d of this subpart.

(1) The area source is located in an area of Alaska that is not accessible by the Federal Aid Highway System (FAHS).

(2) The stationary RICE is located at an area source that meets paragraphs (b)(2)(i), (ii), and (iii) of this section.

(i) The only connection to the FAHS is through the Alaska Marine Highway System (AMHS), or the stationary RICE operation is within an isolated grid in Alaska that is not connected to the statewide electrical grid referred to as the Alaska Railbelt Grid.

(ii) At least 10 percent of the power generated by the stationary RICE on an annual basis is used for residential purposes.

(iii) The generating capacity of the area source is less than 12 megawatts, or the stationary RICE is used exclusively for backup power for renewable energy.

(c) If you own or operate an existing stationary non-emergency CI RICE with a site rating of more than 300 HP located on an offshore vessel that is an area source of HAP and is a nonroad vehicle that is an Outer Continental Shelf (OCS) source as defined in 40 CFR 55.2, you do not have to meet the numerical CO emission limitations specified in Table 2d of this subpart. You must meet all of the following management practices:

(1) Change oil every 1,000 hours of operation or annually, whichever comes first. Sources have the option to utilize an oil analysis program as described in § 63.6625(i) in order to extend the specified oil change requirement.

(2) Inspect and clean air filters every 750 hours of operation or annually, whichever comes first, and replace as necessary.

(3) Inspect fuel filters and belts, if installed, every 750 hours of operation or annually, whichever comes first, and replace as necessary.

(4) Inspect all flexible hoses every 1,000 hours of operation or annually, whichever comes first, and replace as necessary.

(d) If you own or operate an existing non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP emissions that is certified to the Tier 1 or Tier 2 emission standards in Table 1 of 40 CFR 89.112 and that is subject to an enforceable state or local standard that requires the engine to be replaced no later than June 1, 2018, you may until January 1, 2015, or 12 years after the installation date of the engine (whichever is later), but not later than June 1, 2018, choose to comply with the management practices that are shown for stationary non-emergency CI RICE with a site rating of less than or equal to 300 HP in Table 2d of this subpart instead of the applicable emission limitations in Table 2d, operating limitations in Table 2b, and crankcase ventilation system requirements in § 63.6625(g). You must comply with the emission limitations in Table 2d and operating limitations in Table 2b that apply for non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP emissions by January 1, 2015, or 12 years after the installation date of the engine (whichever is later), but not later than June 1, 2018. You must also comply with the crankcase ventilation system requirements in § 63.6625(g) by January 1, 2015, or 12 years after the installation date of the engine (whichever is later), but not later than June 1, 2018.

(e) If you own or operate an existing non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP emissions that is certified to the Tier 3 (Tier 2 for engines above 560 kilowatt (kW)) emission standards in Table 1 of 40 CFR 89.112, you may comply with the requirements

under this part by meeting the requirements for Tier 3 engines (Tier 2 for engines above 560 kW) in 40 CFR part 60 subpart IIII instead of the emission limitations and other requirements that would otherwise apply under this part for existing non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP emissions.

(f) An existing non-emergency SI 4SLB and 4SRB stationary RICE with a site rating of more than 500 HP located at area sources of HAP must meet the definition of remote stationary RICE in § 63.6675 on the initial compliance date for the engine, October 19, 2013, in order to be considered a remote stationary RICE under this subpart. Owners and operators of existing non-emergency SI 4SLB and 4SRB stationary RICE with a site rating of more than 500 HP located at area sources of HAP that meet the definition of remote stationary RICE in § 63.6675 of this subpart as of October 19, 2013 must evaluate the status of their stationary RICE every 12 months. Owners and operators must keep records of the initial and annual evaluation of the status of the engine. If the evaluation indicates that the stationary RICE no longer meets the definition of remote stationary RICE in § 63.6675 of this subpart, the owner or operator must comply with all of the requirements for existing non-emergency SI 4SLB and 4SRB stationary RICE with a site rating of more than 500 HP located at area sources of HAP that are not remote stationary RICE within 1 year of the evaluation.

[75 FR 9675, Mar. 3, 2010, as amended at 75 FR 51589, Aug. 20, 2010; 76 FR 12866, Mar. 9, 2011; 78 FR 6701, Jan. 30, 2013]

§ 63.6604 What fuel requirements must I meet if I own or operate a stationary CI RICE?

(a) If you own or operate an existing non-emergency, non-black start CI stationary RICE with a site rating of more than 300 brake HP with a displacement of less than 30 liters per cylinder that uses diesel fuel, you must use diesel fuel that meets the requirements in 40 CFR 80.510(b) for nonroad diesel fuel.

(b) Beginning January 1, 2015, if you own or operate an existing emergency CI stationary RICE with a site rating of more than 100 brake HP and a displacement of less than 30 liters per cylinder that uses diesel fuel and operates or is contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) or that operates for the purpose specified in § 63.6640(f)(4)(ii), you must use diesel fuel that meets the requirements in 40 CFR 80.510(b) for nonroad diesel fuel, except that any existing diesel fuel purchased (or otherwise obtained) prior to January 1, 2015, may be used until depleted.

(c) Beginning January 1, 2015, if you own or operate a new emergency CI stationary RICE with a site rating of more than 500 brake HP and a displacement of less than 30 liters per cylinder located at a major source of HAP that uses diesel fuel and operates or is contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii), you must use diesel fuel that meets the requirements in 40 CFR 80.510(b) for nonroad diesel fuel, except that any existing diesel fuel purchased (or otherwise obtained) prior to January 1, 2015, may be used until depleted.

(d) Existing CI stationary RICE located in Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, at area sources in areas of Alaska that meet either § 63.6603(b)(1) or § 63.6603(b)(2), or are on offshore vessels that meet § 63.6603(c) are exempt from the requirements of this section.

[78 FR 6702, Jan. 30, 2013]

General Compliance Requirements

§ 63.6605 What are my general requirements for complying with this subpart?

(a) You must be in compliance with the emission limitations, operating limitations, and other requirements in this subpart that apply to you at all times.

(b) At all times you must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require you to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

[75 FR 9675, Mar. 3, 2010, as amended at 78 FR 6702, Jan. 30, 2013]

Testing and Initial Compliance Requirements

§ 63.6610 By what date must I conduct the initial performance tests or other initial compliance demonstrations if I own or operate a stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions?

If you own or operate a stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions you are subject to the requirements of this section.

(a) You must conduct the initial performance test or other initial compliance demonstrations in Table 4 to this subpart that apply to you within 180 days after the compliance date that is specified for your stationary RICE in § 63.6595 and according to the provisions in § 63.7(a)(2).

(b) If you commenced construction or reconstruction between December 19, 2002 and June 15, 2004 and own or operate stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you must demonstrate initial compliance with either the proposed emission limitations or the promulgated emission limitations no later than February 10, 2005 or no later than 180 days after startup of the source, whichever is later, according to § 63.7(a)(2)(ix).

(c) If you commenced construction or reconstruction between December 19, 2002 and June 15, 2004 and own or operate stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, and you chose to comply with the proposed emission limitations when demonstrating initial compliance, you must conduct a second performance test to demonstrate compliance with the promulgated emission limitations by December 13, 2007 or after startup of the source, whichever is later, according to § 63.7(a)(2)(ix).

(d) An owner or operator is not required to conduct an initial performance test on units for which a performance test has been previously conducted, but the test must meet all of the conditions described in paragraphs (d)(1) through (5) of this section.

(1) The test must have been conducted using the same methods specified in this subpart, and these methods must have been followed correctly.

(2) The test must not be older than 2 years.

(3) The test must be reviewed and accepted by the Administrator.

(4) Either no process or equipment changes must have been made since the test was performed, or the owner or operator must be able to demonstrate that the results of the performance test, with or without adjustments, reliably demonstrate compliance despite process or equipment changes.

(5) The test must be conducted at any load condition within plus or minus 10 percent of 100 percent load.

[69 FR 33506, June 15, 2004, as amended at 73 FR 3605, Jan. 18, 2008]

§ 63.6611 By what date must I conduct the initial performance tests or other initial compliance demonstrations if I own or operate a new or reconstructed 4SLB SI stationary RICE with a site rating of greater than or equal to 250 and less than or equal to 500 brake HP located at a major source of HAP emissions?

If you own or operate a new or reconstructed 4SLB stationary RICE with a site rating of greater than or equal to 250 and less than or equal to 500 brake HP located at a major source of HAP emissions, you must conduct an initial performance test within 240 days after the compliance date that is specified for your stationary RICE in § 63.6595 and according to the provisions specified in Table 4 to this subpart, as appropriate.

[73 FR 3605, Jan. 18, 2008, as amended at 75 FR 51589, Aug. 20, 2010]

§ 63.6612 By what date must I conduct the initial performance tests or other initial compliance demonstrations if I own or operate an existing stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions or an existing stationary RICE located at an area source of HAP emissions?

If you own or operate an existing stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions or an existing stationary RICE located at an area source of HAP emissions you are subject to the requirements of this section.

(a) You must conduct any initial performance test or other initial compliance demonstration according to Tables 4 and 5 to this subpart that apply to you within 180 days after the compliance date that is specified for your stationary RICE in § 63.6595 and according to the provisions in § 63.7(a)(2).

(b) An owner or operator is not required to conduct an initial performance test on a unit for which a performance test has been previously conducted, but the test must meet all of the conditions described in paragraphs (b)(1) through (4) of this section.

(1) The test must have been conducted using the same methods specified in this subpart, and these methods must have been followed correctly.

(2) The test must not be older than 2 years.

(3) The test must be reviewed and accepted by the Administrator.

(4) Either no process or equipment changes must have been made since the test was performed, or the owner or operator must be able to demonstrate that the results of the performance test, with or without adjustments, reliably demonstrate compliance despite process or equipment changes.

[75 FR 9676, Mar. 3, 2010, as amended at 75 FR 51589, Aug. 20, 2010]

§ 63.6615 When must I conduct subsequent performance tests?

If you must comply with the emission limitations and operating limitations, you must conduct subsequent performance tests as specified in Table 3 of this subpart.

§ 63.6620 What performance tests and other procedures must I use?

(a) You must conduct each performance test in Tables 3 and 4 of this subpart that applies to you.

(b) Each performance test must be conducted according to the requirements that this subpart specifies in Table 4 to this subpart. If you own or operate a non-operational stationary RICE that is subject to performance testing, you do not need to start up the engine solely to conduct the performance test. Owners and operators of a non-operational engine can conduct the performance test when the engine is started up again. The test must be conducted at any load condition within plus or minus 10 percent of 100 percent load for the stationary RICE listed in paragraphs (b)(1) through (4) of this section.

(1) Non-emergency 4SRB stationary RICE with a site rating of greater than 500 brake HP located at a major source of HAP emissions.

(2) New non-emergency 4SLB stationary RICE with a site rating of greater than or equal to 250 brake HP located at a major source of HAP emissions.

(3) New non-emergency 2SLB stationary RICE with a site rating of greater than 500 brake HP located at a major source of HAP emissions.

(4) New non-emergency CI stationary RICE with a site rating of greater than 500 brake HP located at a major source of HAP emissions.

(c) [Reserved]

(d) You must conduct three separate test runs for each performance test required in this section, as specified in § 63.7(e)(3). Each test run must last at least 1 hour, unless otherwise specified in this subpart.

(e)(1) You must use Equation 1 of this section to determine compliance with the percent reduction requirement:

$$\frac{C_i - C_o}{C_i} \times 100 = R \quad (Eq.\ 1)$$

Where:

C_i = concentration of carbon monoxide (CO), total hydrocarbons (THC), or formaldehyde at the control device inlet,

C_o = concentration of CO, THC, or formaldehyde at the control device outlet, and

R = percent reduction of CO, THC, or formaldehyde emissions.

(2) You must normalize the CO, THC, or formaldehyde concentrations at the inlet and outlet of the control device to a dry basis and to 15 percent oxygen, or an equivalent percent carbon dioxide (CO_2). If pollutant concentrations are to be corrected to 15 percent oxygen and CO_2 concentration is measured in lieu of oxygen concentration measurement, a CO_2 correction factor is needed. Calculate the CO_2 correction factor as described in paragraphs (e)(2)(i) through (iii) of this section.

(i) Calculate the fuel-specific F_o value for the fuel burned during the test using values obtained from Method 19, Section 5.2, and the following equation:

$$F_o = \frac{0.209\ F_d}{F_c} \quad (Eq.\ 2)$$

Where:

F_o = Fuel factor based on the ratio of oxygen volume to the ultimate CO_2 volume produced by the fuel at zero percent excess air.

0.209 = Fraction of air that is oxygen, percent/100.

F_d = Ratio of the volume of dry effluent gas to the gross calorific value of the fuel from Method 19, dsm^3 /J (dscf/10^6 Btu).

F_c = Ratio of the volume of CO_2 produced to the gross calorific value of the fuel from Method 19, dsm^3 /J (dscf/10^6 Btu)

(ii) Calculate the CO_2 correction factor for correcting measurement data to 15 percent O_2 , as follows:

$$X_{CO2} = \frac{5.9}{F_o} \quad (Eq.\ 3)$$

Where:

X_{CO2} = CO_2 correction factor, percent.

5.9 = 20.9 percent O_2 —15 percent O_2 , the defined O_2 correction value, percent.

(iii) Calculate the CO, THC, and formaldehyde gas concentrations adjusted to 15 percent O_2 using CO_2 as follows:

$$C_{adj} = C_d \frac{X_{CO2}}{\%CO_2} \quad (Eq.\ 4)$$

Where:

C_{adj} = Calculated concentration of CO, THC, or formaldehyde adjusted to 15 percent O_2.

C_d = Measured concentration of CO, THC, or formaldehyde, uncorrected.

X_{CO2} = CO_2 correction factor, percent.

$\%CO_2$ = Measured CO_2 concentration measured, dry basis, percent.

(f) If you comply with the emission limitation to reduce CO and you are not using an oxidation catalyst, if you comply with the emission limitation to reduce formaldehyde and you are not using NSCR, or if you comply with the emission limitation to limit the concentration of formaldehyde in the stationary RICE exhaust and you are not using an oxidation catalyst or NSCR, you must petition the Administrator for operating limitations to be established during the initial performance test and continuously monitored thereafter; or for approval of no operating limitations. You must not conduct the initial performance test until after the petition has been approved by the Administrator.

(g) If you petition the Administrator for approval of operating limitations, your petition must include the information described in paragraphs (g)(1) through (5) of this section.

(1) Identification of the specific parameters you propose to use as operating limitations;

(2) A discussion of the relationship between these parameters and HAP emissions, identifying how HAP emissions change with changes in these parameters, and how limitations on these parameters will serve to limit HAP emissions;

(3) A discussion of how you will establish the upper and/or lower values for these parameters which will establish the limits on these parameters in the operating limitations;

(4) A discussion identifying the methods you will use to measure and the instruments you will use to monitor these parameters, as well as the relative accuracy and precision of these methods and instruments; and

(5) A discussion identifying the frequency and methods for recalibrating the instruments you will use for monitoring these parameters.

(h) If you petition the Administrator for approval of no operating limitations, your petition must include the information described in paragraphs (h)(1) through (7) of this section.

(1) Identification of the parameters associated with operation of the stationary RICE and any emission control device which could change intentionally (*e.g.,* operator adjustment, automatic controller adjustment, etc.) or unintentionally (*e.g.,* wear and tear, error, etc.) on a routine basis or over time;

(2) A discussion of the relationship, if any, between changes in the parameters and changes in HAP emissions;

(3) For the parameters which could change in such a way as to increase HAP emissions, a discussion of whether establishing limitations on the parameters would serve to limit HAP emissions;

(4) For the parameters which could change in such a way as to increase HAP emissions, a discussion of how you could establish upper and/or lower values for the parameters which would establish limits on the parameters in operating limitations;

(5) For the parameters, a discussion identifying the methods you could use to measure them and the instruments you could use to monitor them, as well as the relative accuracy and precision of the methods and instruments;

(6) For the parameters, a discussion identifying the frequency and methods for recalibrating the instruments you could use to monitor them; and

(7) A discussion of why, from your point of view, it is infeasible or unreasonable to adopt the parameters as operating limitations.

(i) The engine percent load during a performance test must be determined by documenting the calculations, assumptions, and measurement devices used to measure or estimate the percent load in a specific application. A written report of the average percent load determination must be included in the notification of compliance status. The following information must be included in the written report: the engine model number, the engine manufacturer, the year of purchase, the manufacturer's site-rated brake horsepower, the ambient temperature, pressure, and humidity during the performance test, and all assumptions that were made to estimate or calculate percent load during the performance test must be clearly explained. If measurement devices such as flow meters, kilowatt meters, beta analyzers, stain gauges, etc. are used, the model number of the measurement device, and an estimate of its accurate in percentage of true value must be provided.

[69 FR 33506, June 15, 2004, as amended at 75 FR 9676, Mar. 3, 2010; 78 FR 6702, Jan. 30, 2013]

§ 63.6625 What are my monitoring, installation, collection, operation, and maintenance requirements?

(a) If you elect to install a CEMS as specified in Table 5 of this subpart, you must install, operate, and maintain a CEMS to monitor CO and either O_2 or CO_2 according to the requirements in paragraphs (a)(1) through (4) of this section. If you are meeting a requirement to reduce CO emissions, the CEMS must be installed at both the inlet and outlet of the control device. If you are meeting a requirement to limit the concentration of CO, the CEMS must be installed at the outlet of the control device.

(1) Each CEMS must be installed, operated, and maintained according to the applicable performance specifications of 40 CFR part 60, appendix B.

(2) You must conduct an initial performance evaluation and an annual relative accuracy test audit (RATA) of each CEMS according to the requirements in § 63.8 and according to the applicable performance specifications of 40 CFR part 60, appendix B as well as daily and periodic data quality checks in accordance with 40 CFR part 60, appendix F, procedure 1.

(3) As specified in § 63.8(c)(4)(ii), each CEMS must complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period. You must have at least two data points, with each representing a different 15-minute period, to have a valid hour of data.

(4) The CEMS data must be reduced as specified in § 63.8(g)(2) and recorded in parts per million or parts per billion (as appropriate for the applicable limitation) at 15 percent oxygen or the equivalent CO_2 concentration.

(b) If you are required to install a continuous parameter monitoring system (CPMS) as specified in Table 5 of this subpart, you must install, operate, and maintain each CPMS according to the requirements in paragraphs (b)(1) through (6) of this section. For an affected source that is complying with the emission limitations and operating limitations on March 9, 2011, the requirements in paragraph (b) of this section are applicable September 6, 2011.

(1) You must prepare a site-specific monitoring plan that addresses the monitoring system design, data collection, and the quality assurance and quality control elements outlined in paragraphs (b)(1)(i) through (v) of this section and in § 63.8(d). As specified in § 63.8(f)(4), you may request approval of monitoring system quality assurance and quality control procedures alternative to those specified in paragraphs (b)(1) through (5) of this section in your site-specific monitoring plan.

(i) The performance criteria and design specifications for the monitoring system equipment, including the sample interface, detector signal analyzer, and data acquisition and calculations;

(ii) Sampling interface (*e.g.,* thermocouple) location such that the monitoring system will provide representative measurements;

(iii) Equipment performance evaluations, system accuracy audits, or other audit procedures;

(iv) Ongoing operation and maintenance procedures in accordance with provisions in § 63.8(c)(1)(ii) and (c)(3); and

(v) Ongoing reporting and recordkeeping procedures in accordance with provisions in § 63.10(c), (e)(1), and (e)(2)(i).

(2) You must install, operate, and maintain each CPMS in continuous operation according to the procedures in your site-specific monitoring plan.

(3) The CPMS must collect data at least once every 15 minutes (see also § 63.6635).

(4) For a CPMS for measuring temperature range, the temperature sensor must have a minimum tolerance of 2.8 degrees Celsius (5 degrees Fahrenheit) or 1 percent of the measurement range, whichever is larger.

(5) You must conduct the CPMS equipment performance evaluation, system accuracy audits, or other audit procedures specified in your site-specific monitoring plan at least annually.

(6) You must conduct a performance evaluation of each CPMS in accordance with your site-specific monitoring plan.

(c) If you are operating a new or reconstructed stationary RICE which fires landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, you must monitor and record your fuel usage daily with separate fuel meters to measure the volumetric flow rate of each fuel. In addition, you must operate your stationary RICE in a manner which reasonably minimizes HAP emissions.

(d) If you are operating a new or reconstructed emergency 4SLB stationary RICE with a site rating of greater than or equal to 250 and less than or equal to 500 brake HP located at a major source of HAP emissions, you must install a non-resettable hour meter prior to the startup of the engine.

(e) If you own or operate any of the following stationary RICE, you must operate and maintain the stationary RICE and after-treatment control device (if any) according to the manufacturer's emission-related written instructions or develop your own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions:

(1) An existing stationary RICE with a site rating of less than 100 HP located at a major source of HAP emissions;

(2) An existing emergency or black start stationary RICE with a site rating of less than or equal to 500 HP located at a major source of HAP emissions;

(3) An existing emergency or black start stationary RICE located at an area source of HAP emissions;

(4) An existing non-emergency, non-black start stationary CI RICE with a site rating less than or equal to 300 HP located at an area source of HAP emissions;

(5) An existing non-emergency, non-black start 2SLB stationary RICE located at an area source of HAP emissions;

(6) An existing non-emergency, non-black start stationary RICE located at an area source of HAP emissions which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis.

(7) An existing non-emergency, non-black start 4SLB stationary RICE with a site rating less than or equal to 500 HP located at an area source of HAP emissions;

(8) An existing non-emergency, non-black start 4SRB stationary RICE with a site rating less than or equal to 500 HP located at an area source of HAP emissions;

(9) An existing, non-emergency, non-black start 4SLB stationary RICE with a site rating greater than 500 HP located at an area source of HAP emissions that is operated 24 hours or less per calendar year; and

(10) An existing, non-emergency, non-black start 4SRB stationary RICE with a site rating greater than 500 HP located at an area source of HAP emissions that is operated 24 hours or less per calendar year.

(f) If you own or operate an existing emergency stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions or an existing emergency stationary RICE located at an area source of HAP emissions, you must install a non-resettable hour meter if one is not already installed.

(g) If you own or operate an existing non-emergency, non-black start CI engine greater than or equal to 300 HP that is not equipped with a closed crankcase ventilation system, you must comply with either paragraph (g)(1) or paragraph (2) of this section. Owners and operators must follow the manufacturer's specified maintenance requirements for operating and maintaining the open or closed crankcase ventilation systems and replacing the crankcase filters, or can request the Administrator to approve different maintenance requirements that are as protective as manufacturer requirements. Existing CI engines located at area sources in areas of Alaska that meet either § 63.6603(b)(1) or § 63.6603(b)(2) do not have to meet the requirements of this paragraph (g). Existing CI engines located on offshore vessels that meet § 63.6603(c) do not have to meet the requirements of this paragraph (g).

(1) Install a closed crankcase ventilation system that prevents crankcase emissions from being emitted to the atmosphere, or

(2) Install an open crankcase filtration emission control system that reduces emissions from the crankcase by filtering the exhaust stream to remove oil mist, particulates and metals.

(h) If you operate a new, reconstructed, or existing stationary engine, you must minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the emission standards applicable to all times other than startup in Tables 1a, 2a, 2c, and 2d to this subpart apply.

(i) If you own or operate a stationary CI engine that is subject to the work, operation or management practices in items 1 or 2 of Table 2c to this subpart or in items 1 or 4 of Table 2d to this subpart, you have the option of utilizing an oil analysis program in order to extend the specified oil change requirement in Tables 2c and 2d to this subpart. The oil analysis must be performed at the same frequency specified for changing the oil in Table 2c or 2d to this subpart. The analysis program must at a minimum analyze the following three parameters: Total Base Number, viscosity, and percent water content. The condemning limits for these parameters are as follows: Total Base Number is less than 30 percent of the Total Base Number of the oil when new; viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new; or percent water content (by volume) is greater than 0.5. If all of these condemning limits are not exceeded, the engine owner or operator is not required to change the oil. If any of the limits are exceeded, the engine owner or operator must change the oil within 2 business days of receiving the results of the analysis; if the engine is not in operation when the results of the analysis are received, the engine owner or operator must change the oil within 2 business days or before commencing operation, whichever is later. The owner or operator must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine.

(j) If you own or operate a stationary SI engine that is subject to the work, operation or management practices in items 6, 7, or 8 of Table 2c to this subpart or in items 5, 6, 7, 9, or 11 of Table 2d to this

subpart, you have the option of utilizing an oil analysis program in order to extend the specified oil change requirement in Tables 2c and 2d to this subpart. The oil analysis must be performed at the same frequency specified for changing the oil in Table 2c or 2d to this subpart. The analysis program must at a minimum analyze the following three parameters: Total Acid Number, viscosity, and percent water content. The condemning limits for these parameters are as follows: Total Acid Number increases by more than 3.0 milligrams of potassium hydroxide (KOH) per gram from Total Acid Number of the oil when new; viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new; or percent water content (by volume) is greater than 0.5. If all of these condemning limits are not exceeded, the engine owner or operator is not required to change the oil. If any of the limits are exceeded, the engine owner or operator must change the oil within 2 business days of receiving the results of the analysis; if the engine is not in operation when the results of the analysis are received, the engine owner or operator must change the oil within 2 business days or before commencing operation, whichever is later. The owner or operator must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine.

[69 FR 33506, June 15, 2004, as amended at 73 FR 3606, Jan. 18, 2008; 75 FR 9676, Mar. 3, 2010; 75 FR 51589, Aug. 20, 2010; 76 FR 12866, Mar. 9, 2011; 78 FR 6703, Jan. 30, 2013]

§ 63.6630 How do I demonstrate initial compliance with the emission limitations, operating limitations, and other requirements?

(a) You must demonstrate initial compliance with each emission limitation, operating limitation, and other requirement that applies to you according to Table 5 of this subpart.

(b) During the initial performance test, you must establish each operating limitation in Tables 1b and 2b of this subpart that applies to you.

(c) You must submit the Notification of Compliance Status containing the results of the initial compliance demonstration according to the requirements in § 63.6645.

(d) Non-emergency 4SRB stationary RICE complying with the requirement to reduce formaldehyde emissions by 76 percent or more can demonstrate initial compliance with the formaldehyde emission limit by testing for THC instead of formaldehyde. The testing must be conducted according to the requirements in Table 4 of this subpart. The average reduction of emissions of THC determined from the performance test must be equal to or greater than 30 percent.

(e) The initial compliance demonstration required for existing non-emergency 4SLB and 4SRB stationary RICE with a site rating of more than 500 HP located at an area source of HAP that are not remote stationary RICE and that are operated more than 24 hours per calendar year must be conducted according to the following requirements:

(1) The compliance demonstration must consist of at least three test runs.

(2) Each test run must be of at least 15 minute duration, except that each test conducted using the method in appendix A to this subpart must consist of at least one measurement cycle and include at least 2 minutes of test data phase measurement.

(3) If you are demonstrating compliance with the CO concentration or CO percent reduction requirement, you must measure CO emissions using one of the CO measurement methods specified in Table 4 of this subpart, or using appendix A to this subpart.

(4) If you are demonstrating compliance with the THC percent reduction requirement, you must measure THC emissions using Method 25A, reported as propane, of 40 CFR part 60, appendix A.

(5) You must measure O_2 using one of the O_2 measurement methods specified in Table 4 of this subpart. Measurements to determine O_2 concentration must be made at the same time as the measurements for CO or THC concentration.

(6) If you are demonstrating compliance with the CO or THC percent reduction requirement, you must measure CO or THC emissions and O_2 emissions simultaneously at the inlet and outlet of the control device.

[69 FR 33506, June 15, 2004, as amended at 78 FR 6704, Jan. 30, 2013]

Continuous Compliance Requirements

§ 63.6635 How do I monitor and collect data to demonstrate continuous compliance?

(a) If you must comply with emission and operating limitations, you must monitor and collect data according to this section.

(b) Except for monitor malfunctions, associated repairs, required performance evaluations, and required quality assurance or control activities, you must monitor continuously at all times that the stationary RICE is operating. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions.

(c) You may not use data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities in data averages and calculations used to report emission or operating levels. You must, however, use all the valid data collected during all other periods.

[69 FR 33506, June 15, 2004, as amended at 76 FR 12867, Mar. 9, 2011]

§ 63.6640 How do I demonstrate continuous compliance with the emission limitations, operating limitations, and other requirements?

(a) You must demonstrate continuous compliance with each emission limitation, operating limitation, and other requirements in Tables 1a and 1b, Tables 2a and 2b, Table 2c, and Table 2d to this subpart that apply to you according to methods specified in Table 6 to this subpart.

(b) You must report each instance in which you did not meet each emission limitation or operating limitation in Tables 1a and 1b, Tables 2a and 2b, Table 2c, and Table 2d to this subpart that apply to you. These instances are deviations from the emission and operating limitations in this subpart. These deviations must be reported according to the requirements in § 63.6650. If you change your catalyst, you must reestablish the values of the operating parameters measured during the initial performance test. When you reestablish the values of your operating parameters, you must also conduct a performance test to demonstrate that you are meeting the required emission limitation applicable to your stationary RICE.

(c) The annual compliance demonstration required for existing non-emergency 4SLB and 4SRB stationary RICE with a site rating of more than 500 HP located at an area source of HAP that are not remote stationary RICE and that are operated more than 24 hours per calendar year must be conducted according to the following requirements:

(1) The compliance demonstration must consist of at least one test run.

(2) Each test run must be of at least 15 minute duration, except that each test conducted using the method in appendix A to this subpart must consist of at least one measurement cycle and include at least 2 minutes of test data phase measurement.

(3) If you are demonstrating compliance with the CO concentration or CO percent reduction requirement, you must measure CO emissions using one of the CO measurement methods specified in Table 4 of this subpart, or using appendix A to this subpart.

(4) If you are demonstrating compliance with the THC percent reduction requirement, you must measure THC emissions using Method 25A, reported as propane, of 40 CFR part 60, appendix A.

(5) You must measure O_2 using one of the O_2 measurement methods specified in Table 4 of this subpart. Measurements to determine O_2 concentration must be made at the same time as the measurements for CO or THC concentration.

(6) If you are demonstrating compliance with the CO or THC percent reduction requirement, you must measure CO or THC emissions and O_2 emissions simultaneously at the inlet and outlet of the control device.

(7) If the results of the annual compliance demonstration show that the emissions exceed the levels specified in Table 6 of this subpart, the stationary RICE must be shut down as soon as safely possible, and appropriate corrective action must be taken (e.g., repairs, catalyst cleaning, catalyst replacement). The stationary RICE must be retested within 7 days of being restarted and the emissions must meet the levels specified in Table 6 of this subpart. If the retest shows that the emissions continue to exceed the specified levels, the stationary RICE must again be shut down as soon as safely possible, and the stationary RICE may not operate, except for purposes of startup and testing, until the owner/operator demonstrates through testing that the emissions do not exceed the levels specified in Table 6 of this subpart.

(d) For new, reconstructed, and rebuilt stationary RICE, deviations from the emission or operating limitations that occur during the first 200 hours of operation from engine startup (engine burn-in period) are not violations. Rebuilt stationary RICE means a stationary RICE that has been rebuilt as that term is defined in 40 CFR 94.11(a).

(e) You must also report each instance in which you did not meet the requirements in Table 8 to this subpart that apply to you. If you own or operate a new or reconstructed stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions (except new or reconstructed 4SLB engines greater than or equal to 250 and less than or equal to 500 brake HP), a new or reconstructed stationary RICE located at an area source of HAP emissions, or any of the following RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you do not need to comply with the requirements in Table 8 to this subpart: An existing 2SLB stationary RICE, an existing 4SLB stationary RICE, an existing emergency stationary RICE, an existing limited use stationary RICE, or an existing stationary RICE which fires landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis. If you own or operate any of the following RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you do not need to comply with the requirements in Table 8 to this subpart, except for the initial notification requirements: a new or reconstructed stationary RICE that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, a new or reconstructed emergency stationary RICE, or a new or reconstructed limited use stationary RICE.

(f) If you own or operate an emergency stationary RICE, you must operate the emergency stationary RICE according to the requirements in paragraphs (f)(1) through (4) of this section. In order for the engine to be considered an emergency stationary RICE under this subpart, any operation other than emergency operation, maintenance and testing, emergency demand response, and operation in non-emergency

situations for 50 hours per year, as described in paragraphs (f)(1) through (4) of this section, is prohibited. If you do not operate the engine according to the requirements in paragraphs (f)(1) through (4) of this section, the engine will not be considered an emergency engine under this subpart and must meet all requirements for non-emergency engines.

(1) There is no time limit on the use of emergency stationary RICE in emergency situations.

(2) You may operate your emergency stationary RICE for any combination of the purposes specified in paragraphs (f)(2)(i) through (iii) of this section for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by paragraphs (f)(3) and (4) of this section counts as part of the 100 hours per calendar year allowed by this paragraph (f)(2).

(i) Emergency stationary RICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency RICE beyond 100 hours per calendar year.

(ii) Emergency stationary RICE may be operated for emergency demand response for periods in which the Reliability Coordinator under the North American Electric Reliability Corporation (NERC) Reliability Standard EOP-002-3, Capacity and Energy Emergencies (incorporated by reference, see § 63.14), or other authorized entity as determined by the Reliability Coordinator, has declared an Energy Emergency Alert Level 2 as defined in the NERC Reliability Standard EOP-002-3.

(iii) Emergency stationary RICE may be operated for periods where there is a deviation of voltage or frequency of 5 percent or greater below standard voltage or frequency.

(3) Emergency stationary RICE located at major sources of HAP may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand response provided in paragraph (f)(2) of this section. The 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

(4) Emergency stationary RICE located at area sources of HAP may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand response provided in paragraph (f)(2) of this section. Except as provided in paragraphs (f)(4)(i) and (ii) of this section, the 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

(i) Prior to May 3, 2014, the 50 hours per year for non-emergency situations can be used for peak shaving or non-emergency demand response to generate income for a facility, or to otherwise supply power as part of a financial arrangement with another entity if the engine is operated as part of a peak shaving (load management program) with the local distribution system operator and the power is provided only to the facility itself or to support the local distribution system.

(ii) The 50 hours per year for non-emergency situations can be used to supply power as part of a financial arrangement with another entity if all of the following conditions are met:

(A) The engine is dispatched by the local balancing authority or local transmission and distribution system operator.

(B) The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region.

(C) The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines.

(D) The power is provided only to the facility itself or to support the local transmission and distribution system.

(E) The owner or operator identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the engine owner or operator.

[69 FR 33506, June 15, 2004, as amended at 71 FR 20467, Apr. 20, 2006; 73 FR 3606, Jan. 18, 2008; 75 FR 9676, Mar. 3, 2010; 75 FR 51591, Aug. 20, 2010; 78 FR 6704, Jan. 30, 2013]

Notifications, Reports, and Records

§ 63.6645 What notifications must I submit and when?

(a) You must submit all of the notifications in §§ 63.7(b) and (c), 63.8(e), (f)(4) and (f)(6), 63.9(b) through (e), and (g) and (h) that apply to you by the dates specified if you own or operate any of the following;

(1) An existing stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions.

(2) An existing stationary RICE located at an area source of HAP emissions.

(3) A stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions.

(4) A new or reconstructed 4SLB stationary RICE with a site rating of greater than or equal to 250 HP located at a major source of HAP emissions.

(5) This requirement does not apply if you own or operate an existing stationary RICE less than 100 HP, an existing stationary emergency RICE, or an existing stationary RICE that is not subject to any numerical emission standards.

(b) As specified in § 63.9(b)(2), if you start up your stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions before the effective date of this subpart, you must submit an Initial Notification not later than December 13, 2004.

(c) If you start up your new or reconstructed stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions on or after August 16, 2004, you must submit an Initial Notification not later than 120 days after you become subject to this subpart.

(d) As specified in § 63.9(b)(2), if you start up your stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions before the effective date of this subpart

and you are required to submit an initial notification, you must submit an Initial Notification not later than July 16, 2008.

(e) If you start up your new or reconstructed stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions on or after March 18, 2008 and you are required to submit an initial notification, you must submit an Initial Notification not later than 120 days after you become subject to this subpart.

(f) If you are required to submit an Initial Notification but are otherwise not affected by the requirements of this subpart, in accordance with § 63.6590(b), your notification should include the information in § 63.9(b)(2)(i) through (v), and a statement that your stationary RICE has no additional requirements and explain the basis of the exclusion (for example, that it operates exclusively as an emergency stationary RICE if it has a site rating of more than 500 brake HP located at a major source of HAP emissions).

(g) If you are required to conduct a performance test, you must submit a Notification of Intent to conduct a performance test at least 60 days before the performance test is scheduled to begin as required in § 63.7(b)(1).

(h) If you are required to conduct a performance test or other initial compliance demonstration as specified in Tables 4 and 5 to this subpart, you must submit a Notification of Compliance Status according to § 63.9(h)(2)(ii).

(1) For each initial compliance demonstration required in Table 5 to this subpart that does not include a performance test, you must submit the Notification of Compliance Status before the close of business on the 30th day following the completion of the initial compliance demonstration.

(2) For each initial compliance demonstration required in Table 5 to this subpart that includes a performance test conducted according to the requirements in Table 3 to this subpart, you must submit the Notification of Compliance Status, including the performance test results, before the close of business on the 60th day following the completion of the performance test according to § 63.10(d)(2).

(i) If you own or operate an existing non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP emissions that is certified to the Tier 1 or Tier 2 emission standards in Table 1 of 40 CFR 89.112 and subject to an enforceable state or local standard requiring engine replacement and you intend to meet management practices rather than emission limits, as specified in § 63.6603(d), you must submit a notification by March 3, 2013, stating that you intend to use the provision in § 63.6603(d) and identifying the state or local regulation that the engine is subject to.

[73 FR 3606, Jan. 18, 2008, as amended at 75 FR 9677, Mar. 3, 2010; 75 FR 51591, Aug. 20, 2010; 78 FR 6705, Jan. 30, 2013]

§ 63.6650 What reports must I submit and when?

(a) You must submit each report in Table 7 of this subpart that applies to you.

(b) Unless the Administrator has approved a different schedule for submission of reports under § 63.10(a), you must submit each report by the date in Table 7 of this subpart and according to the requirements in paragraphs (b)(1) through (b)(9) of this section.

(1) For semiannual Compliance reports, the first Compliance report must cover the period beginning on the compliance date that is specified for your affected source in § 63.6595 and ending on June 30 or December 31, whichever date is the first date following the end of the first calendar half after the compliance date that is specified for your source in § 63.6595.

(2) For semiannual Compliance reports, the first Compliance report must be postmarked or delivered no later than July 31 or January 31, whichever date follows the end of the first calendar half after the compliance date that is specified for your affected source in § 63.6595.

(3) For semiannual Compliance reports, each subsequent Compliance report must cover the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31.

(4) For semiannual Compliance reports, each subsequent Compliance report must be postmarked or delivered no later than July 31 or January 31, whichever date is the first date following the end of the semiannual reporting period.

(5) For each stationary RICE that is subject to permitting regulations pursuant to 40 CFR part 70 or 71, and if the permitting authority has established dates for submitting semiannual reports pursuant to 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6 (a)(3)(iii)(A), you may submit the first and subsequent Compliance reports according to the dates the permitting authority has established instead of according to the dates in paragraphs (b)(1) through (b)(4) of this section.

(6) For annual Compliance reports, the first Compliance report must cover the period beginning on the compliance date that is specified for your affected source in § 63.6595 and ending on December 31.

(7) For annual Compliance reports, the first Compliance report must be postmarked or delivered no later than January 31 following the end of the first calendar year after the compliance date that is specified for your affected source in § 63.6595.

(8) For annual Compliance reports, each subsequent Compliance report must cover the annual reporting period from January 1 through December 31.

(9) For annual Compliance reports, each subsequent Compliance report must be postmarked or delivered no later than January 31.

(c) The Compliance report must contain the information in paragraphs (c)(1) through (6) of this section.

(1) Company name and address.

(2) Statement by a responsible official, with that official's name, title, and signature, certifying the accuracy of the content of the report.

(3) Date of report and beginning and ending dates of the reporting period.

(4) If you had a malfunction during the reporting period, the compliance report must include the number, duration, and a brief description for each type of malfunction which occurred during the reporting period and which caused or may have caused any applicable emission limitation to be exceeded. The report must also include a description of actions taken by an owner or operator during a malfunction of an affected source to minimize emissions in accordance with § 63.6605(b), including actions taken to correct a malfunction.

(5) If there are no deviations from any emission or operating limitations that apply to you, a statement that there were no deviations from the emission or operating limitations during the reporting period.

(6) If there were no periods during which the continuous monitoring system (CMS), including CEMS and CPMS, was out-of-control, as specified in § 63.8(c)(7), a statement that there were no periods during which the CMS was out-of-control during the reporting period.

(d) For each deviation from an emission or operating limitation that occurs for a stationary RICE where you are not using a CMS to comply with the emission or operating limitations in this subpart, the Compliance report must contain the information in paragraphs (c)(1) through (4) of this section and the information in paragraphs (d)(1) and (2) of this section.

(1) The total operating time of the stationary RICE at which the deviation occurred during the reporting period.

(2) Information on the number, duration, and cause of deviations (including unknown cause, if applicable), as applicable, and the corrective action taken.

(e) For each deviation from an emission or operating limitation occurring for a stationary RICE where you are using a CMS to comply with the emission and operating limitations in this subpart, you must include information in paragraphs (c)(1) through (4) and (e)(1) through (12) of this section.

(1) The date and time that each malfunction started and stopped.

(2) The date, time, and duration that each CMS was inoperative, except for zero (low-level) and high-level checks.

(3) The date, time, and duration that each CMS was out-of-control, including the information in § 63.8(c)(8).

(4) The date and time that each deviation started and stopped, and whether each deviation occurred during a period of malfunction or during another period.

(5) A summary of the total duration of the deviation during the reporting period, and the total duration as a percent of the total source operating time during that reporting period.

(6) A breakdown of the total duration of the deviations during the reporting period into those that are due to control equipment problems, process problems, other known causes, and other unknown causes.

(7) A summary of the total duration of CMS downtime during the reporting period, and the total duration of CMS downtime as a percent of the total operating time of the stationary RICE at which the CMS downtime occurred during that reporting period.

(8) An identification of each parameter and pollutant (CO or formaldehyde) that was monitored at the stationary RICE.

(9) A brief description of the stationary RICE.

(10) A brief description of the CMS.

(11) The date of the latest CMS certification or audit.

(12) A description of any changes in CMS, processes, or controls since the last reporting period.

(f) Each affected source that has obtained a title V operating permit pursuant to 40 CFR part 70 or 71 must report all deviations as defined in this subpart in the semiannual monitoring report required by 40 CFR 70.6 (a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A). If an affected source submits a Compliance report pursuant to Table 7 of this subpart along with, or as part of, the semiannual monitoring report required by 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A), and the Compliance report includes all required

information concerning deviations from any emission or operating limitation in this subpart, submission of the Compliance report shall be deemed to satisfy any obligation to report the same deviations in the semiannual monitoring report. However, submission of a Compliance report shall not otherwise affect any obligation the affected source may have to report deviations from permit requirements to the permit authority.

(g) If you are operating as a new or reconstructed stationary RICE which fires landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, you must submit an annual report according to Table 7 of this subpart by the date specified unless the Administrator has approved a different schedule, according to the information described in paragraphs (b)(1) through (b)(5) of this section. You must report the data specified in (g)(1) through (g)(3) of this section.

(1) Fuel flow rate of each fuel and the heating values that were used in your calculations. You must also demonstrate that the percentage of heat input provided by landfill gas or digester gas is equivalent to 10 percent or more of the total fuel consumption on an annual basis.

(2) The operating limits provided in your federally enforceable permit, and any deviations from these limits.

(3) Any problems or errors suspected with the meters.

(h) If you own or operate an emergency stationary RICE with a site rating of more than 100 brake HP that operates or is contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) or that operates for the purpose specified in § 63.6640(f)(4)(ii), you must submit an annual report according to the requirements in paragraphs (h)(1) through (3) of this section.

(1) The report must contain the following information:

(i) Company name and address where the engine is located.

(ii) Date of the report and beginning and ending dates of the reporting period.

(iii) Engine site rating and model year.

(iv) Latitude and longitude of the engine in decimal degrees reported to the fifth decimal place.

(v) Hours operated for the purposes specified in § 63.6640(f)(2)(ii) and (iii), including the date, start time, and end time for engine operation for the purposes specified in § 63.6640(f)(2)(ii) and (iii).

(vi) Number of hours the engine is contractually obligated to be available for the purposes specified in § 63.6640(f)(2)(ii) and (iii).

(vii) Hours spent for operation for the purpose specified in § 63.6640(f)(4)(ii), including the date, start time, and end time for engine operation for the purposes specified in § 63.6640(f)(4)(ii). The report must also identify the entity that dispatched the engine and the situation that necessitated the dispatch of the engine.

(viii) If there were no deviations from the fuel requirements in § 63.6604 that apply to the engine (if any), a statement that there were no deviations from the fuel requirements during the reporting period.

(ix) If there were deviations from the fuel requirements in § 63.6604 that apply to the engine (if any), information on the number, duration, and cause of deviations, and the corrective action taken.

(2) The first annual report must cover the calendar year 2015 and must be submitted no later than March 31, 2016. Subsequent annual reports for each calendar year must be submitted no later than March 31 of the following calendar year.

(3) The annual report must be submitted electronically using the subpart specific reporting form in the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) (*www.epa.gov/cdx*). However, if the reporting form specific to this subpart is not available in CEDRI at the time that the report is due, the written report must be submitted to the Administrator at the appropriate address listed in § 63.13.

[69 FR 33506, June 15, 2004, as amended at 75 FR 9677, Mar. 3, 2010; 78 FR 6705, Jan. 30, 2013]

§ 63.6655 What records must I keep?

(a) If you must comply with the emission and operating limitations, you must keep the records described in paragraphs (a)(1) through (a)(5), (b)(1) through (b)(3) and (c) of this section.

(1) A copy of each notification and report that you submitted to comply with this subpart, including all documentation supporting any Initial Notification or Notification of Compliance Status that you submitted, according to the requirement in § 63.10(b)(2)(xiv).

(2) Records of the occurrence and duration of each malfunction of operation (*i.e.,* process equipment) or the air pollution control and monitoring equipment.

(3) Records of performance tests and performance evaluations as required in § 63.10(b)(2)(viii).

(4) Records of all required maintenance performed on the air pollution control and monitoring equipment.

(5) Records of actions taken during periods of malfunction to minimize emissions in accordance with § 63.6605(b), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.

(b) For each CEMS or CPMS, you must keep the records listed in paragraphs (b)(1) through (3) of this section.

(1) Records described in § 63.10(b)(2)(vi) through (xi).

(2) Previous (*i.e.,* superseded) versions of the performance evaluation plan as required in § 63.8(d)(3).

(3) Requests for alternatives to the relative accuracy test for CEMS or CPMS as required in § 63.8(f)(6)(i), if applicable.

(c) If you are operating a new or reconstructed stationary RICE which fires landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, you must keep the records of your daily fuel usage monitors.

(d) You must keep the records required in Table 6 of this subpart to show continuous compliance with each emission or operating limitation that applies to you.

(e) You must keep records of the maintenance conducted on the stationary RICE in order to demonstrate that you operated and maintained the stationary RICE and after-treatment control device (if any) according to your own maintenance plan if you own or operate any of the following stationary RICE;

(1) An existing stationary RICE with a site rating of less than 100 brake HP located at a major source of HAP emissions.

(2) An existing stationary emergency RICE.

(3) An existing stationary RICE located at an area source of HAP emissions subject to management practices as shown in Table 2d to this subpart.

(f) If you own or operate any of the stationary RICE in paragraphs (f)(1) through (2) of this section, you must keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. The owner or operator must document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation. If the engine is used for the purposes specified in § 63.6640(f)(2)(ii) or (iii) or § 63.6640(f)(4)(ii), the owner or operator must keep records of the notification of the emergency situation, and the date, start time, and end time of engine operation for these purposes.

(1) An existing emergency stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions that does not meet the standards applicable to non-emergency engines.

(2) An existing emergency stationary RICE located at an area source of HAP emissions that does not meet the standards applicable to non-emergency engines.

[69 FR 33506, June 15, 2004, as amended at 75 FR 9678, Mar. 3, 2010; 75 FR 51592, Aug. 20, 2010; 78 FR 6706, Jan. 30, 2013]

§ 63.6660 In what form and how long must I keep my records?

(a) Your records must be in a form suitable and readily available for expeditious review according to § 63.10(b)(1).

(b) As specified in § 63.10(b)(1), you must keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record.

(c) You must keep each record readily accessible in hard copy or electronic form for at least 5 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to § 63.10(b)(1).

[69 FR 33506, June 15, 2004, as amended at 75 FR 9678, Mar. 3, 2010]

Other Requirements and Information

§ 63.6665 What parts of the General Provisions apply to me?

Table 8 to this subpart shows which parts of the General Provisions in §§ 63.1 through 63.15 apply to you. If you own or operate a new or reconstructed stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions (except new or reconstructed 4SLB engines greater than or equal to 250 and less than or equal to 500 brake HP), a new or reconstructed stationary RICE located at an area source of HAP emissions, or any of the following RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you do not need to comply with any of the requirements of the General Provisions specified in Table 8: An existing 2SLB stationary RICE, an existing 4SLB stationary RICE, an existing stationary RICE that combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, an existing emergency

stationary RICE, or an existing limited use stationary RICE. If you own or operate any of the following RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you do not need to comply with the requirements in the General Provisions specified in Table 8 except for the initial notification requirements: A new stationary RICE that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, a new emergency stationary RICE, or a new limited use stationary RICE.

[75 FR 9678, Mar. 3, 2010]

§ 63.6670 Who implements and enforces this subpart?

(a) This subpart is implemented and enforced by the U.S. EPA, or a delegated authority such as your State, local, or tribal agency. If the U.S. EPA Administrator has delegated authority to your State, local, or tribal agency, then that agency (as well as the U.S. EPA) has the authority to implement and enforce this subpart. You should contact your U.S. EPA Regional Office to find out whether this subpart is delegated to your State, local, or tribal agency.

(b) In delegating implementation and enforcement authority of this subpart to a State, local, or tribal agency under 40 CFR part 63, subpart E, the authorities contained in paragraph (c) of this section are retained by the Administrator of the U.S. EPA and are not transferred to the State, local, or tribal agency.

(c) The authorities that will not be delegated to State, local, or tribal agencies are:

(1) Approval of alternatives to the non-opacity emission limitations and operating limitations in § 63.6600 under § 63.6(g).

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

(3) Approval of major alternatives to monitoring under § 63.8(f) and as defined in § 63.90.

(4) Approval of major alternatives to recordkeeping and reporting under § 63.10(f) and as defined in § 63.90.

(5) Approval of a performance test which was conducted prior to the effective date of the rule, as specified in § 63.6610(b).

§ 63.6675 What definitions apply to this subpart?

Terms used in this subpart are defined in the Clean Air Act (CAA); in 40 CFR 63.2, the General Provisions of this part; and in this section as follows:

Alaska Railbelt Grid means the service areas of the six regulated public utilities that extend from Fairbanks to Anchorage and the Kenai Peninsula. These utilities are Golden Valley Electric Association; Chugach Electric Association; Matanuska Electric Association; Homer Electric Association; Anchorage Municipal Light & Power; and the City of Seward Electric System.

Area source means any stationary source of HAP that is not a major source as defined in part 63.

Associated equipment as used in this subpart and as referred to in section 112(n)(4) of the CAA, means equipment associated with an oil or natural gas exploration or production well, and includes all equipment from the well bore to the point of custody transfer, except glycol dehydration units, storage vessels with potential for flash emissions, combustion turbines, and stationary RICE.

Backup power for renewable energy means an engine that provides backup power to a facility that generates electricity from renewable energy resources, as that term is defined in Alaska Statute 42.45.045(l)(5) (incorporated by reference, see § 63.14).

Black start engine means an engine whose only purpose is to start up a combustion turbine.

CAA means the Clean Air Act (42 U.S.C. 7401 *et seq.,* as amended by Public Law 101-549, 104 Stat. 2399).

Commercial emergency stationary RICE means an emergency stationary RICE used in commercial establishments such as office buildings, hotels, stores, telecommunications facilities, restaurants, financial institutions such as banks, doctor's offices, and sports and performing arts facilities.

Compression ignition means relating to a type of stationary internal combustion engine that is not a spark ignition engine.

Custody transfer means the transfer of hydrocarbon liquids or natural gas: After processing and/or treatment in the producing operations, or from storage vessels or automatic transfer facilities or other such equipment, including product loading racks, to pipelines or any other forms of transportation. For the purposes of this subpart, the point at which such liquids or natural gas enters a natural gas processing plant is a point of custody transfer.

Deviation means any instance in which an affected source subject to this subpart, or an owner or operator of such a source:

(1) Fails to meet any requirement or obligation established by this subpart, including but not limited to any emission limitation or operating limitation;

(2) Fails to meet any term or condition that is adopted to implement an applicable requirement in this subpart and that is included in the operating permit for any affected source required to obtain such a permit; or

(3) Fails to meet any emission limitation or operating limitation in this subpart during malfunction, regardless or whether or not such failure is permitted by this subpart.

(4) Fails to satisfy the general duty to minimize emissions established by § 63.6(e)(1)(i).

Diesel engine means any stationary RICE in which a high boiling point liquid fuel injected into the combustion chamber ignites when the air charge has been compressed to a temperature sufficiently high for auto-ignition. This process is also known as compression ignition.

Diesel fuel means any liquid obtained from the distillation of petroleum with a boiling point of approximately 150 to 360 degrees Celsius. One commonly used form is fuel oil number 2. Diesel fuel also includes any non-distillate fuel with comparable physical and chemical properties (*e.g.* biodiesel) that is suitable for use in compression ignition engines.

Digester gas means any gaseous by-product of wastewater treatment typically formed through the anaerobic decomposition of organic waste materials and composed principally of methane and CO_2 .

Dual-fuel engine means any stationary RICE in which a liquid fuel (typically diesel fuel) is used for compression ignition and gaseous fuel (typically natural gas) is used as the primary fuel.

Emergency stationary RICE means any stationary reciprocating internal combustion engine that meets all of the criteria in paragraphs (1) through (3) of this definition. All emergency stationary RICE must comply with the requirements specified in § 63.6640(f) in order to be considered emergency stationary RICE. If the engine does not comply with the requirements specified in § 63.6640(f), then it is not considered to be an emergency stationary RICE under this subpart.

(1) The stationary RICE is operated to provide electrical power or mechanical work during an emergency situation. Examples include stationary RICE used to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility (or the normal power source, if the facility runs on its own power production) is interrupted, or stationary RICE used to pump water in the case of fire or flood, etc.

(2) The stationary RICE is operated under limited circumstances for situations not included in paragraph (1) of this definition, as specified in § 63.6640(f).

(3) The stationary RICE operates as part of a financial arrangement with another entity in situations not included in paragraph (1) of this definition only as allowed in § 63.6640(f)(2)(ii) or (iii) and § 63.6640(f)(4)(i) or (ii).

Engine startup means the time from initial start until applied load and engine and associated equipment reaches steady state or normal operation. For stationary engine with catalytic controls, engine startup means the time from initial start until applied load and engine and associated equipment, including the catalyst, reaches steady state or normal operation.

Four-stroke engine means any type of engine which completes the power cycle in two crankshaft revolutions, with intake and compression strokes in the first revolution and power and exhaust strokes in the second revolution.

Gaseous fuel means a material used for combustion which is in the gaseous state at standard atmospheric temperature and pressure conditions.

Gasoline means any fuel sold in any State for use in motor vehicles and motor vehicle engines, or nonroad or stationary engines, and commonly or commercially known or sold as gasoline.

Glycol dehydration unit means a device in which a liquid glycol (including, but not limited to, ethylene glycol, diethylene glycol, or triethylene glycol) absorbent directly contacts a natural gas stream and absorbs water in a contact tower or absorption column (absorber). The glycol contacts and absorbs water vapor and other gas stream constituents from the natural gas and becomes “rich” glycol. This glycol is then regenerated in the glycol dehydration unit reboiler. The “lean” glycol is then recycled.

Hazardous air pollutants (HAP) means any air pollutants listed in or pursuant to section 112(b) of the CAA.

Institutional emergency stationary RICE means an emergency stationary RICE used in institutional establishments such as medical centers, nursing homes, research centers, institutions of higher education, correctional facilities, elementary and secondary schools, libraries, religious establishments, police stations, and fire stations.

ISO standard day conditions means 288 degrees Kelvin (15 degrees Celsius), 60 percent relative humidity and 101.3 kilopascals pressure.

Landfill gas means a gaseous by-product of the land application of municipal refuse typically formed through the anaerobic decomposition of waste materials and composed principally of methane and CO_2 .

Lean burn engine means any two-stroke or four-stroke spark ignited engine that does not meet the definition of a rich burn engine.

Limited use stationary RICE means any stationary RICE that operates less than 100 hours per year.

Liquefied petroleum gas means any liquefied hydrocarbon gas obtained as a by-product in petroleum refining of natural gas production.

Liquid fuel means any fuel in liquid form at standard temperature and pressure, including but not limited to diesel, residual/crude oil, kerosene/naphtha (jet fuel), and gasoline.

Major Source, as used in this subpart, shall have the same meaning as in § 63.2, except that:

(1) Emissions from any oil or gas exploration or production well (with its associated equipment (as defined in this section)) and emissions from any pipeline compressor station or pump station shall not be aggregated with emissions from other similar units, to determine whether such emission points or stations are major sources, even when emission points are in a contiguous area or under common control;

(2) For oil and gas production facilities, emissions from processes, operations, or equipment that are not part of the same oil and gas production facility, as defined in § 63.1271 of subpart HHH of this part, shall not be aggregated;

(3) For production field facilities, only HAP emissions from glycol dehydration units, storage vessel with the potential for flash emissions, combustion turbines and reciprocating internal combustion engines shall be aggregated for a major source determination; and

(4) Emissions from processes, operations, and equipment that are not part of the same natural gas transmission and storage facility, as defined in § 63.1271 of subpart HHH of this part, shall not be aggregated.

Malfunction means any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner which causes, or has the potential to cause, the emission limitations in an applicable standard to be exceeded. Failures that are caused in part by poor maintenance or careless operation are not malfunctions.

Natural gas means a naturally occurring mixture of hydrocarbon and non-hydrocarbon gases found in geologic formations beneath the Earth's surface, of which the principal constituent is methane. Natural gas may be field or pipeline quality.

Non-selective catalytic reduction (NSCR) means an add-on catalytic nitrogen oxides (NO_X) control device for rich burn engines that, in a two-step reaction, promotes the conversion of excess oxygen, NO_X , CO, and volatile organic compounds (VOC) into CO_2 , nitrogen, and water.

Oil and gas production facility as used in this subpart means any grouping of equipment where hydrocarbon liquids are processed, upgraded (*i.e.,* remove impurities or other constituents to meet contract specifications), or stored prior to the point of custody transfer; or where natural gas is processed, upgraded, or stored prior to entering the natural gas transmission and storage source category. For purposes of a major source determination, facility (including a building, structure, or installation) means oil and natural gas production and processing equipment that is located within the boundaries of an individual surface site as defined in this section. Equipment that is part of a facility will typically be located within close proximity to other equipment located at the same facility. Pieces of production equipment or groupings of equipment located on different oil and gas leases, mineral fee tracts, lease tracts, subsurface or surface unit areas, surface fee tracts, surface lease tracts, or separate surface sites,

whether or not connected by a road, waterway, power line or pipeline, shall not be considered part of the same facility. Examples of facilities in the oil and natural gas production source category include, but are not limited to, well sites, satellite tank batteries, central tank batteries, a compressor station that transports natural gas to a natural gas processing plant, and natural gas processing plants.

Oxidation catalyst means an add-on catalytic control device that controls CO and VOC by oxidation.

Peaking unit or engine means any standby engine intended for use during periods of high demand that are not emergencies.

Percent load means the fractional power of an engine compared to its maximum manufacturer's design capacity at engine site conditions. Percent load may range between 0 percent to above 100 percent.

Potential to emit means the maximum capacity of a stationary source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the stationary source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is federally enforceable. For oil and natural gas production facilities subject to subpart HH of this part, the potential to emit provisions in § 63.760(a) may be used. For natural gas transmission and storage facilities subject to subpart HHH of this part, the maximum annual facility gas throughput for storage facilities may be determined according to § 63.1270(a)(1) and the maximum annual throughput for transmission facilities may be determined according to § 63.1270(a)(2).

Production field facility means those oil and gas production facilities located prior to the point of custody transfer.

Production well means any hole drilled in the earth from which crude oil, condensate, or field natural gas is extracted.

Propane means a colorless gas derived from petroleum and natural gas, with the molecular structure C_3H_8 .

Remote stationary RICE means stationary RICE meeting any of the following criteria:

(1) Stationary RICE located in an offshore area that is beyond the line of ordinary low water along that portion of the coast of the United States that is in direct contact with the open seas and beyond the line marking the seaward limit of inland waters.

(2) Stationary RICE located on a pipeline segment that meets both of the criteria in paragraphs (2)(i) and (ii) of this definition.

(i) A pipeline segment with 10 or fewer buildings intended for human occupancy and no buildings with four or more stories within 220 yards (200 meters) on either side of the centerline of any continuous 1-mile (1.6 kilometers) length of pipeline. Each separate dwelling unit in a multiple dwelling unit building is counted as a separate building intended for human occupancy.

(ii) The pipeline segment does not lie within 100 yards (91 meters) of either a building or a small, well-defined outside area (such as a playground, recreation area, outdoor theater, or other place of public assembly) that is occupied by 20 or more persons on at least 5 days a week for 10 weeks in any 12-month period. The days and weeks need not be consecutive. The building or area is considered occupied for a full day if it is occupied for any portion of the day.

(iii) For purposes of this paragraph (2), the term pipeline segment means all parts of those physical facilities through which gas moves in transportation, including but not limited to pipe, valves, and other appurtenance attached to pipe, compressor units, metering stations, regulator stations, delivery stations, holders, and fabricated assemblies. Stationary RICE located within 50 yards (46 meters) of the pipeline segment providing power for equipment on a pipeline segment are part of the pipeline segment. Transportation of gas means the gathering, transmission, or distribution of gas by pipeline, or the storage of gas. A building is intended for human occupancy if its primary use is for a purpose involving the presence of humans.

(3) Stationary RICE that are not located on gas pipelines and that have 5 or fewer buildings intended for human occupancy and no buildings with four or more stories within a 0.25 mile radius around the engine. A building is intended for human occupancy if its primary use is for a purpose involving the presence of humans.

Residential emergency stationary RICE means an emergency stationary RICE used in residential establishments such as homes or apartment buildings.

Responsible official means responsible official as defined in 40 CFR 70.2.

Rich burn engine means any four-stroke spark ignited engine where the manufacturer's recommended operating air/fuel ratio divided by the stoichiometric air/fuel ratio at full load conditions is less than or equal to 1.1. Engines originally manufactured as rich burn engines, but modified prior to December 19, 2002 with passive emission control technology for NO_X (such as pre-combustion chambers) will be considered lean burn engines. Also, existing engines where there are no manufacturer's recommendations regarding air/fuel ratio will be considered a rich burn engine if the excess oxygen content of the exhaust at full load conditions is less than or equal to 2 percent.

Site-rated HP means the maximum manufacturer's design capacity at engine site conditions.

Spark ignition means relating to either: A gasoline-fueled engine; or any other type of engine with a spark plug (or other sparking device) and with operating characteristics significantly similar to the theoretical Otto combustion cycle. Spark ignition engines usually use a throttle to regulate intake air flow to control power during normal operation. Dual-fuel engines in which a liquid fuel (typically diesel fuel) is used for CI and gaseous fuel (typically natural gas) is used as the primary fuel at an annual average ratio of less than 2 parts diesel fuel to 100 parts total fuel on an energy equivalent basis are spark ignition engines.

Stationary reciprocating internal combustion engine (RICE) means any reciprocating internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work and which is not mobile. Stationary RICE differ from mobile RICE in that a stationary RICE is not a non-road engine as defined at 40 CFR 1068.30, and is not used to propel a motor vehicle or a vehicle used solely for competition.

Stationary RICE test cell/stand means an engine test cell/stand, as defined in subpart PPPPP of this part, that tests stationary RICE.

Stoichiometric means the theoretical air-to-fuel ratio required for complete combustion.

Storage vessel with the potential for flash emissions means any storage vessel that contains a hydrocarbon liquid with a stock tank gas-to-oil ratio equal to or greater than 0.31 cubic meters per liter and an American Petroleum Institute gravity equal to or greater than 40 degrees and an actual annual average hydrocarbon liquid throughput equal to or greater than 79,500 liters per day. Flash emissions occur when dissolved hydrocarbons in the fluid evolve from solution when the fluid pressure is reduced.

Subpart means 40 CFR part 63, subpart ZZZZ.

Surface site means any combination of one or more graded pad sites, gravel pad sites, foundations, platforms, or the immediate physical location upon which equipment is physically affixed.

Two-stroke engine means a type of engine which completes the power cycle in single crankshaft revolution by combining the intake and compression operations into one stroke and the power and exhaust operations into a second stroke. This system requires auxiliary scavenging and inherently runs lean of stoichiometric.

[69 FR 33506, June 15, 2004, as amended at 71 FR 20467, Apr. 20, 2006; 73 FR 3607, Jan. 18, 2008; 75 FR 9679, Mar. 3, 2010; 75 FR 51592, Aug. 20, 2010; 76 FR 12867, Mar. 9, 2011; 78 FR 6706, Jan. 30, 2013]

Table 1a to Subpart ZZZZ of Part 63—Emission Limitations for Existing, New, and Reconstructed Spark Ignition, 4SRB Stationary RICE > 500 HP Located at a Major Source of HAP Emissions

As stated in §§ 63.6600 and 63.6640, you must comply with the following emission limitations at 100 percent load plus or minus 10 percent for existing, new and reconstructed 4SRB stationary RICE >500 HP located at a major source of HAP emissions:

For each . . .	**You must meet the following emission limitation, except during periods of startup . . .**	**During periods of startup you must . . .**
1. 4SRB stationary RICE	a. Reduce formaldehyde emissions by 76 percent or more. If you commenced construction or reconstruction between December 19, 2002 and June 15, 2004, you may reduce formaldehyde emissions by 75 percent or more until June 15, 2007 or	Minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply.[1]
	b. Limit the concentration of formaldehyde in the stationary RICE exhaust to 350 ppbvd or less at 15 percent O_2	

[1]Sources can petition the Administrator pursuant to the requirements of 40 CFR 63.6(g) for alternative work practices.

[75 FR 9679, Mar. 3, 2010, as amended at 75 FR 51592, Aug. 20, 2010]

Table 1b to Subpart ZZZZ of Part 63—Operating Limitations for Existing, New, and Reconstructed SI 4SRB Stationary RICE >500 HP Located at a Major Source of HAP Emissions

As stated in §§ 63.6600, 63.6603, 63.6630 and 63.6640, you must comply with the following operating limitations for existing, new and reconstructed 4SRB stationary RICE >500 HP located at a major source of HAP emissions:

TABLE 1B TO SUBPART ZZZZ OF PART 63—OPERATING LIMITATIONS FOR EXISTING, NEW, AND RECONSTRUCTED SI 4SRB STATIONARY RICE >500 HP LOCATED AT A MAJOR SOURCE OF HAP EMISSIONS

For each . . .	You must meet the following operating limitation, except during periods of startup . . .
1. existing, new and reconstructed 4SRB stationary RICE >500 HP located at a major source of HAP emissions complying with the requirement to reduce formaldehyde emissions by 76 percent or more (or by 75 percent or more, if applicable) and using NSCR; or existing, new and reconstructed 4SRB stationary RICE >500 HP located at a major source of HAP emissions complying with the requirement to limit the concentration of formaldehyde in the stationary RICE exhaust to 350 ppbvd or less at 15 percent $O_2$and using NSCR;	a. maintain your catalyst so that the pressure drop across the catalyst does not change by more than 2 inches of water at 100 percent load plus or minus 10 percent from the pressure drop across the catalyst measured during the initial performance test; and b. maintain the temperature of your stationary RICE exhaust so that the catalyst inlet temperature is greater than or equal to 750 °F and less than or equal to 1250 °F.[1]
2. existing, new and reconstructed 4SRB stationary RICE >500 HP located at a major source of HAP emissions complying with the requirement to reduce formaldehyde emissions by 76 percent or more (or by 75 percent or more, if applicable) and not using NSCR; or	Comply with any operating limitations approved by the Administrator.
existing, new and reconstructed 4SRB stationary RICE >500 HP located at a major source of HAP emissions complying with the requirement to limit the concentration of formaldehyde in the stationary RICE exhaust to 350 ppbvd or less at 15 percent $O_2$and not using NSCR.	

[1] Sources can petition the Administrator pursuant to the requirements of 40 CFR 63.8(f) for a different temperature range.

[78 FR 6706, Jan. 30, 2013]

Table 2a to Subpart ZZZZ of Part 63—Emission Limitations for New and Reconstructed 2SLB and Compression Ignition Stationary RICE >500 HP and New and Reconstructed 4SLB Stationary RICE ≥250 HP Located at a Major Source of HAP Emissions

As stated in §§ 63.6600 and 63.6640, you must comply with the following emission limitations for new and reconstructed lean burn and new and reconstructed compression ignition stationary RICE at 100 percent load plus or minus 10 percent:

For each . . .	You must meet the following emission limitation, except during periods of startup . . .	During periods of startup you must . . .
1. 2SLB stationary RICE	a. Reduce CO emissions by 58 percent or more; or b. Limit concentration of formaldehyde in the stationary RICE exhaust to 12 ppmvd or less at 15 percent O_2. If you commenced construction or reconstruction between December 19, 2002 and June 15, 2004, you may limit concentration of formaldehyde to 17 ppmvd or less at 15 percent O_2until June 15, 2007	Minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply.[1]
2. 4SLB stationary RICE	a. Reduce CO emissions by 93 percent or more; or	
	b. Limit concentration of formaldehyde in the stationary RICE exhaust to 14 ppmvd or less at 15 percent O_2	
3. CI stationary RICE	a. Reduce CO emissions by 70 percent or more; or	
	b. Limit concentration of formaldehyde in the stationary RICE exhaust to 580 ppbvd or less at 15 percent O_2	

[1] Sources can petition the Administrator pursuant to the requirements of 40 CFR 63.6(g) for alternative work practices.

[75 FR 9680, Mar. 3, 2010]

Table 2b to Subpart ZZZZ of Part 63—Operating Limitations for New and Reconstructed 2SLB and CI Stationary RICE >500 HP Located at a Major Source of HAP Emissions, New and Reconstructed 4SLB Stationary RICE ≥250 HP Located at a Major Source of HAP Emissions, Existing CI Stationary RICE >500 HP

As stated in §§ 63.6600, 63.6601, 63.6603, 63.6630, and 63.6640, you must comply with the following operating limitations for new and reconstructed 2SLB and CI stationary RICE >500 HP located at a major source of HAP emissions; new and reconstructed 4SLB stationary RICE ≥250 HP located at a major source of HAP emissions; and existing CI stationary RICE >500 HP:

TABLE 2B TO SUBPART ZZZZ OF PART 63—OPERATING LIMITATIONS FOR NEW AND RECONSTRUCTED 2SLB AND CI STATIONARY RICE >500 HP LOCATED AT A MAJOR SOURCE OF HAP EMISSIONS, NEW AND RECONSTRUCTED 4SLB STATIONARY RICE ≥250 HP LOCATED AT A MAJOR SOURCE OF HAP EMISSIONS, EXISTING CI STATIONARY RICE >500 HP

For each . . .	You must meet the following operating limitation, except during periods of startup . . .
1. New and reconstructed 2SLB and CI stationary RICE >500 HP located at a major source of HAP emissions and new and reconstructed 4SLB stationary RICE ≥250 HP located at a major source of HAP emissions complying with the requirement to reduce CO emissions and using an oxidation catalyst; and New and reconstructed 2SLB and CI stationary RICE >500 HP located at a major source of HAP emissions and new and reconstructed 4SLB stationary RICE ≥250 HP located at a major source of HAP emissions complying with the requirement to limit the concentration of formaldehyde in the stationary RICE exhaust and using an oxidation catalyst.	a. maintain your catalyst so that the pressure drop across the catalyst does not change by more than 2 inches of water at 100 percent load plus or minus 10 percent from the pressure drop across the catalyst that was measured during the initial performance test; and b. maintain the temperature of your stationary RICE exhaust so that the catalyst inlet temperature is greater than or equal to 450 °F and less than or equal to 1350 °F.[1]
2. Existing CI stationary RICE >500 HP complying with the requirement to limit or reduce the concentration of CO in the stationary RICE exhaust and using an oxidation catalyst	a. maintain your catalyst so that the pressure drop across the catalyst does not change by more than 2 inches of water from the pressure drop across the catalyst that was measured during the initial performance test; and
	b. maintain the temperature of your stationary RICE exhaust so that the catalyst inlet temperature is greater than or equal to 450 °F and less than or equal to 1350 °F.[1]
3. New and reconstructed 2SLB and CI stationary RICE >500 HP located at a major source of HAP emissions and new and reconstructed 4SLB stationary RICE ≥250 HP located at a major source of HAP emissions complying with the requirement to reduce CO emissions and not using an oxidation catalyst; and	Comply with any operating limitations approved by the Administrator.

For each . . .	You must meet the following operating limitation, except during periods of startup . . .
New and reconstructed 2SLB and CI stationary RICE >500 HP located at a major source of HAP emissions and new and reconstructed 4SLB stationary RICE ≥250 HP located at a major source of HAP emissions complying with the requirement to limit the concentration of formaldehyde in the stationary RICE exhaust and not using an oxidation catalyst; and	
existing CI stationary RICE >500 HP complying with the requirement to limit or reduce the concentration of CO in the stationary RICE exhaust and not using an oxidation catalyst.	

[1] Sources can petition the Administrator pursuant to the requirements of 40 CFR 63.8(f) for a different temperature range.

[78 FR 6707, Jan. 30, 2013]

Table 2c to Subpart ZZZZ of Part 63—Requirements for Existing Compression Ignition Stationary RICE Located at a Major Source of HAP Emissions and Existing Spark Ignition Stationary RICE ≤500 HP Located at a Major Source of HAP Emissions

As stated in §§ 63.6600, 63.6602, and 63.6640, you must comply with the following requirements for existing compression ignition stationary RICE located at a major source of HAP emissions and existing spark ignition stationary RICE ≤500 HP located at a major source of HAP emissions:

TABLE 2C TO SUBPART ZZZZ OF PART 63—REQUIREMENTS FOR EXISTING COMPRESSION IGNITION STATIONARY RICE LOCATED AT A MAJOR SOURCE OF HAP EMISSIONS AND EXISTING SPARK IGNITION STATIONARY RICE ≤500 HP LOCATED AT A MAJOR SOURCE OF HAP EMISSIONS

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
1. Emergency stationary CI RICE and black start stationary CI RICE [1]	a. Change oil and filter every 500 hours of operation or annually, whichever comes first.[2] b. Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.[3]	Minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply.[3]
2. Non-Emergency, non-black start stationary CI RICE <100 HP	a. Change oil and filter every 1,000 hours of operation or annually, whichever comes first.[2] b. Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.[3]	
3. Non-Emergency, non-black start CI stationary RICE 100≤HP≤300 HP	Limit concentration of CO in the stationary RICE exhaust to 230 ppmvd or less at 15 percent O_2.	

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
4. Non-Emergency, non-black start CI stationary RICE 300>HP≤500." is corrected to read "4. Non-Emergency, non-black start CI stationary RICE 300<HP≤500.	a. Limit concentration of CO in the stationary RICE exhaust to 49 ppmvd or less at 15 percent O_2; or b. Reduce CO emissions by 70 percent or more.	
5. Non-Emergency, non-black start stationary CI RICE >500 HP	a. Limit concentration of CO in the stationary RICE exhaust to 23 ppmvd or less at 15 percent O_2; or b. Reduce CO emissions by 70 percent or more.	
6. Emergency stationary SI RICE and black start stationary SI RICE.[1]	a. Change oil and filter every 500 hours of operation or annually, whichever comes first;[2] b. Inspect spark plugs every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.[3]	
7. Non-Emergency, non-black start stationary SI RICE <100 HP that are not 2SLB stationary RICE	a. Change oil and filter every 1,440 hours of operation or annually, whichever comes first;[2] b. Inspect spark plugs every 1,440 hours of operation or annually, whichever comes first, and replace as necessary;	
	c. Inspect all hoses and belts every 1,440 hours of operation or annually, whichever comes first, and replace as necessary.[3]	

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
8. Non-Emergency, non-black start 2SLB stationary SI RICE <100 HP	a. Change oil and filter every 4,320 hours of operation or annually, whichever comes first;[2] b. Inspect spark plugs every 4,320 hours of operation or annually, whichever comes first, and replace as necessary;	
	c. Inspect all hoses and belts every 4,320 hours of operation or annually, whichever comes first, and replace as necessary.[3]	
9. Non-emergency, non-black start 2SLB stationary RICE 100≤HP≤500	Limit concentration of CO in the stationary RICE exhaust to 225 ppmvd or less at 15 percent O_2.	
10. Non-emergency, non-black start 4SLB stationary RICE 100≤HP≤500	Limit concentration of CO in the stationary RICE exhaust to 47 ppmvd or less at 15 percent O_2.	
11. Non-emergency, non-black start 4SRB stationary RICE 100≤HP≤500	Limit concentration of formaldehyde in the stationary RICE exhaust to 10.3 ppmvd or less at 15 percent O_2.	
12. Non-emergency, non-black start stationary RICE 100≤HP≤500 which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis	Limit concentration of CO in the stationary RICE exhaust to 177 ppmvd or less at 15 percent O_2.	

[1] If an emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the work practice requirements on the schedule required in Table 2c of this subpart, or if performing the work practice on the required schedule would otherwise pose an unacceptable risk under federal, state, or local law, the work practice can be delayed until the emergency is over or the unacceptable risk under federal, state, or local law has abated. The work practice should be performed as soon as practicable after the emergency has ended or the unacceptable risk under federal, state, or local law has abated. Sources must report any failure to perform the work practice on the schedule required and the federal, state or local law under which the risk was deemed unacceptable.

[2] Sources have the option to utilize an oil analysis program as described in § 63.6625(i) or (j) in order to extend the specified oil change requirement in Table 2c of this subpart.

[3] Sources can petition the Administrator pursuant to the requirements of 40 CFR 63.6(g) for alternative work practices.

[78 FR 6708, Jan. 30, 2013, as amended at 78 FR 14457, Mar. 6, 2013]

Table 2d to Subpart ZZZZ of Part 63—Requirements for Existing Stationary RICE Located at Area Sources of HAP Emissions

As stated in §§ 63.6603 and 63.6640, you must comply with the following requirements for existing stationary RICE located at area sources of HAP emissions:

TABLE 2D TO SUBPART ZZZZ OF PART 63—REQUIREMENTS FOR EXISTING STATIONARY RICE LOCATED AT AREA SOURCES OF HAP EMISSIONS

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
1. Non-Emergency, non-black start CI stationary RICE ≤300 HP	a. Change oil and filter every 1,000 hours of operation or annually, whichever comes first;[1] b. Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.	Minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply.
2. Non-Emergency, non-black start CI stationary RICE 300<HP≤500	a. Limit concentration of CO in the stationary RICE exhaust to 49 ppmvd at 15 percent O_2; or	
	b. Reduce CO emissions by 70 percent or more.	
3. Non-Emergency, non-black start CI stationary RICE >500 HP	a. Limit concentration of CO in the stationary RICE exhaust to 23 ppmvd at 15 percent O_2; or	
	b. Reduce CO emissions by 70 percent or more.	

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
4. Emergency stationary CI RICE and black start stationary CI RICE.[2]	a. Change oil and filter every 500 hours of operation or annually, whichever comes first;[1]	
	b. Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; and	
	c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.	
5. Emergency stationary SI RICE; black start stationary SI RICE; non-emergency, non-black start 4SLB stationary RICE >500 HP that operate 24 hours or less per calendar year; non-emergency, non-black start 4SRB stationary RICE >500 HP that operate 24 hours or less per calendar year.[2]	a. Change oil and filter every 500 hours of operation or annually, whichever comes first;[1]; b. Inspect spark plugs every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; and c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.	
6. Non-emergency, non-black start 2SLB stationary RICE	a. Change oil and filter every 4,320 hours of operation or annually, whichever comes first;[1]	
	b. Inspect spark plugs every 4,320 hours of operation or annually, whichever comes first, and replace as necessary; and	

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
	c. Inspect all hoses and belts every 4,320 hours of operation or annually, whichever comes first, and replace as necessary.	
7. Non-emergency, non-black start 4SLB stationary RICE ≤500 HP	a. Change oil and filter every 1,440 hours of operation or annually, whichever comes first;[1]	
	b. Inspect spark plugs every 1,440 hours of operation or annually, whichever comes first, and replace as necessary; and	
	c. Inspect all hoses and belts every 1,440 hours of operation or annually, whichever comes first, and replace as necessary.	
8. Non-emergency, non-black start 4SLB remote stationary RICE >500 HP	a. Change oil and filter every 2,160 hours of operation or annually, whichever comes first;[1]	
	b. Inspect spark plugs every 2,160 hours of operation or annually, whichever comes first, and replace as necessary; and	
	c. Inspect all hoses and belts every 2,160 hours of operation or annually, whichever comes first, and replace as necessary.	
9. Non-emergency, non-black start 4SLB stationary RICE >500 HP that are not remote stationary RICE and that operate more than 24 hours per calendar year	Install an oxidation catalyst to reduce HAP emissions from the stationary RICE.	

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
10. Non-emergency, non-black start 4SRB stationary RICE ≤500 HP	a. Change oil and filter every 1,440 hours of operation or annually, whichever comes first;[1]	
	b. Inspect spark plugs every 1,440 hours of operation or annually, whichever comes first, and replace as necessary; and	
	c. Inspect all hoses and belts every 1,440 hours of operation or annually, whichever comes first, and replace as necessary.	
11. Non-emergency, non-black start 4SRB remote stationary RICE >500 HP	a. Change oil and filter every 2,160 hours of operation or annually, whichever comes first;[1]	
	b. Inspect spark plugs every 2,160 hours of operation or annually, whichever comes first, and replace as necessary; and	
	c. Inspect all hoses and belts every 2,160 hours of operation or annually, whichever comes first, and replace as necessary.	
12. Non-emergency, non-black start 4SRB stationary RICE >500 HP that are not remote stationary RICE and that operate more than 24 hours per calendar year	Install NSCR to reduce HAP emissions from the stationary RICE.	
13. Non-emergency, non-black start stationary RICE which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis	a. Change oil and filter every 1,440 hours of operation or annually, whichever comes first;[1] b. Inspect spark plugs every 1,440 hours of operation or annually, whichever comes first, and replace as necessary; and	

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
	c. Inspect all hoses and belts every 1,440 hours of operation or annually, whichever comes first, and replace as necessary.	

[1] Sources have the option to utilize an oil analysis program as described in § 63.6625(i) or (j) in order to extend the specified oil change requirement in Table 2d of this subpart.

[2] If an emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the management practice requirements on the schedule required in Table 2d of this subpart, or if performing the management practice on the required schedule would otherwise pose an unacceptable risk under federal, state, or local law, the management practice can be delayed until the emergency is over or the unacceptable risk under federal, state, or local law has abated. The management practice should be performed as soon as practicable after the emergency has ended or the unacceptable risk under federal, state, or local law has abated. Sources must report any failure to perform the management practice on the schedule required and the federal, state or local law under which the risk was deemed unacceptable.

[78 FR 6709, Jan. 30, 2013]

Table 3 to Subpart ZZZZ of Part 63—Subsequent Performance Tests

As stated in §§ 63.6615 and 63.6620, you must comply with the following subsequent performance test requirements:

TABLE 3 TO SUBPART ZZZZ OF PART 63—SUBSEQUENT PERFORMANCE TESTS

For each . . .	Complying with the requirement to . . .	You must . . .
1. New or reconstructed 2SLB stationary RICE >500 HP located at major sources; new or reconstructed 4SLB stationary RICE ≥250 HP located at major sources; and new or reconstructed CI stationary RICE >500 HP located at major sources	Reduce CO emissions and not using a CEMS	Conduct subsequent performance tests semiannually.[1]
2. 4SRB stationary RICE ≥5,000 HP located at major sources	Reduce formaldehyde emissions	Conduct subsequent performance tests semiannually.[1]
3. Stationary RICE >500 HP located at major sources and new or reconstructed 4SLB stationary RICE 250≤HP≤500 located at major sources	Limit the concentration of formaldehyde in the stationary RICE exhaust	Conduct subsequent performance tests semiannually.[1]
4. Existing non-emergency, non-black start CI stationary RICE >500 HP that are not limited use stationary RICE	Limit or reduce CO emissions and not using a CEMS	Conduct subsequent performance tests every 8,760 hours or 3 years, whichever comes first.
5. Existing non-emergency, non-black start CI stationary RICE >500 HP that are limited use stationary RICE	Limit or reduce CO emissions and not using a CEMS	Conduct subsequent performance tests every 8,760 hours or 5 years, whichever comes first.

[1] After you have demonstrated compliance for two consecutive tests, you may reduce the frequency of subsequent performance tests to annually. If the results of any subsequent annual performance test indicate the stationary RICE is not in compliance with the CO or formaldehyde emission limitation, or you deviate from any of your operating limitations, you must resume semiannual performance tests.

[78 FR 6711, Jan. 30, 2013]

Table 4 to Subpart ZZZZ of Part 63—Requirements for Performance Tests

As stated in §§ 63.6610, 63.6611, 63.6612, 63.6620, and 63.6640, you must comply with the following requirements for performance tests for stationary RICE:

TABLE 4 TO SUBPART ZZZZ OF PART 63. REQUIREMENTS FOR PERFORMANCE TESTS

For each . . .	Complying with the requirement to . . .	You must . . .	Using . . .	According to the following requirements . . .
1. 2SLB, 4SLB, and CI stationary RICE	a. reduce CO emissions	i. Measure the O_2 at the inlet and outlet of the control device; and	(1) Method 3 or 3A or 3B of 40 CFR part 60, appendix A, or ASTM Method D6522-00 (Reapproved 2005).[a c]	(a) Measurements to determine O_2 must be made at the same time as the measurements for CO concentration.
		ii. Measure the CO at the inlet and the outlet of the control device	(1) ASTM D6522-00 (Reapproved 2005) [a b c] or Method 10 of 40 CFR part 60, appendix A	(a) The CO concentration must be at 15 percent O_2, dry basis.
2. 4SRB stationary RICE	a. reduce formaldehyde emissions	i. Select the sampling port location and the number of traverse points; and	(1) Method 1 or 1A of 40 CFR part 60, appendix A § 63.7(d)(1)(i)	(a) sampling sites must be located at the inlet and outlet of the control device.
		ii. Measure O_2 at the inlet and outlet of the control device; and	(1) Method 3 or 3A or 3B of 40 CFR part 60, appendix A, or ASTM Method D6522-00 (Reapproved 2005).[a]	(a) measurements to determine O_2 concentration must be made at the same time as the measurements for formaldehyde or THC concentration.
		iii. Measure moisture content at the inlet and outlet of the control device; and	(1) Method 4 of 40 CFR part 60, appendix A, or Test Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348-03.[a]	(a) measurements to determine moisture content must be made at the same time and location as the measurements for formaldehyde or THC concentration.
		iv. If demonstrating compliance with the formaldehyde percent reduction requirement, measure formaldehyde at the inlet and the outlet of the control device	(1) Method 320 or 323 of 40 CFR part 63, appendix A; or ASTM D6348-03,[a] provided in ASTM D6348-03 Annex A5 (Analyte Spiking Technique), the percent R must be greater than or equal to 70 and less than or equal to 130	(a) formaldehyde concentration must be at 15 percent O_2, dry basis. Results of this test consist of the average of the three 1-hour or longer runs.

For each . . .	Complying with the requirement to . . .	You must . . .	Using . . .	According to the following requirements . . .
		v. If demonstrating compliance with the THC percent reduction requirement, measure THC at the inlet and the outlet of the control device	(1) Method 25A, reported as propane, of 40 CFR part 60, appendix A	(a) THC concentration must be at 15 percent O_2, dry basis. Results of this test consist of the average of the three 1-hour or longer runs.
3. Stationary RICE	a. limit the concentration of formaldehyde or CO in the stationary RICE exhaust	i. Select the sampling port location and the number of traverse points; and	(1) Method 1 or 1A of 40 CFR part 60, appendix A § 63.7(d)(1)(i)	(a) if using a control device, the sampling site must be located at the outlet of the control device.
		ii. Determine the O_2concentration of the stationary RICE exhaust at the sampling port location; and	(1) Method 3 or 3A or 3B of 40 CFR part 60, appendix A, or ASTM Method D6522-00 (Reapproved 2005).[a]	(a) measurements to determine O_2concentration must be made at the same time and location as the measurements for formaldehyde or CO concentration.
		iii. Measure moisture content of the stationary RICE exhaust at the sampling port location; and	(1) Method 4 of 40 CFR part 60, appendix A, or Test Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348-03.[a]	(a) measurements to determine moisture content must be made at the same time and location as the measurements for formaldehyde or CO concentration.
		iv. Measure formaldehyde at the exhaust of the stationary RICE; or	(1) Method 320 or 323 of 40 CFR part 63, appendix A; or ASTM D6348-03,[a]provided in ASTM D6348-03 Annex A5 (Analyte Spiking Technique), the percent R must be greater than or equal to 70 and less than or equal to 130	(a) Formaldehyde concentration must be at 15 percent O_2, dry basis. Results of this test consist of the average of the three 1-hour or longer runs.
		v. measure CO at the exhaust of the stationary RICE.	(1) Method 10 of 40 CFR part 60, appendix A, ASTM Method D6522-00 (2005),[a] [c]Method 320 of 40 CFR part 63, appendix A, or ASTM D6348-03.[a]	(a) CO concentration must be at 15 percent O_2, dry basis. Results of this test consist of the average of the three 1-hour or longer runs.

[a] Incorporated by reference, see 40 CFR 63.14. You may also obtain copies from University Microfilms International, 300 North Zeeb Road, Ann Arbor, MI 48106.

[b] You may also use Method 320 of 40 CFR part 63, appendix A, or ASTM D6348-03.

[c] ASTM-D6522-00 (2005) may be used to test both CI and SI stationary RICE.

[78 FR 6711, Jan. 30, 2013]

Table 5 to Subpart ZZZZ of Part 63—Initial Compliance With Emission Limitations, Operating Limitations, and Other Requirements

As stated in §§ 63.6612, 63.6625 and 63.6630, you must initially comply with the emission and operating limitations as required by the following:

TABLE 5 TO SUBPART ZZZZ OF PART 63—INITIAL COMPLIANCE WITH EMISSION LIMITATIONS, OPERATING LIMITATIONS, AND OTHER REQUIREMENTS

For each . . .	Complying with the requirement to . . .	You have demonstrated initial compliance if . . .
1. New or reconstructed non-emergency 2SLB stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE ≥250 HP located at a major source of HAP, non-emergency stationary CI RICE >500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE >500 HP located at an area source of HAP	a. Reduce CO emissions and using oxidation catalyst, and using a CPMS	i. The average reduction of emissions of CO determined from the initial performance test achieves the required CO percent reduction; and ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in § 63.6625(b); and iii. You have recorded the catalyst pressure drop and catalyst inlet temperature during the initial performance test.
2. Non-emergency stationary CI RICE >500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE >500 HP located at an area source of HAP	a. Limit the concentration of CO, using oxidation catalyst, and using a CPMS	i. The average CO concentration determined from the initial performance test is less than or equal to the CO emission limitation; and
		ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in § 63.6625(b); and
		iii. You have recorded the catalyst pressure drop and catalyst inlet temperature during the initial performance test.

For each . . .	Complying with the requirement to . . .	You have demonstrated initial compliance if . . .
3. New or reconstructed non-emergency 2SLB stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE ≥250 HP located at a major source of HAP, non-emergency stationary CI RICE >500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE >500 HP located at an area source of HAP	a. Reduce CO emissions and not using oxidation catalyst	i. The average reduction of emissions of CO determined from the initial performance test achieves the required CO percent reduction; and ii. You have installed a CPMS to continuously monitor operating parameters approved by the Administrator (if any) according to the requirements in § 63.6625(b); and iii. You have recorded the approved operating parameters (if any) during the initial performance test.
4. Non-emergency stationary CI RICE >500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE >500 HP located at an area source of HAP	a. Limit the concentration of CO, and not using oxidation catalyst	i. The average CO concentration determined from the initial performance test is less than or equal to the CO emission limitation; and ii. You have installed a CPMS to continuously monitor operating parameters approved by the Administrator (if any) according to the requirements in § 63.6625(b); and
		iii. You have recorded the approved operating parameters (if any) during the initial performance test.
5. New or reconstructed non-emergency 2SLB stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE ≥250 HP located at a major source of HAP, non-emergency stationary CI RICE >500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE >500 HP located at an area source of HAP	a. Reduce CO emissions, and using a CEMS	i. You have installed a CEMS to continuously monitor CO and either O_2or CO_2at both the inlet and outlet of the oxidation catalyst according to the requirements in § 63.6625(a); and ii. You have conducted a performance evaluation of your CEMS using PS 3 and 4A of 40 CFR part 60, appendix B; and
		iii. The average reduction of CO calculated using § 63.6620 equals or exceeds the required percent reduction. The initial test comprises the first 4-hour period after successful validation of the CEMS. Compliance is based on the average percent reduction achieved during the 4-hour period.
6. Non-emergency stationary CI RICE >500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE >500 HP located at an area source of HAP	a. Limit the concentration of CO, and using a CEMS	i. You have installed a CEMS to continuously monitor CO and either O_2or CO_2at the outlet of the oxidation catalyst according to the requirements in § 63.6625(a); and

For each . . .	Complying with the requirement to . . .	You have demonstrated initial compliance if . . .
		ii. You have conducted a performance evaluation of your CEMS using PS 3 and 4A of 40 CFR part 60, appendix B; and
		iii. The average concentration of CO calculated using § 63.6620 is less than or equal to the CO emission limitation. The initial test comprises the first 4-hour period after successful validation of the CEMS. Compliance is based on the average concentration measured during the 4-hour period.
7. Non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP	a. Reduce formaldehyde emissions and using NSCR	i. The average reduction of emissions of formaldehyde determined from the initial performance test is equal to or greater than the required formaldehyde percent reduction, or the average reduction of emissions of THC determined from the initial performance test is equal to or greater than 30 percent; and
		ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in § 63.6625(b); and
		iii. You have recorded the catalyst pressure drop and catalyst inlet temperature during the initial performance test.
8. Non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP	a. Reduce formaldehyde emissions and not using NSCR	i. The average reduction of emissions of formaldehyde determined from the initial performance test is equal to or greater than the required formaldehyde percent reduction or the average reduction of emissions of THC determined from the initial performance test is equal to or greater than 30 percent; and
		ii. You have installed a CPMS to continuously monitor operating parameters approved by the Administrator (if any) according to the requirements in § 63.6625(b); and
		iii. You have recorded the approved operating parameters (if any) during the initial performance test.

For each . . .	Complying with the requirement to . . .	You have demonstrated initial compliance if . . .
9. New or reconstructed non-emergency stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE 250≤HP≤500 located at a major source of HAP, and existing non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP	a. Limit the concentration of formaldehyde in the stationary RICE exhaust and using oxidation catalyst or NSCR	i. The average formaldehyde concentration, corrected to 15 percent O_2, dry basis, from the three test runs is less than or equal to the formaldehyde emission limitation; and ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in § 63.6625(b); and
		iii. You have recorded the catalyst pressure drop and catalyst inlet temperature during the initial performance test.
10. New or reconstructed non-emergency stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE 250≤HP≤500 located at a major source of HAP, and existing non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP	a. Limit the concentration of formaldehyde in the stationary RICE exhaust and not using oxidation catalyst or NSCR	i. The average formaldehyde concentration, corrected to 15 percent O_2, dry basis, from the three test runs is less than or equal to the formaldehyde emission limitation; and ii. You have installed a CPMS to continuously monitor operating parameters approved by the Administrator (if any) according to the requirements in § 63.6625(b); and
		iii. You have recorded the approved operating parameters (if any) during the initial performance test.
11. Existing non-emergency stationary RICE 100≤HP≤500 located at a major source of HAP, and existing non-emergency stationary CI RICE 300<HP≤500 located at an area source of HAP	a. Reduce CO emissions	i. The average reduction of emissions of CO or formaldehyde, as applicable determined from the initial performance test is equal to or greater than the required CO or formaldehyde, as applicable, percent reduction.
12. Existing non-emergency stationary RICE 100≤HP≤500 located at a major source of HAP, and existing non-emergency stationary CI RICE 300<HP≤500 located at an area source of HAP	a. Limit the concentration of formaldehyde or CO in the stationary RICE exhaust	i. The average formaldehyde or CO concentration, as applicable, corrected to 15 percent O_2, dry basis, from the three test runs is less than or equal to the formaldehyde or CO emission limitation, as applicable.
13. Existing non-emergency 4SLB stationary RICE >500 HP located at an area source of HAP that are not remote stationary RICE and that are operated more than 24 hours per calendar year	a. Install an oxidation catalyst	i. You have conducted an initial compliance demonstration as specified in § 63.6630(e) to show that the average reduction of emissions of CO is 93 percent or more, or the average CO concentration is less than or equal to 47 ppmvd at 15 percent O_2;

For each . . .	Complying with the requirement to . . .	You have demonstrated initial compliance if . . .
		ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in § 63.6625(b), or you have installed equipment to automatically shut down the engine if the catalyst inlet temperature exceeds 1350 °F.
14. Existing non-emergency 4SRB stationary RICE >500 HP located at an area source of HAP that are not remote stationary RICE and that are operated more than 24 hours per calendar year	a. Install NSCR	i. You have conducted an initial compliance demonstration as specified in § 63.6630(e) to show that the average reduction of emissions of CO is 75 percent or more, the average CO concentration is less than or equal to 270 ppmvd at 15 percent O_2, or the average reduction of emissions of THC is 30 percent or more;
		ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in § 63.6625(b), or you have installed equipment to automatically shut down the engine if the catalyst inlet temperature exceeds 1250 °F.

[78 FR 6712, Jan. 30, 2013]

Table 6 to Subpart ZZZZ of Part 63—Continuous Compliance With Emission Limitations, and Other Requirements

As stated in § 63.6640, you must continuously comply with the emissions and operating limitations and work or management practices as required by the following:

TABLE 6 TO SUBPART ZZZZ OF PART 63—CONTINUOUS COMPLIANCE WITH EMISSION LIMITATIONS, AND OTHER REQUIREMENTS

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
1. New or reconstructed non-emergency 2SLB stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE ≥250 HP located at a major source of HAP, and new or reconstructed non-emergency CI stationary RICE >500 HP located at a major source of HAP	a. Reduce CO emissions and using an oxidation catalyst, and using a CPMS	i. Conducting semiannual performance tests for CO to demonstrate that the required CO percent reduction is achieved [a]; and ii. Collecting the catalyst inlet temperature data according to § 63.6625(b); and iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and
		v. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.
2. New or reconstructed non-emergency 2SLB stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE ≥250 HP located at a major source of HAP, and new or reconstructed non-emergency CI stationary RICE >500 HP located at a major source of HAP	a. Reduce CO emissions and not using an oxidation catalyst, and using a CPMS	i. Conducting semiannual performance tests for CO to demonstrate that the required CO percent reduction is achieved [a]; and ii. Collecting the approved operating parameter (if any) data according to § 63.6625(b); and iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the operating parameters established during the performance test.

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
3. New or reconstructed non-emergency 2SLB stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE ≥250 HP located at a major source of HAP, new or reconstructed non-emergency stationary CI RICE >500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE >500 HP	a. Reduce CO emissions or limit the concentration of CO in the stationary RICE exhaust, and using a CEMS	i. Collecting the monitoring data according to § 63.6625(a), reducing the measurements to 1-hour averages, calculating the percent reduction or concentration of CO emissions according to § 63.6620; and ii. Demonstrating that the catalyst achieves the required percent reduction of CO emissions over the 4-hour averaging period, or that the emission remain at or below the CO concentration limit; and
		iii. Conducting an annual RATA of your CEMS using PS 3 and 4A of 40 CFR part 60, appendix B, as well as daily and periodic data quality checks in accordance with 40 CFR part 60, appendix F, procedure 1.
4. Non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP	a. Reduce formaldehyde emissions and using NSCR	i. Collecting the catalyst inlet temperature data according to § 63.6625(b); and
		ii. Reducing these data to 4-hour rolling averages; and
		iii. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and
		iv. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.
5. Non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP	a. Reduce formaldehyde emissions and not using NSCR	i. Collecting the approved operating parameter (if any) data according to § 63.6625(b); and
		ii. Reducing these data to 4-hour rolling averages; and
		iii. Maintaining the 4-hour rolling averages within the operating limitations for the operating parameters established during the performance test.

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
6. Non-emergency 4SRB stationary RICE with a brake HP ≥5,000 located at a major source of HAP	a. Reduce formaldehyde emissions	Conducting semiannual performance tests for formaldehyde to demonstrate that the required formaldehyde percent reduction is achieved, or to demonstrate that the average reduction of emissions of THC determined from the performance test is equal to or greater than 30 percent.[a]
7. New or reconstructed non-emergency stationary RICE >500 HP located at a major source of HAP and new or reconstructed non-emergency 4SLB stationary RICE 250≤HP≤500 located at a major source of HAP	a. Limit the concentration of formaldehyde in the stationary RICE exhaust and using oxidation catalyst or NSCR	i. Conducting semiannual performance tests for formaldehyde to demonstrate that your emissions remain at or below the formaldehyde concentration limit [a]; and ii. Collecting the catalyst inlet temperature data according to § 63.6625(b); and
		iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and
		v. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.
8. New or reconstructed non-emergency stationary RICE >500 HP located at a major source of HAP and new or reconstructed non-emergency 4SLB stationary RICE 250≤HP≤500 located at a major source of HAP	a. Limit the concentration of formaldehyde in the stationary RICE exhaust and not using oxidation catalyst or NSCR	i. Conducting semiannual performance tests for formaldehyde to demonstrate that your emissions remain at or below the formaldehyde concentration limit [a]; and ii. Collecting the approved operating parameter (if any) data according to § 63.6625(b); and
		iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the operating parameters established during the performance test.

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
9. Existing emergency and black start stationary RICE ≤500 HP located at a major source of HAP, existing non-emergency stationary RICE <100 HP located at a major source of HAP, existing emergency and black start stationary RICE located at an area source of HAP, existing non-emergency stationary CI RICE ≤300 HP located at an area source of HAP, existing non-emergency 2SLB stationary RICE located at an area source of HAP, existing non-emergency stationary SI RICE located at an area source of HAP which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, existing non-emergency 4SLB and 4SRB stationary RICE ≤500 HP located at an area source of HAP, existing non-emergency 4SLB and 4SRB stationary RICE >500 HP located at an area source of HAP that operate 24 hours or less per calendar year, and existing non-emergency 4SLB and 4SRB stationary RICE >500 HP located at an area source of HAP that are remote stationary RICE	a. Work or Management practices	i. Operating and maintaining the stationary RICE according to the manufacturer's emission-related operation and maintenance instructions; or ii. Develop and follow your own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions.
10. Existing stationary CI RICE >500 HP that are not limited use stationary RICE	a. Reduce CO emissions, or limit the concentration of CO in the stationary RICE exhaust, and using oxidation catalyst	i. Conducting performance tests every 8,760 hours or 3 years, whichever comes first, for CO or formaldehyde, as appropriate, to demonstrate that the required CO or formaldehyde, as appropriate, percent reduction is achieved or that your emissions remain at or below the CO or formaldehyde concentration limit; and
		ii. Collecting the catalyst inlet temperature data according to § 63.6625(b); and
		iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
		v. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.
11. Existing stationary CI RICE >500 HP that are not limited use stationary RICE	a. Reduce CO emissions, or limit the concentration of CO in the stationary RICE exhaust, and not using oxidation catalyst	i. Conducting performance tests every 8,760 hours or 3 years, whichever comes first, for CO or formaldehyde, as appropriate, to demonstrate that the required CO or formaldehyde, as appropriate, percent reduction is achieved or that your emissions remain at or below the CO or formaldehyde concentration limit; and
		ii. Collecting the approved operating parameter (if any) data according to § 63.6625(b); and
		iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the operating parameters established during the performance test.
12. Existing limited use CI stationary RICE >500 HP	a. Reduce CO emissions or limit the concentration of CO in the stationary RICE exhaust, and using an oxidation catalyst	i. Conducting performance tests every 8,760 hours or 5 years, whichever comes first, for CO or formaldehyde, as appropriate, to demonstrate that the required CO or formaldehyde, as appropriate, percent reduction is achieved or that your emissions remain at or below the CO or formaldehyde concentration limit; and
		ii. Collecting the catalyst inlet temperature data according to § 63.6625(b); and
		iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
		v. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.
13. Existing limited use CI stationary RICE >500 HP	a. Reduce CO emissions or limit the concentration of CO in the stationary RICE exhaust, and not using an oxidation catalyst	i. Conducting performance tests every 8,760 hours or 5 years, whichever comes first, for CO or formaldehyde, as appropriate, to demonstrate that the required CO or formaldehyde, as appropriate, percent reduction is achieved or that your emissions remain at or below the CO or formaldehyde concentration limit; and
		ii. Collecting the approved operating parameter (if any) data according to § 63.6625(b); and
		iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the operating parameters established during the performance test.
14. Existing non-emergency 4SLB stationary RICE >500 HP located at an area source of HAP that are not remote stationary RICE and that are operated more than 24 hours per calendar year	a. Install an oxidation catalyst	i. Conducting annual compliance demonstrations as specified in § 63.6640(c) to show that the average reduction of emissions of CO is 93 percent or more, or the average CO concentration is less than or equal to 47 ppmvd at 15 percent O_2; and either ii. Collecting the catalyst inlet temperature data according to § 63.6625(b), reducing these data to 4-hour rolling averages; and maintaining the 4-hour rolling averages within the limitation of greater than 450 °F and less than or equal to 1350 °F for the catalyst inlet temperature; or iii. Immediately shutting down the engine if the catalyst inlet temperature exceeds 1350 °F.

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
15. Existing non-emergency 4SRB stationary RICE >500 HP located at an area source of HAP that are not remote stationary RICE and that are operated more than 24 hours per calendar year	a. Install NSCR	i. Conducting annual compliance demonstrations as specified in § 63.6640(c) to show that the average reduction of emissions of CO is 75 percent or more, the average CO concentration is less than or equal to 270 ppmvd at 15 percent $O_{2,}$or the average reduction of emissions of THC is 30 percent or more; and either ii. Collecting the catalyst inlet temperature data according to § 63.6625(b), reducing these data to 4-hour rolling averages; and maintaining the 4-hour rolling averages within the limitation of greater than or equal to 750 °F and less than or equal to 1250 °F for the catalyst inlet temperature; or iii. Immediately shutting down the engine if the catalyst inlet temperature exceeds 1250 °F.

[a] After you have demonstrated compliance for two consecutive tests, you may reduce the frequency of subsequent performance tests to annually. If the results of any subsequent annual performance test indicate the stationary RICE is not in compliance with the CO or formaldehyde emission limitation, or you deviate from any of your operating limitations, you must resume semiannual performance tests.

[78 FR 6715, Jan. 30, 2013]

Table 7 to Subpart ZZZZ of Part 63—Requirements for Reports

As stated in § 63.6650, you must comply with the following requirements for reports:

TABLE 7 TO SUBPART ZZZZ OF PART 63—REQUIREMENTS FOR REPORTS

For each . . .	You must submit a . . .	The report must contain . . .	You must submit the report . . .
1. Existing non-emergency, non-black start stationary RICE 100≤HP≤500 located at a major source of HAP; existing non-emergency, non-black start stationary CI RICE >500 HP located at a major source of HAP; existing non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP; existing non-emergency, non-black start stationary CI RICE >300 HP located at an area source of HAP; new or reconstructed non-emergency stationary RICE >500 HP located at a major source of HAP; and new or reconstructed non-emergency 4SLB stationary RICE 250≤HP≤500 located at a major source of HAP	Compliance report	a. If there are no deviations from any emission limitations or operating limitations that apply to you, a statement that there were no deviations from the emission limitations or operating limitations during the reporting period. If there were no periods during which the CMS, including CEMS and CPMS, was out-of-control, as specified in § 63.8(c)(7), a statement that there were not periods during which the CMS was out-of-control during the reporting period; or	i. Semiannually according to the requirements in § 63.6650(b)(1)-(5) for engines that are not limited use stationary RICE subject to numerical emission limitations; and ii. Annually according to the requirements in § 63.6650(b)(6)-(9) for engines that are limited use stationary RICE subject to numerical emission limitations.
		b. If you had a deviation from any emission limitation or operating limitation during the reporting period, the information in § 63.6650(d). If there were periods during which the CMS, including CEMS and CPMS, was out-of-control, as specified in § 63.8(c)(7), the information in § 63.6650(e); or	i. Semiannually according to the requirements in § 63.6650(b).
		c. If you had a malfunction during the reporting period, the information in § 63.6650(c)(4).	i. Semiannually according to the requirements in § 63.6650(b).
2. New or reconstructed non-emergency stationary RICE that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis	Report	a. The fuel flow rate of each fuel and the heating values that were used in your calculations, and you must demonstrate that the percentage of heat input provided by landfill gas or digester gas, is equivalent to 10 percent or more of the gross heat input on an annual basis; and	i. Annually, according to the requirements in § 63.6650.

For each . . .	You must submit a . . .	The report must contain . . .	You must submit the report . . .
		b. The operating limits provided in your federally enforceable permit, and any deviations from these limits; and	i. See item 2.a.i.
		c. Any problems or errors suspected with the meters.	i. See item 2.a.i.
3. Existing non-emergency, non-black start 4SLB and 4SRB stationary RICE >500 HP located at an area source of HAP that are not remote stationary RICE and that operate more than 24 hours per calendar year	Compliance report	a. The results of the annual compliance demonstration, if conducted during the reporting period.	i. Semiannually according to the requirements in § 63.6650(b)(1)-(5).
4. Emergency stationary RICE that operate or are contractually obligated to be available for more than 15 hours per year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) or that operate for the purposes specified in § 63.6640(f)(4)(ii)	Report	a. The information in § 63.6650(h)(1)	i. annually according to the requirements in § 63.6650(h)(2)-(3).

[78 FR 6719, Jan. 30, 2013]

Table 8 to Subpart ZZZZ of Part 63—Applicability of General Provisions to Subpart ZZZZ.

As stated in § 63.6665, you must comply with the following applicable general provisions.

General provisions citation	Subject of citation	Applies to subpart	Explanation
§ 63.1	General applicability of the General Provisions	Yes.	
§ 63.2	Definitions	Yes	Additional terms defined in § 63.6675.
§ 63.3	Units and abbreviations	Yes.	
§ 63.4	Prohibited activities and circumvention	Yes.	
§ 63.5	Construction and reconstruction	Yes.	
§ 63.6(a)	Applicability	Yes.	
§ 63.6(b)(1)-(4)	Compliance dates for new and reconstructed sources	Yes.	
§ 63.6(b)(5)	Notification	Yes.	
§ 63.6(b)(6)	[Reserved]		
§ 63.6(b)(7)	Compliance dates for new and reconstructed area sources that become major sources	Yes.	
§ 63.6(c)(1)-(2)	Compliance dates for existing sources	Yes.	
§ 63.6(c)(3)-(4)	[Reserved]		
§ 63.6(c)(5)	Compliance dates for existing area sources that become major sources	Yes.	
§ 63.6(d)	[Reserved]		
§ 63.6(e)	Operation and maintenance	No.	
§ 63.6(f)(1)	Applicability of standards	No.	
§ 63.6(f)(2)	Methods for determining compliance	Yes.	
§ 63.6(f)(3)	Finding of compliance	Yes.	
§ 63.6(g)(1)-(3)	Use of alternate standard	Yes.	
§ 63.6(h)	Opacity and visible emission standards	No	Subpart ZZZZ does not contain opacity or visible emission standards.
§ 63.6(i)	Compliance extension procedures and criteria	Yes.	

General provisions citation	Subject of citation	Applies to subpart	Explanation
§ 63.6(j)	Presidential compliance exemption	Yes.	
§ 63.7(a)(1)-(2)	Performance test dates	Yes	Subpart ZZZZ contains performance test dates at §§ 63.6610, 63.6611, and 63.6612.
§ 63.7(a)(3)	CAA section 114 authority	Yes.	
§ 63.7(b)(1)	Notification of performance test	Yes	Except that § 63.7(b)(1) only applies as specified in § 63.6645.
§ 63.7(b)(2)	Notification of rescheduling	Yes	Except that § 63.7(b)(2) only applies as specified in § 63.6645.
§ 63.7(c)	Quality assurance/test plan	Yes	Except that § 63.7(c) only applies as specified in § 63.6645.
§ 63.7(d)	Testing facilities	Yes.	
§ 63.7(e)(1)	Conditions for conducting performance tests	No.	Subpart ZZZZ specifies conditions for conducting performance tests at § 63.6620.
§ 63.7(e)(2)	Conduct of performance tests and reduction of data	Yes	Subpart ZZZZ specifies test methods at § 63.6620.
§ 63.7(e)(3)	Test run duration	Yes.	
§ 63.7(e)(4)	Administrator may require other testing under section 114 of the CAA	Yes.	
§ 63.7(f)	Alternative test method provisions	Yes.	
§ 63.7(g)	Performance test data analysis, recordkeeping, and reporting	Yes.	
§ 63.7(h)	Waiver of tests	Yes.	
§ 63.8(a)(1)	Applicability of monitoring requirements	Yes	Subpart ZZZZ contains specific requirements for monitoring at § 63.6625.
§ 63.8(a)(2)	Performance specifications	Yes.	
§ 63.8(a)(3)	[Reserved]		
§ 63.8(a)(4)	Monitoring for control devices	No.	
§ 63.8(b)(1)	Monitoring	Yes.	
§ 63.8(b)(2)-(3)	Multiple effluents and multiple monitoring systems	Yes.	

General provisions citation	Subject of citation	Applies to subpart	Explanation
§ 63.8(c)(1)	Monitoring system operation and maintenance	Yes.	
§ 63.8(c)(1)(i)	Routine and predictable SSM	No	
§ 63.8(c)(1)(ii)	SSM not in Startup Shutdown Malfunction Plan	Yes.	
§ 63.8(c)(1)(iii)	Compliance with operation and maintenance requirements	No	
§ 63.8(c)(2)-(3)	Monitoring system installation	Yes.	
§ 63.8(c)(4)	Continuous monitoring system (CMS) requirements	Yes	Except that subpart ZZZZ does not require Continuous Opacity Monitoring System (COMS).
§ 63.8(c)(5)	COMS minimum procedures	No	Subpart ZZZZ does not require COMS.
§ 63.8(c)(6)-(8)	CMS requirements	Yes	Except that subpart ZZZZ does not require COMS.
§ 63.8(d)	CMS quality control	Yes.	
§ 63.8(e)	CMS performance evaluation	Yes	Except for § 63.8(e)(5)(ii), which applies to COMS.
		Except that § 63.8(e) only applies as specified in § 63.6645.	
§ 63.8(f)(1)-(5)	Alternative monitoring method	Yes	Except that § 63.8(f)(4) only applies as specified in § 63.6645.
§ 63.8(f)(6)	Alternative to relative accuracy test	Yes	Except that § 63.8(f)(6) only applies as specified in § 63.6645.
§ 63.8(g)	Data reduction	Yes	Except that provisions for COMS are not applicable. Averaging periods for demonstrating compliance are specified at §§ 63.6635 and 63.6640.
§ 63.9(a)	Applicability and State delegation of notification requirements	Yes.	
§ 63.9(b)(1)-(5)	Initial notifications	Yes	Except that § 63.9(b)(3) is reserved.

General provisions citation	Subject of citation	Applies to subpart	Explanation
		Except that § 63.9(b) only applies as specified in § 63.6645.	
§ 63.9(c)	Request for compliance extension	Yes	Except that § 63.9(c) only applies as specified in § 63.6645.
§ 63.9(d)	Notification of special compliance requirements for new sources	Yes	Except that § 63.9(d) only applies as specified in § 63.6645.
§ 63.9(e)	Notification of performance test	Yes	Except that § 63.9(e) only applies as specified in § 63.6645.
§ 63.9(f)	Notification of visible emission (VE)/opacity test	No	Subpart ZZZZ does not contain opacity or VE standards.
§ 63.9(g)(1)	Notification of performance evaluation	Yes	Except that § 63.9(g) only applies as specified in § 63.6645.
§ 63.9(g)(2)	Notification of use of COMS data	No	Subpart ZZZZ does not contain opacity or VE standards.
§ 63.9(g)(3)	Notification that criterion for alternative to RATA is exceeded	Yes	If alternative is in use.
		Except that § 63.9(g) only applies as specified in § 63.6645.	
§ 63.9(h)(1)-(6)	Notification of compliance status	Yes	Except that notifications for sources using a CEMS are due 30 days after completion of performance evaluations. § 63.9(h)(4) is reserved.
			Except that § 63.9(h) only applies as specified in § 63.6645.
§ 63.9(i)	Adjustment of submittal deadlines	Yes.	
§ 63.9(j)	Change in previous information	Yes.	
§ 63.10(a)	Administrative provisions for recordkeeping/reporting	Yes.	
§ 63.10(b)(1)	Record retention	Yes	Except that the most recent 2 years of data do not have to be retained on site.
§ 63.10(b)(2)(i)-(v)	Records related to SSM	No.	

General provisions citation	Subject of citation	Applies to subpart	Explanation
§ 63.10(b)(2)(vi)-(xi)	Records	Yes.	
§ 63.10(b)(2)(xii)	Record when under waiver	Yes.	
§ 63.10(b)(2)(xiii)	Records when using alternative to RATA	Yes	For CO standard if using RATA alternative.
§ 63.10(b)(2)(xiv)	Records of supporting documentation	Yes.	
§ 63.10(b)(3)	Records of applicability determination	Yes.	
§ 63.10(c)	Additional records for sources using CEMS	Yes	Except that § 63.10(c)(2)-(4) and (9) are reserved.
§ 63.10(d)(1)	General reporting requirements	Yes.	
§ 63.10(d)(2)	Report of performance test results	Yes.	
§ 63.10(d)(3)	Reporting opacity or VE observations	No	Subpart ZZZZ does not contain opacity or VE standards.
§ 63.10(d)(4)	Progress reports	Yes.	
§ 63.10(d)(5)	Startup, shutdown, and malfunction reports	No.	
§ 63.10(e)(1) and (2)(i)	Additional CMS Reports	Yes.	
§ 63.10(e)(2)(ii)	COMS-related report	No	Subpart ZZZZ does not require COMS.
§ 63.10(e)(3)	Excess emission and parameter exceedances reports	Yes.	Except that § 63.10(e)(3)(i) (C) is reserved.
§ 63.10(e)(4)	Reporting COMS data	No	Subpart ZZZZ does not require COMS.
§ 63.10(f)	Waiver for recordkeeping/reporting	Yes.	
§ 63.11	Flares	No.	
§ 63.12	State authority and delegations	Yes.	
§ 63.13	Addresses	Yes.	
§ 63.14	Incorporation by reference	Yes.	
§ 63.15	Availability of information	Yes.	

[75 FR 9688, Mar. 3, 2010, as amended at 78 FR 6720, Jan. 30, 2013]

Appendix A—Protocol for Using an Electrochemical Analyzer to Determine Oxygen and Carbon Monoxide Concentrations From Certain Engines

1.0 SCOPE AND APPLICATION. WHAT IS THIS PROTOCOL?

This protocol is a procedure for using portable electrochemical (EC) cells for measuring carbon monoxide (CO) and oxygen (O_2) concentrations in controlled and uncontrolled emissions from existing stationary 4-stroke lean burn and 4-stroke rich burn reciprocating internal combustion engines as specified in the applicable rule.

1.1 Analytes. What does this protocol determine?

This protocol measures the engine exhaust gas concentrations of carbon monoxide (CO) and oxygen (O_2).

Analyte	CAS No.	Sensitivity
Carbon monoxide (CO)	630-08-0	Minimum detectable limit should be 2 percent of the nominal range or 1 ppm, whichever is less restrictive.
Oxygen (O_2)	*7782-44-7*	

1.2 Applicability. When is this protocol acceptable?

This protocol is applicable to 40 CFR part 63, subpart ZZZZ. Because of inherent cross sensitivities of EC cells, you must not apply this protocol to other emissions sources without specific instruction to that effect.

1.3 Data Quality Objectives. How good must my collected data be?

Refer to Section 13 to verify and document acceptable analyzer performance.

1.4 Range. What is the targeted analytical range for this protocol?

The measurement system and EC cell design(s) conforming to this protocol will determine the analytical range for each gas component. The nominal ranges are defined by choosing up-scale calibration gas concentrations near the maximum anticipated flue gas concentrations for CO and O_2 , or no more than twice the permitted CO level.

1.5 Sensitivity. What minimum detectable limit will this protocol yield for a particular gas component?

The minimum detectable limit depends on the nominal range and resolution of the specific EC cell used, and the signal to noise ratio of the measurement system. The minimum detectable limit should be 2 percent of the nominal range or 1 ppm, whichever is less restrictive.

2.0 SUMMARY OF PROTOCOL

In this protocol, a gas sample is extracted from an engine exhaust system and then conveyed to a portable EC analyzer for measurement of CO and O_2 gas concentrations. This method provides measurement system performance specifications and sampling protocols to ensure reliable data. You may use additions to, or modifications of vendor supplied measurement systems (e.g., heated or unheated sample lines, thermocouples, flow meters, selective gas scrubbers, etc.) to meet the design

specifications of this protocol. Do not make changes to the measurement system from the as-verified configuration (Section 3.12).

3.0 DEFINITIONS

3.1 Measurement System. The total equipment required for the measurement of CO and O_2 concentrations. The measurement system consists of the following major subsystems:

3.1.1 Data Recorder. A strip chart recorder, computer or digital recorder for logging measurement data from the analyzer output. You may record measurement data from the digital data display manually or electronically.

3.1.2 Electrochemical (EC) Cell. A device, similar to a fuel cell, used to sense the presence of a specific analyte and generate an electrical current output proportional to the analyte concentration.

3.1.3 Interference Gas Scrubber. A device used to remove or neutralize chemical compounds that may interfere with the selective operation of an EC cell.

3.1.4 Moisture Removal System. Any device used to reduce the concentration of moisture in the sample stream so as to protect the EC cells from the damaging effects of condensation and to minimize errors in measurements caused by the scrubbing of soluble gases.

3.1.5 Sample Interface. The portion of the system used for one or more of the following: sample acquisition; sample transport; sample conditioning or protection of the EC cell from any degrading effects of the engine exhaust effluent; removal of particulate matter and condensed moisture.

3.2 Nominal Range. The range of analyte concentrations over which each EC cell is operated (normally 25 percent to 150 percent of up-scale calibration gas value). Several nominal ranges can be used for any given cell so long as the calibration and repeatability checks for that range remain within specifications.

3.3 Calibration Gas. A vendor certified concentration of a specific analyte in an appropriate balance gas.

3.4 Zero Calibration Error. The analyte concentration output exhibited by the EC cell in response to zero-level calibration gas.

3.5 Up-Scale Calibration Error. The mean of the difference between the analyte concentration exhibited by the EC cell and the certified concentration of the up-scale calibration gas.

3.6 Interference Check. A procedure for quantifying analytical interference from components in the engine exhaust gas other than the targeted analytes.

3.7 Repeatability Check. A protocol for demonstrating that an EC cell operated over a given nominal analyte concentration range provides a stable and consistent response and is not significantly affected by repeated exposure to that gas.

3.8 Sample Flow Rate. The flow rate of the gas sample as it passes through the EC cell. In some situations, EC cells can experience drift with changes in flow rate. The flow rate must be monitored and documented during all phases of a sampling run.

3.9 Sampling Run. A timed three-phase event whereby an EC cell's response rises and plateaus in a sample conditioning phase, remains relatively constant during a measurement data phase, then declines during a refresh phase. The sample conditioning phase exposes the EC cell to the gas sample for a length of time sufficient to reach a constant response. The measurement data phase is the time interval

during which gas sample measurements can be made that meet the acceptance criteria of this protocol. The refresh phase then purges the EC cells with CO-free air. The refresh phase replenishes requisite O_2 and moisture in the electrolyte reserve and provides a mechanism to de-gas or desorb any interference gas scrubbers or filters so as to enable a stable CO EC cell response. There are four primary types of sampling runs: pre- sampling calibrations; stack gas sampling; post-sampling calibration checks; and measurement system repeatability checks. Stack gas sampling runs can be chained together for extended evaluations, providing all other procedural specifications are met.

3.10 Sampling Day. A time not to exceed twelve hours from the time of the pre-sampling calibration to the post-sampling calibration check. During this time, stack gas sampling runs can be repeated without repeated recalibrations, providing all other sampling specifications have been met.

3.11 Pre-Sampling Calibration/Post-Sampling Calibration Check. The protocols executed at the beginning and end of each sampling day to bracket measurement readings with controlled performance checks.

3.12 Performance-Established Configuration. The EC cell and sampling system configuration that existed at the time that it initially met the performance requirements of this protocol.

4.0 INTERFERENCES.

When present in sufficient concentrations, NO and NO_2 are two gas species that have been reported to interfere with CO concentration measurements. In the likelihood of this occurrence, it is the protocol user's responsibility to employ and properly maintain an appropriate CO EC cell filter or scrubber for removal of these gases, as described in Section 6.2.12.

5.0 SAFETY. [RESERVED]

6.0 EQUIPMENT AND SUPPLIES.

6.1 What equipment do I need for the measurement system?

The system must maintain the gas sample at conditions that will prevent moisture condensation in the sample transport lines, both before and as the sample gas contacts the EC cells. The essential components of the measurement system are described below.

6.2 Measurement System Components.

6.2.1 Sample Probe. A single extraction-point probe constructed of glass, stainless steel or other non-reactive material, and of length sufficient to reach any designated sampling point. The sample probe must be designed to prevent plugging due to condensation or particulate matter.

6.2.2 Sample Line. Non-reactive tubing to transport the effluent from the sample probe to the EC cell.

6.2.3 Calibration Assembly (optional). A three-way valve assembly or equivalent to introduce calibration gases at ambient pressure at the exit end of the sample probe during calibration checks. The assembly must be designed such that only stack gas or calibration gas flows in the sample line and all gases flow through any gas path filters.

6.2.4 Particulate Filter (optional). Filters before the inlet of the EC cell to prevent accumulation of particulate material in the measurement system and extend the useful life of the components. All filters must be fabricated of materials that are non-reactive to the gas mixtures being sampled.

6.2.5 Sample Pump. A leak-free pump to provide undiluted sample gas to the system at a flow rate sufficient to minimize the response time of the measurement system. If located upstream of the EC cells, the pump must be constructed of a material that is non-reactive to the gas mixtures being sampled.

6.2.8 Sample Flow Rate Monitoring. An adjustable rotameter or equivalent device used to adjust and maintain the sample flow rate through the analyzer as prescribed.

6.2.9 Sample Gas Manifold (optional). A manifold to divert a portion of the sample gas stream to the analyzer and the remainder to a by-pass discharge vent. The sample gas manifold may also include provisions for introducing calibration gases directly to the analyzer. The manifold must be constructed of a material that is non-reactive to the gas mixtures being sampled.

6.2.10 EC cell. A device containing one or more EC cells to determine the CO and O_2 concentrations in the sample gas stream. The EC cell(s) must meet the applicable performance specifications of Section 13 of this protocol.

6.2.11 Data Recorder. A strip chart recorder, computer or digital recorder to make a record of analyzer output data. The data recorder resolution (i.e., readability) must be no greater than 1 ppm for CO; 0.1 percent for O_2 ; and one degree (either °C or °F) for temperature. Alternatively, you may use a digital or analog meter having the same resolution to observe and manually record the analyzer responses.

6.2.12 Interference Gas Filter or Scrubber. A device to remove interfering compounds upstream of the CO EC cell. Specific interference gas filters or scrubbers used in the performance-established configuration of the analyzer must continue to be used. Such a filter or scrubber must have a means to determine when the removal agent is exhausted. Periodically replace or replenish it in accordance with the manufacturer's recommendations.

7.0 REAGENTS AND STANDARDS. WHAT CALIBRATION GASES ARE NEEDED?

7.1 Calibration Gases. CO calibration gases for the EC cell must be CO in nitrogen or CO in a mixture of nitrogen and O_2. Use CO calibration gases with labeled concentration values certified by the manufacturer to be within ± 5 percent of the label value. Dry ambient air (20.9 percent O_2) is acceptable for calibration of the O_2 cell. If needed, any lower percentage O_2 calibration gas must be a mixture of O_2 in nitrogen.

7.1.1 Up-Scale CO Calibration Gas Concentration. Choose one or more up-scale gas concentrations such that the average of the stack gas measurements for each stack gas sampling run are between 25 and 150 percent of those concentrations. Alternatively, choose an up-scale gas that does not exceed twice the concentration of the applicable outlet standard. If a measured gas value exceeds 150 percent of the up-scale CO calibration gas value at any time during the stack gas sampling run, the run must be discarded and repeated.

7.1.2 Up-Scale O_2 Calibration Gas Concentration.

Select an O_2 gas concentration such that the difference between the gas concentration and the average stack gas measurement or reading for each sample run is less than 15 percent O_2 . When the average exhaust gas O_2 readings are above 6 percent, you may use dry ambient air (20.9 percent O_2) for the up-scale O_2 calibration gas.

7.1.3 Zero Gas. Use an inert gas that contains less than 0.25 percent of the up-scale CO calibration gas concentration. You may use dry air that is free from ambient CO and other combustion gas products (e.g., CO_2).

8.0 SAMPLE COLLECTION AND ANALYSIS

8.1 Selection of Sampling Sites.

8.1.1 Control Device Inlet. Select a sampling site sufficiently downstream of the engine so that the combustion gases should be well mixed. Use a single sampling extraction point near the center of the duct (e.g., within the 10 percent centroidal area), unless instructed otherwise.

8.1.2 Exhaust Gas Outlet. Select a sampling site located at least two stack diameters downstream of any disturbance (e.g., turbocharger exhaust, crossover junction or recirculation take-off) and at least one-half stack diameter upstream of the gas discharge to the atmosphere. Use a single sampling extraction point near the center of the duct (e.g., within the 10 percent centroidal area), unless instructed otherwise.

8.2 Stack Gas Collection and Analysis. Prior to the first stack gas sampling run, conduct that the pre-sampling calibration in accordance with Section 10.1. Use Figure 1 to record all data. Zero the analyzer with zero gas. Confirm and record that the scrubber media color is correct and not exhausted. Then position the probe at the sampling point and begin the sampling run at the same flow rate used during the up-scale calibration. Record the start time. Record all EC cell output responses and the flow rate during the “sample conditioning phase” once per minute until constant readings are obtained. Then begin the “measurement data phase” and record readings every 15 seconds for at least two minutes (or eight readings), or as otherwise required to achieve two continuous minutes of data that meet the specification given in Section 13.1. Finally, perform the “refresh phase” by introducing dry air, free from CO and other combustion gases, until several minute-to-minute readings of consistent value have been obtained. For each run use the “measurement data phase” readings to calculate the average stack gas CO and O_2 concentrations.

8.3 EC Cell Rate. Maintain the EC cell sample flow rate so that it does not vary by more than ± 10 percent throughout the pre-sampling calibration, stack gas sampling and post-sampling calibration check. Alternatively, the EC cell sample flow rate can be maintained within a tolerance range that does not affect the gas concentration readings by more than ± 3 percent, as instructed by the EC cell manufacturer.

9.0 QUALITY CONTROL (RESERVED)

10.0 CALIBRATION AND STANDARDIZATION

10.1 Pre-Sampling Calibration. Conduct the following protocol once for each nominal range to be used on each EC cell before performing a stack gas sampling run on each field sampling day. Repeat the calibration if you replace an EC cell before completing all of the sampling runs. There is no prescribed order for calibration of the EC cells; however, each cell must complete the measurement data phase during calibration. Assemble the measurement system by following the manufacturer's recommended protocols including for preparing and preconditioning the EC cell. Assure the measurement system has no leaks and verify the gas scrubbing agent is not depleted. Use Figure 1 to record all data.

10.1.1 Zero Calibration. For both the O_2 and CO cells, introduce zero gas to the measurement system (e.g., at the calibration assembly) and record the concentration reading every minute until readings are constant for at least two consecutive minutes. Include the time and sample flow rate. Repeat the steps in this section at least once to verify the zero calibration for each component gas.

10.1.2 Zero Calibration Tolerance. For each zero gas introduction, the zero level output must be less than or equal to ± 3 percent of the up-scale gas value or ± 1 ppm, whichever is less restrictive, for the CO channel and less than or equal to ± 0.3 percent O_2 for the O_2 channel.

10.1.3 Up-Scale Calibration. Individually introduce each calibration gas to the measurement system (e.g., at the calibration assembly) and record the start time. Record all EC cell output responses and the flow rate during this "sample conditioning phase" once per minute until readings are constant for at least two minutes. Then begin the "measurement data phase" and record readings every 15 seconds for a total of two minutes, or as otherwise required. Finally, perform the "refresh phase" by introducing dry air, free from CO and other combustion gases, until readings are constant for at least two consecutive minutes. Then repeat the steps in this section at least once to verify the calibration for each component gas. Introduce all gases to flow through the entire sample handling system (i.e., at the exit end of the sampling probe or the calibration assembly).

10.1.4 Up-Scale Calibration Error. The mean of the difference of the "measurement data phase" readings from the reported standard gas value must be less than or equal to ± 5 percent or ± 1 ppm for CO or ± 0.5 percent O_2 , whichever is less restrictive, respectively. The maximum allowable deviation from the mean measured value of any single "measurement data phase" reading must be less than or equal to ± 2 percent or ± 1 ppm for CO or ± 0.5 percent O_2 , whichever is less restrictive, respectively.

10.2 Post-Sampling Calibration Check. Conduct a stack gas post-sampling calibration check after the stack gas sampling run or set of runs and within 12 hours of the initial calibration. Conduct up-scale and zero calibration checks using the protocol in Section 10.1. Make no changes to the sampling system or EC cell calibration until all post-sampling calibration checks have been recorded. If either the zero or up-scale calibration error exceeds the respective specification in Sections 10.1.2 and 10.1.4 then all measurement data collected since the previous successful calibrations are invalid and re-calibration and re-sampling are required. If the sampling system is disassembled or the EC cell calibration is adjusted, repeat the calibration check before conducting the next analyzer sampling run.

11.0 Analytical Procedure

The analytical procedure is fully discussed in Section 8.

12.0 Calculations and Data Analysis

Determine the CO and O_2 concentrations for each stack gas sampling run by calculating the mean gas concentrations of the data recorded during the "measurement data phase".

13.0 Protocol Performance

Use the following protocols to verify consistent analyzer performance during each field sampling day.

13.1 Measurement Data Phase Performance Check. Calculate the mean of the readings from the "measurement data phase". The maximum allowable deviation from the mean for each of the individual readings is ± 2 percent, or ± 1 ppm, whichever is less restrictive. Record the mean value and maximum deviation for each gas monitored. Data must conform to Section 10.1.4. The EC cell flow rate must conform to the specification in Section 8.3.

Example: A measurement data phase is invalid if the maximum deviation of any single reading comprising that mean is greater than ± 2 percent *or ± 1 ppm (the default criteria). For example, if the mean = 30 ppm, single readings of below 29 ppm and above 31 ppm are disallowed*).

13.2 Interference Check. Before the initial use of the EC cell and interference gas scrubber in the field, and semi-annually thereafter, challenge the interference gas scrubber with NO and NO_2 gas standards that are generally recognized as representative of diesel-fueled engine NO and NO_2 emission values. Record the responses displayed by the CO EC cell and other pertinent data on Figure 1 or a similar form.

13.2.1 Interference Response. The combined NO and NO_2 interference response should be less than or equal to ± 5 percent of the up-scale CO calibration gas concentration.

13.3 Repeatability Check. Conduct the following check once for each nominal range that is to be used on the CO EC cell within 5 days prior to each field sampling program. If a field sampling program lasts longer than 5 days, repeat this check every 5 days. Immediately repeat the check if the EC cell is replaced or if the EC cell is exposed to gas concentrations greater than 150 percent of the highest up-scale gas concentration.

13.3.1 Repeatability Check Procedure. Perform a complete EC cell sampling run (all three phases) by introducing the CO calibration gas to the measurement system and record the response. Follow Section 10.1.3. Use Figure 1 to record all data. Repeat the run three times for a total of four complete runs. During the four repeatability check runs, do not adjust the system except where necessary to achieve the correct calibration gas flow rate at the analyzer.

13.3.2 Repeatability Check Calculations. Determine the highest and lowest average "measurement data phase" CO concentrations from the four repeatability check runs and record the results on Figure 1 or a similar form. The absolute value of the difference between the maximum and minimum average values recorded must not vary more than ± 3 percent or ± 1 ppm of the up-scale gas value, whichever is less restrictive.

14.0 POLLUTION PREVENTION (RESERVED)

15.0 WASTE MANAGEMENT (RESERVED)

16.0 ALTERNATIVE PROCEDURES (RESERVED)

17.0 REFERENCES

(1) "Development of an Electrochemical Cell Emission Analyzer Test Protocol", Topical Report, Phil Juneau, Emission Monitoring, Inc., July 1997.

(2) "Determination of Nitrogen Oxides, Carbon Monoxide, and Oxygen Emissions from Natural Gas-Fired Engines, Boilers, and Process Heaters Using Portable Analyzers", EMC Conditional Test Protocol 30 (CTM-30), Gas Research Institute Protocol GRI-96/0008, Revision 7, October 13, 1997.

(3) "ICAC Test Protocol for Periodic Monitoring", EMC Conditional Test Protocol 34 (CTM-034), The Institute of Clean Air Companies, September 8, 1999.

(4) "Code of Federal Regulations", Protection of Environment, 40 CFR, Part 60, Appendix A, Methods 1-4; 10.

TABLE 1: APPENDIX A—SAMPLING RUN DATA.

Facility_____ Engine I.D._____ Date_____				
Run Type:	(_)	(_)	(_)	(_)
(X)	Pre-Sample Calibration	Stack Gas Sample	Post-Sample Cal. Check	Repeatability Check

.

Run #	1	1	2	2	3	3	4	4	Time	Scrub. OK	Flow- Rate
Gas	O_2	CO	O_2	CO	O_2	CO	O_2	CO			
Sample Cond. Phase											
"											
"											
"											
"											
Measurement Data Phase											
"											
"											
"											
"											
"											
"											
"											
"											
"											
"											
Mean											
Refresh Phase											
"											
"											

"											
"											

[78 FR 6721, Jan. 30, 2013]

Resource

EPA New England » Reciprocating Internal Combustion Engines (RICE) - http://www.epa.gov/region1/rice/

Reference

The US EPA Electronic Code of Federal Regulations - 40 CFR 63, Subpart ZZZZ - National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines web address:
http://www.ecfr.gov/cgi-bin/text-idx?c=ecfr&rgn=div6&view=text&node=40:14.0.1.1.1.1&idno=40

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

J.H. Rudolph & Company, Inc.
12050 Optical Road,
English, Indiana 47118

Attachment E

Title 40: Protection of Environment

PART 63—NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR SOURCE CATEGORIES

Subpart CCCCCC - NESHAPs for Source Category: Gasoline Dispensing Facilities

F123-28142-00025

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

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

What This Subpart Covers

§ 63.11110 What is the purpose of this subpart?

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

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

(a) The affected source to which this subpart applies is each GDF that is located at an area source. The affected source includes each gasoline cargo tank during the delivery of product to a GDF and also includes each storage tank.

(b) If your GDF has a monthly throughput of less than 10,000 gallons of gasoline, you must comply with the requirements in §63.11116.

(c) If your GDF has a monthly throughput of 10,000 gallons of gasoline or more, you must comply with the requirements in §63.11117.

(d) If your GDF has a monthly throughput of 100,000 gallons of gasoline or more, you must comply with the requirements in §63.11118.

(e) An affected source shall, upon request by the Administrator, demonstrate that their average monthly throughput is less than the 10,000-gallon or the 100,000-gallon threshold level, as applicable.

(f) If you are an owner or operator of affected sources, as defined in paragraph (a) of this section, you are not required to obtain a permit under 40 CFR part 70 or 40 CFR part 71 as a result of being subject to this subpart. However, you must still apply for and obtain a permit under 40 CFR part 70 or 40 CFR part 71 if you meet one or more of the applicability criteria found in 40 CFR 70.3(a) and (b) or 40 CFR 71.3(a) and (b).

(g) The loading of aviation gasoline storage tanks at airports is not subject to this subpart and the aviation gasoline is not included in the gasoline throughput specified in paragraphs (b) through (e) of this section.

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

(a) The emission sources to which this subpart applies are gasoline storage tanks and associated equipment components in vapor or liquid gasoline service at new, reconstructed, or existing GDF that meet the criteria specified in §63.11111. Pressure/Vacuum vents on gasoline storage tanks and the equipment necessary to unload product from cargo tanks into the storage tanks at GDF are covered emission sources. The equipment used for the refueling of motor vehicles is not covered by this subpart.

(b) An affected source is a new affected source if you commenced construction on the affected source after November 9, 2006, and you meet the applicability criteria in §63.11111 at the time you commenced operation.

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

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

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

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

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

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

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

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

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

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

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

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

Emission Limitations and Management Practices

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

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

(1) Minimize gasoline spills;

(2) Clean up spills as expeditiously as practicable;

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Testing and Monitoring Requirements

§ 63.11120 What testing and monitoring requirements must I meet?

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

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

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

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

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

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

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

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

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

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

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

Notifications, Records, and Reports

§ 63.11124 What notifications must I submit and when?

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

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

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

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

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

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

Notification of Compliance Status may be submitted in lieu of the Initial Notification provided it contains the information required under paragraph (a)(1) of this section.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

§ 63.11125 What are my recordkeeping requirements?

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

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

§ 63.11126 What are my reporting requirements?

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

Other Requirements and Information

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

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

§ 63.11131 Who implements and enforces this subpart?

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

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

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

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

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

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

§ 63.11132 What definitions apply to this subpart?

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

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

Gasoline cargo tank means a delivery tank truck or railcar which is loading gasoline or which has loaded gasoline on the immediately previous load.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Resource

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

Reference

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

Indiana Department of Environmental Management
Office of Air Quality

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

Source Description and Location

Source Name:	**J. H. Rudolph & Company, Inc. - St. Croix Plant**
Source Location:	**12050 Optical Road, English, Indiana 47118**
County:	**Perry**
SIC Code:	**2951 (Asphalt Paving Mixtures and Blocks)**
Operation Permit No.:	**F123-28142-00025**
Operation Permit Issuance Date:	**February 11, 2010**
Significant Permit Revision No.:	**123-32840-00025**
Permit Reviewer:	**Hannah L. Desrosiers**

On June 24, 2013, the Office of Air Quality (OAQ) had a notice published in the Perry County News in Tell City, Indiana, stating that J.H. Rudolph & Company, Inc. had applied for a revision of its FESOP Renewal to add one (1) diesel fuel-fired crusher to its operation to "break" large masses, or "clumps", of recycled asphalt materials (RAM), including recycled asphalt pavement (RAP), and/or recycled asphalt shingles (RAS). Additionally, J. H. Rudolph & Company, Inc. has requested approval to add limestone to its aggregate mix, increase its operational flexibility of the operation by adjusting the existing fuel limits, revise the baghouse pressure drop to reflect the normal operating condition of the unit, update the gasoline storage tank emission unit description, and remove the natural gas fired inert gas generator from the permit since the unit is no longer in use and has been removed from the site. Finally, J. H. Rudolph & Company, Inc. has notified IDEM that the existing 150 ton/hr crusher, identified as RAP Crusher, approved for construction in 2011 as a part of FESOP SPR No.: F123-30568-00025, was never installed and will instead become an intermittent activity. The notice also stated that the OAQ proposed to issue a FESOP Significant Permit Revision for this operation and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

Comments and Responses

On June 27, 2013, Mr. Christopher Zirkelbach, of Environmental & Safety Solutions, Inc., consultant for J.H. Rudolph & Company, Inc., submitted comments to IDEM, OAQ on the draft FESOP Significant Permit Revision.

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

Comment 1:

> Please update the permit to include one (1) existing 11,000 gallon split compartment liquid asphalt storage tank, and one (1) recently installed 20,000 gallon electrically heated, hot asphalt storage tank.

Response to Comment 1:

IDEM agrees with the recommended changes, since the potential to emit from the addition of each storage tank is less than the thresholds listed in 326 IAC 2-7-1(42) (trivial activities), and therefore do not constitute a revision under 326 IAC 2-8-10 (FESOP Administrative Amendment). The permit has been revised as follows:

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:

****

(m) One (1) split compartment liquid asphalt storage tank, horizontal, identified as Tanks #10 and #11, constructed in 2011, with a maximum storage capacity of 5,000 gallons and 6,000 gallons, respectively, uncontrolled and exhausting to the atmosphere;

(n) One (1) electrically powered, liquid asphalt storage tank, horizontal, identified as Tank #16, approved for construction in 2013, with a maximum storage capacity of 20,000 gallons, uncontrolled and exhausting to the atmosphere;

(**o**~~m~~) Replacement or repair of electrostatic precipitators, bags in baghouses and filters in other air filtration equipment;

(**p**~~n~~) Natural gas pressure regulator vents, excluding venting at oil and gas production facilities; and

(**q**~~o~~) Paved and unpaved roads and parking lots with public access [326 IAC 6-**5**~~4~~].

****

SECTION D.4 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description: Paved & Unpaved Roads

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

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

****

No other changes were made to the permit as a result of this comment.

Additional Changes

IDEM, OAQ has decided to make additional revisions to the permit as described below, with deleted language as ~~strikeouts~~ and new language **bolded**.

1. IDEM has clarified the following condition to indicate that the analog instrument must be capable of measuring the parameters outside the normal range.

C.13 Instrument Specifications [326 IAC 2-1.1-11] [326 IAC 2-8-4(3)][326 IAC 2-8-5(1)]

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

twenty percent (20%) of full scale. **The analog instrument shall be capable of measuring values outside of the normal range.**

****

****

2. IDEM has added "where applicable" to the lists in Section C - General Record Keeping Requirements to more closely match the underlying rule.

C.18 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**, where applicable**:

****

(2) Records of required monitoring information include the following**, where applicable**:

****

****

****

No other changes have been made to the permit.

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) 233-9327 or toll free at 1-800-451-6027 extension 3-9327.

(b) A copy of the permit is available on the Internet at: http://www.in.gov/ai/appfiles/idem-caats/

(c) For additional information about air permits and how the public and interested parties can participate, refer to the IDEM's Guide for Citizen Participation and Permit Guide on the Internet at: www.idem.in.gov

Indiana Department of Environmental Management
Office of Air Quality

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

Source Description and Location

Source Name:	**J. H. Rudolph & Company, Inc. - St. Croix Plant**
Source Location:	**12050 Optical Road, English, Indiana 47118**
County:	**Perry**
SIC Code:	**2951 (Asphalt Paving Mixtures and Blocks)**
Operation Permit No.:	**F123-28142-00025**
Operation Permit Issuance Date:	**February 11, 2010**
Significant Permit Revision No.:	**123-32840-00025**
Permit Reviewer:	**Hannah L. Desrosiers**

On February 19, 2013, the Office of Air Quality (OAQ) received an application from J. H. Rudolph & Company, Inc related to a modification to an existing stationary drum hot-mix asphalt plant.

Existing Approvals

The source was issued FESOP Renewal No. 123-28142-00025 on February 11, 2010. The source has since received the following approvals:

(a) Administrative Amendment No. 123-29250-00025, issued on June 17, 2010; and

(b) Significant Permit Revision No. 123-30568-00025, issued on October 3, 2011.

County Attainment Status

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

Pollutant	Designation
SO_2	Better than national standards.
CO	Unclassifiable or attainment effective November 15, 1990.
O_3	Unclassifiable or attainment effective June 15, 2004, for the 8-hour ozone standard.[1]
PM_{10}	Unclassifiable effective November 15, 1990.
PM2.5	Unclassifiable or attainment effective April 5, 2005.
NO_2	Cannot be classified or better than national standards.
Pb	Not designated.
[1]Unclassifiable or attainment effective October 18, 2000, for the 1-hour ozone standard which was revoked effective June 15, 2005.	

(Air Pollution Control Board; 326 IAC 1-4-63; filed Dec 26, 2007, 1:43 p.m.: 20080123-IR-326070308FRA)

(a) Ozone Standards

Volatile organic compounds (VOC) and Nitrogen Oxides (NOx) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NOx emissions are considered when evaluating the rule applicability relating to ozone. Perry County has been designated as attainment or unclassifiable for

ozone. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

(b) PM2.5

Perry County has been classified as attainment for $PM_{2.5}$. On May 8, 2008, U.S. EPA promulgated the requirements for Prevention of Significant Deterioration (PSD) for $PM_{2.5}$ emissions. These rules became effective on July 15, 2008. On May 4, 2011, the air pollution control board issued an emergency rule establishing the direct $PM_{2.5}$ significant level at ten (10) tons per year. This rule became effective, June 28, 2011. Therefore, direct $PM_{2.5}$ and SO_2 emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2. See the State Rule Applicability – Entire Source section.

(c) Other Criteria Pollutants

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

Fugitive Emissions

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

The source is subject to New Source Performance Standard (NSPS) Subpart I, Standards of Performance for Hot Mix Asphalt Facilities [40 CFR Part 60, Subpart I], which was in effect on August 7, 1980.

Status of the Existing Source

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

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Process/ Emission Unit	Potential To Emit of the Entire Source Prior to Revision (tons/year)									
	PM	**PM10***	**PM2.5**	**SO2**	**NOx**	**VOC**	**CO**	**GHGs as CO_2e*** **	**Total HAPs**	**Worst Single HAP**
Ducted Emissions										
Dryer Fuel Combustion (worst case) (1)	38.75	30.88	30.88	89.01	97.68	2.78	42.39	8,313	6.6	4.00 (hydrogen chloride)
Dryer/Mixer (Process) (2)	214.47	86.21	90.94	14.50	13.75	8.00	32.50	0	2.66	0.78 (formaldehyde)
Dryer/Mixer Slag Processing	0	0	0	0.26	0	0	0	0	0	0
Hot Oil Heater Fuel Combustion (worst case)	4.23	3.37	3.37	9.73	3.11	0.07	0.78	1,495	0.59	0.44 (hydrogen chloride)
Inert Gas Generator Fuel Combustion	negl	negl	negl	negl	0.01	negl	0.01	-	negl	negl
Total Process Emissions	**218.71**	**89.59**	**94.31**	**99.00**	**98.99**	**8.07**	**43.17**	**9,809**	**6.85**	**4.00 (hydrogen chloride)**
Fugitive Emissions										
Asphalt Load-Out, Silo Filling, On-Site Yard (3)	0.28	0.28	0.28	0	0	4.28	0.72	0	0.07	0.02 (formaldehyde)
Material Storage Piles	2.848	0.995	0.995	0	0	0	0	0	0	0
Material Processing and Handling (3)	1.62	0.76	0.12	0	0	0	0	0	0	0
Material Crushing, Screening, and Conveying (3)	7.93	2.90	2.90	0	0	0	0	0	0	0
Unpaved and Paved Roads (worst case)	17.77	4.53	0.45	0	0	0	0	0	0	0
Cold-Mix Asphalt Production (4)	0	0	0	0	0	68.89	0	0	17.97	6.20 (xylenes)
Gasoline Fuel Transfer and Dispensing	0	0	0	0	0	0.02	0	0	0.01	0.002 (xylenes)
Volatile Organic Liquid Storage Vessels**	0	0	0	0	0	negl	0	0	negl	negl
Total Fugitive Emissions	**30.448**	**9.568**	**4.848**	**0**	**0**	**73.19**	**0.72**	**0**	**18.05**	**6.20 (xylenes)**
Total Limited/ Controlled Emissions	**249.158**	**99.158**	**99.158**	**99.00**	**99.00**	**81.26**	**43.89**	**9,809**	**24.90**	**6.20 (xylenes)**
Title V Major Source Thresholds	NA	100	100	100	100	100	100	100,000	25	10
PSD Major Source Thresholds	250	250	250	250	250	250	250	100,000	NA	NA
Emission Offset/ Nonattainment NSR Major Source Thresholds	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

negl = negligible NA = Not applicable

Note: This PTE table was taken directly from the TSD for FESOP SPR No. F123-30568-00025, issued on October 03, 2011 (pages 8 and 9 of 20).

* Under the Part 70 Permit program (40 CFR 70), particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM10), not particulate matter (PM), is considered as a "regulated air pollutant".

** 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.

*** The 100,000 CO2e threshold represents the Title V and PSD subject to regulation thresholds for GHGs in order to determine whether a source's emissions are a regulated NSR pollutant under Title V and PSD.

(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). There is no change in the Limited PTE with the replacement of the RAP crusher from 100-ton to 150- ton capacity.

(4) Limited PTE based upon maximum annual VOC usage limit to comply with 326 IAC 2-8 (FESOP).

(a) This existing source is not a major stationary source, under PSD (326 IAC 2-2), because no attainment regulated pollutant is emitted at a rate of 250 tons per year or more, and it is not one of the twenty-eight (28) listed source categories, as specified in 326 IAC 2-2-1(ff)(1).

(b) This existing source is not a major source of HAPs, as defined in 40 CFR 63.41, because the Permittee has accepted limits on HAPs emissions to less than ten (10) tons per year for any single HAP and less than twenty-five (25) tons per year of a combination of HAPs. Therefore, this source is an area source under Section 112 of the Clean Air Act (CAA).

Description of Proposed Revision

The Office of Air Quality (OAQ) has reviewed an application, submitted by J. H. Rudolph & Company, Inc. on February 19, 2013, relating to the addition of one (1) diesel fuel-fired breaker to "break" large masses of recycled asphalt materials (RAM), including recycled asphalt pavement (RAP), and/or recycled asphalt shingles (RAS). This breaker was previously permitted at this site as a crusher (constructed in 2005), but was replaced by a new 150 ton/hr crusher in Significant Permit Revision No. F123-30568-00025, issued on October 3, 2011. The former crusher (breaker) was modified to remove the grinding/crushing mechanism, and the source is now requesting to use this unit to "break" large agglomerated pieces, or "clumps", of RAM. These "clumps" of recycled asphalt materials consist of previously crushed/ground, stockpiled, RAP/RAS that has softened in the heat of the sun and then “re-clumped” during the cooler winter weather. The breaker/crusher uses hydraulics to press these large clumps of material up against the back wall of the unit, breaking it back into the smaller "pre-clumped" sized pieces. These smaller pieces are then removed and added to the aggregate mix, or further processed in the 150 ton/hr crusher if needed.

J. H. Rudolph & Company, Inc. has also requested the following additional changes to the permit:

1. Increase the operational flexibility of the operation by adding limestone to the aggregate mix;

2. Increase the operational flexibility of the operation by adjusting the existing fuel limits, as follows:

   A. increase the sulfur content of the No. 2 & No. 4 fuel oils from 0.50% by weight to 0.75% by weight;

   B. increase the sulfur content of the re-refined waste oil from 1.00% by weight to 1.5% by weight;

   C. increase the sulfur content of the steel slag to from 0.66% by weight to 1.00% by weight;

   D. increase the ash content of the re-refined waste oil from 1.00 by weight to 1.50% by weight;

   E. increase the lead content of the re-refined waste oil from 0.030% by weight to 0.060% by weight;

   F. increase the chlorine content of the re-refined waste oil from 0.100% to 0.150% by weight; and

   G. increase the re-refined waste oil HCL emissions limit from 6.6 lbs/kgal to 9.9 lbs/kgal.

3. Revise the baghouse pressure drop be from 2.0 to 6.0 inches of water to 0.50 to 6.0 inches of water, to reflect the normal operating condition of the unit;

4. Revise the gasoline storage tank emission unit description, found in Section E.5 of the permit, to agree with the emission unit description listed in Section A.3 of the permit; and

5. Remove the natural gas fired inert gas generator from the permit since the unit is no longer in use and has been removed from the site.

6. Revise the emission unit description for the 150 ton/hr crusher, identified as RAP Crusher, which was approved for construction in 2011 as a part of FESOP SPR No.: F123-30568-00025, since the unit was never installed, and will instead become an intermittent activity. J. H. Rudolph indicates that it intends to either bring in an outside contractor or rent a crushing unit several times a year to crush/grind whatever recycled asphalt materials (RAM), including recycled asphalt pavement (RAP), and/or recycled asphalt shingles (RAS), are needed for the asphalt production operation. NOTE: This emission unit is renamed as RAM Crusher, since the asbestos-free shingle grinding, added as part of FESOP SPR No.: F123-30568-00025, is also an intermittent activity.

   Also, since a number of existing Federal National Emission Standards for Hazardous Air Pollutants (NESHAPs) and New Source Performance Standards (NSPS) have been amended since the issuance of FESOP SPR No.: F123-30568-00025 on October 03, 2011, IDEM has performed an applicability determination for the following Federal Rules:

   (A) 40 CFR 63, Subpart ZZZZ (4Z);

   (B) 40 CFR 60, Subpart IIII (4I)

   (C) 40 CFR 60, Subpart JJJJ (4J)

(a) The following is a list of the new emission unit(s):

   (1) One (1) 210 horsepower (hp), diesel fuel-fired portable recycled asphalt materials (RAM) crusher, identified as RAM Lump Breaker, manufactured in 1985 and initially constructed in 1990, approved for construction in 2013, with a maximum rated capacity of 100 tons of RAM per hour, uncontrolled and exhausting to the atmosphere;

   Under 40 CFR 63, Subpart ZZZZ (NESHAP for Stationary Reciprocating Internal Combustion Engines (RICE)), this unit is considered an affected facility.

   Note: This crusher was originally constructed in 2005, was removed from the site in 2011, and subject to physical modification (the grinding mechanism was removed) in 2012. This unit will be dedicated to this site and as described above will be used to "break" large clumps of recycled asphalt materials (RAM) *(aka recycled asphalt pavement (RAP), and/or recycled asphalt shingles (RAS))* into smaller pieces for addition to the aggregate mix.

   (2) One (1) RAM screen.

(b) The following is a list of the new insignificant activities:

- Limestone storage piles, with a maximum anticipated pile size of eight (8.00) acres.

(c) The following is a list of the modified emission unit(s):

   (1) One (1) recycled asphalt materials (RAM) processing system *(formerly known as the recycled asphalt pavement (RAP) system)*, constructed in 2005, modified in 2011, and approved for modification in 2013, with a maximum throughput capacity of one hundred (150) tons of RAM per hour, uncontrolled and exhausting to the atmosphere, and consisting of:

   (A) One (1) intermittent, portable, non-stationary, recycled asphalt materials (RAM) crushing operation, identified as RAM Crusher *(previously identified as RAP Crusher)*, having a maximum rated capacity of 150 tons of RAM per hour, uncontrolled and exhausting to the atmosphere;

Under 40 CFR 1068.30, General Compliance Provisions for Highway, Stationary, and Nonroad Programs, this unit is considered a portable, non-stationary, nonroad engine.

(B) Five (5) RAM conveyors;

(C) Two (2) RAM feeder bins;

(D) One (1) RAM screen; and

(E) Recycled asphalt pavement (RAP) storage piles, with a maximum anticipated pile size of one and fifty hundredths (1.50) acres;

(F) Asbestos-free recycled asphalt shingle (ground factory seconds and/or post consumer waste) (RAS) storage piles, with a combined maximum anticipated pile size of one and fifty hundredths (1.50) acres.

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

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

(1) One (1) gasoline storage tank, constructed in 2005, approved for modification in 2011, with a maximum storage capacity of 560 gallons, uncontrolled and exhausting to the atmosphere;

Under 40 CFR 63, Subpart CCCCCC: National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities, the gasoline fuel transfer and dispensing operation, including the 560 gallon gasoline storage tank, is considered an affected facility.

(d) The source has removed the following Insignificant Activities:

One (1) natural gas fired inert gas generator, constructed in 2005, with a maximum rated heat input capacity of two hundred twenty-eight ten-thousandths (0.0228) MMBtu/hr, uncontrolled and exhausting to the atmosphere;

(e) Upon review of the permit and supporting documentation, IDEM OAQ, in collaboration with the source, determined that the following additional revisions were required to maintain the Source's FESOP Status:

(1) A number of existing permit limits have been adjusted to accommodate the addition of the RAM Lump Breaker and the limestone storage piles, and the revisions to the existing fuel and slag content limitations. See the "PTE of the Entire Source after Issuance of the FESOP Revision" section below for more details;

(2) The existing permit specifies the compliance with the annual Sulfur Dioxide (SO2) and Nitrogen Oxide (NOX) emission limits in terms of fuel usage in the dryer/mixer burner and all other combustion equipment. IDEM has determined that it is unnecessary to limit SO2 and NOX emissions from all of the combustion equipment located onsite, when limiting SO2 and NOX emissions from fuel usage in the dryer/mixer burner is sufficient to ensure compliance with the source-wide limits established through the FESOP program. Therefore, the compliance determination has been updated to address fuel usage in the dryer/mixer burner only, as indicated in the "PTE of the Entire Source after Issuance of the FESOP Revision" section, below;

(3) IDEM has determined that an annual hydrogen chloride (HCL) emissions limitation (ton/yr), and accompanying compliance determination equation and reporting requirement, unintentionally omitted from the permit during the review for FESOP Renewal #123-28142-00025, are needed to ensure that the HCL emissions limitation contained in Section D.1.4 - Fuel, Steel Slag, and HAP Limitations is federally enforceable. The recordkeeping for this requirement already exists in the permit.

(f) Finally, IDEM OAQ has determined that the following additional revisions were required.

Starting July 1, 2011, (pursuant to 326 IAC 2-7-1(39)) greenhouse gases (GHGs) emissions are subject to regulation at a source with a potential to emit 100,000 tons per year or more of CO2 equivalent emissions (CO2e). Therefore, greenhouse gases (as CO2e) emissions were calculated for this source at the time of its most recent revision, FESOP SPR No.: F123-30568-00025, issued on October 03, 2011. However, the Unlimited Potential To Emit CO2e from the combustion of Biodiesel was unintentionally omitted. Additionally, the Limited Potential To Emit CO2e from each of the fuels combusted in the dryer/mixer were not characterized, only the dryer/mixer process emissions were accounted for. Therefore, as part of this revision, Unlimited CO2e emissions from the combustion of Biodiesel, and the Limited CO2e emissions from fuel combustion (all fuels) in the Dryer/Mixer have been calculated (see TSD Appendices A.1 and A.2 for detailed calculations and the "Potential To Emit of the Entire Source to accommodate the Proposed Revision" table in this TSD for a summary table). Based on the calculations, the unlimited potential to emit greenhouse gases from the entire source continues to be less than 100,000 tons of CO2e per year. Also, see the "Emission Calculations" section (below) of this TSD for more information.

Enforcement Issues

There are no pending enforcement actions related to this revision.

Emission Calculations

See Appendices A.1, A.2, and A.3 of this TSD for detailed emission calculations.

The following applies as a result of this revision:

(a) The existing 150 ton/hr crusher (RAM Crusher) is considered a portable, non-stationary, nonroad engine as defined in 40 CFR §1068.30. Additionally, the definition of "stationary source" under 326 IAC 2-2-1(yy), and "source" under 326 IAC 1-2-73, does not include emissions resulting from an internal combustion engine used for transportation purposes (mobile sources), or from a nonroad engine or nonroad vehicle. Therefore, the combustion emissions from the RAM crusher are not included in the potential to emit calculations; and

(b) The potential to emit (PTE) (as defined in 326 IAC 2-7-1(29)) greenhouse gases (GHGs) has been calculated for the Biodiesel combustion in the dryer/mixer burner and hot oil heater. Additionally, IDEM has determined that the CO2 emissions generated from the combustion of Biodiesel do not qualify for the Biogenic CO2 deferral, issued by the U.S. EPA On July 20, 2011, because the fuel is not a biomass fuel, and is produced through chemical processes, not biological processes.

Permit Level Determination – FESOP Revision

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

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Process/ Emission Unit	PTE of Proposed Revision (tons/year)									
	PM	PM10	PM2.5	SO_2	NOx	VOC	CO	GHGs as CO_2e	Total HAPs	Worst Single HAP
Ducted Emissions										
Diesel-Fired Generator < 600 HP (RAM Lump Breaker)	2.02	2.02	2.02	1.89	28.51	2.31	6.14	1,061.30	0.025	0.008 (formaldehyde)
Diesel-Fired Generator < 600 HP (RAM Crusher) $^{\alpha}$	0	0	0	0	0	0	0	0	0	N/A
Fugitive Emissions										
Material Crushing (RAM Lump Breaker)	2.37	1.05	1.05	0	0	0	0	0	0	N/A
Material Storage Piles (Limestone)	2.70	0.95	0.95	0	0	0	0	0	0	N/A
Total PTE of Proposed Revision	**7.09**	**4.02**	**4.02**	**1.89**	**28.51**	**2.31**	**6.14**	**1,061.30**	**0.02**	**0.01 (formaldehyde)**

N/A = not applicable

Detailed calculations are available in TSD Appendix A.3: Unlimited Potential To Emit of the revision.

α The intermittent recycled asphalt materials (RAM) crushing operation makes use of a portable, non-stationary, crushing unit (150 ton/hr max), which has been determined a nonroad vehicle under 40 CFR 60, and 40 CFR 63; therefore, the fuel combustion emissions are not counted toward PSD and Title V applicability.

This FESOP is being revised through a FESOP Significant Permit Revision, pursuant to 326 IAC 2-8-11.1(f)(1)(E), because the proposed revision is not an Administrative Amendment or Minor Permit revision and the proposed revision involves the construction of a new emission unit with a potential to emit greater than or equal to twenty-five (25) tons per year of Nitrogen oxides (NOx). Additionally, this FESOP is being revised through a FESOP Significant Permit Revision, pursuant to 326 IAC 2-8-11.1(g), because the proposed revision requires adjustment of the existing FESOP emission limitations.

PTE of the Entire Source After Issuance of the FESOP Revision

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

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Process/ Emission Unit	Potential To Emit of the Entire Source to accommodate the Proposed Revision (tons/year)									
	PM	PM10*	PM2.5	SO2	NOx	VOC	CO	GHGs as CO_2e***	Total HAPs	Worst Single HAP
Ducted Emissions										
Dryer Fuel Combustion (worst case) (1)	**35.76** ~~38.75~~	**28.49** ~~30.88~~	**28.49** ~~30.88~~	**82.13** ~~89.01~~	**67.38** ~~97.68~~	**1.95** ~~2.78~~	**29.79** ~~42.39~~	**42,871.22** ~~8,313~~	**5.80** ~~6.6~~	**3.69**~~4.00~~ (HCL)
Dryer/Mixer (Process) (2)	**203.67** ~~214.47~~	**81.93** ~~86.21~~	**86.42** ~~90.94~~	**13.77** ~~14.50~~	**13.06** ~~13.75~~	**7.60** ~~8.00~~	**30.86** ~~32.50~~	**7,894.36** ~~0~~	**2.53** ~~2.66~~	**0.74**~~0.78~~ (formaldehyde)
Dryer/Mixer Slag Processing	0	0	0	**0.40**~~0.26~~	0	0	0	0	0	**N/A**~~0~~
Hot Oil Heater Fuel Combustion (worst case)	**6.35** ~~4.23~~	**5.06** ~~3.37~~	**5.06** ~~3.37~~	**14.59** ~~9.73~~	3.11	0.07	0.78	**1,852.74** ~~1,495~~	**0.92** ~~0.59~~	**0.66**~~0.44~~ (HCL)
~~Inert Gas Generator Fuel Combustion~~	~~negl~~	~~negl~~	~~negl~~	~~negl~~	~~0.01~~	~~negl~~	~~0.01~~	~~-~~	~~negl~~	~~negl~~
Diesel-Fired Generator < 600 HP (RAM Lump Breaker)	**2.02**	**2.02**	**2.02**	**1.89**	**28.51**	**2.31**	**6.14**	**1,061.30**	**0.02**	**0.01 (formaldehyde)**
Diesel-Fired Generator < 600 HP (RAM Crusher) α	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**N/A**
Total Process Emissions β	**212.05** ~~218.71~~	**89.01** ~~89.59~~	**93.50** ~~94.31~~	99.00	**99.00** ~~98.99~~	**9.98** ~~8.07~~	**37.79** ~~43.17~~	**45,785.27** ~~9,809~~	**6.74** ~~6.85~~	**3.69**~~4.00~~ (HCL)
Fugitive Emissions										
Asphalt Load-Out, Silo Filling, On-Site Yard (3)	**0.26** ~~0.28~~	**0.26** ~~0.28~~	**0.26** ~~0.28~~	0	0	**4.07** ~~4.28~~	**0.68** ~~0.72~~	0	0.07	0.02 (formaldehyde)
Material Storage Piles	**5.56** ~~2.85~~	**1.94** ~~1.00~~	**1.94** ~~1.00~~	0	0	0	0	0	0	**N/A**~~0~~
Material Processing and Handling (3)	**1.53** ~~1.62~~	**0.73** ~~0.76~~	**0.11** ~~0.12~~	0	0	0	0	0	0	**N/A**~~0~~
Material Crushing, Screening, and Conveying (3)	**7.53** ~~7.93~~	**2.75** ~~2.90~~	**2.75** ~~2.90~~	0	0	0	0	0	0	**N/A**~~0~~
Unpaved and Paved Roads (worst case)	**16.87** ~~17.77~~	**4.30** ~~4.530~~	**0.43** ~~0.45~~	0	0	0	0	0	0	**N/A**~~0~~
Cold-Mix Asphalt Production (4)	0	0	0	0	0	68.89	0	0	17.97	6.20 (xylenes)
Gasoline Fuel Transfer and Dispensing	0	0	0	0	0	0.02	0	0	0.01	0.002 (xylenes)
Volatile Organic Liquid Storage Vessels**	0	0	0	0	0	negl	0	0	negl	negl
Total Fugitive Emissions	**31.75** ~~30.45~~	**9.98** ~~9.47~~	**5.50** ~~4.74~~	0	0	**72.98** ~~73.19~~	**0.68** ~~0.72~~	0	**18.04** ~~18.05~~	6.20 (xylenes)
Total Limited/ Controlled Emissions	**243.80** ~~249.158~~	**99.00** ~~99.055~~	**99.00** ~~99.055~~	99.00	99.00	**82.95** ~~81.26~~	**38.47** ~~43.89~~	**45,785.27** ~~9,809~~	**24.79** ~~24.90~~	6.20 (xylenes)
Title V Major Source Thresholds	N/A	100	100	100	100	100	100	100,000	25	10
PSD Major Source Thresholds	250	250	250	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 10 micrometers (PM10), not particulate matter (PM), is considered as a "regulated air pollutant".

** 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.

*** The 100,000 CO2e threshold represents the Title V and PSD subject to regulation thresholds for GHGs in order to determine whether a source's emissions are a regulated NSR pollutant under Title V and PSD. CO2e emissions from fuel combustion (all fuels) in the Dryer/Mixer have been calculated, as indicated in the "Description of Proposed Revision" section above.

α The intermittent RAM crushing operation makes use of a portable, non-stationary, crushing unit, which has been determined a nonroad vehicle under 40 CFR 60, and 40 CFR 63; therefore, the fuel combustion emissions are not counted toward PSD and Title V applicability.

β Worst Case Emissions (tons/yr) = Worst Case Emissions from Dryer Fuel Combustion and Dryer/Mixer Process + Worst Case Emissions from Hot Oil Heater Fuel Combustion + Emissions from each of the Generators.

(1) Limited PTE based upon annual production and fuel usage limits to comply with 326 IAC 2-2 (PSD) and 326 IAC 2-8 (FESOP).

(2) Limited PTE based upon annual production limit and lb/ton emission limits to comply with 326 IAC 2-2 (PSD) and 326 IAC 2-8 (FESOP).

(3) Limited PTE based upon annual production limit to comply with 326 IAC 2-2 (PSD) & 326 IAC 2-8 (FESOP).

(4) Limited PTE based upon maximum annual VOC usage limit to comply with 326 IAC 2-8 (FESOP).

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

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Process/ Emission Unit	Potential To Emit of the Entire Source After Issuance of Revision (tons/year)									
	PM	PM10*	PM2.5	SO2	NOx	VOC	CO	GHGs as CO_2e***	Total HAPs	Worst Single HAP
Ducted Emissions										
Dryer Fuel Combustion (worst case) (1)	35.76	28.49	28.49	82.13	67.38	1.95	29.79	42,871.22	5.80	3.69 (HCL)
Dryer/Mixer (Process) (2)	203.67	81.93	86.42	13.77	13.06	7.60	30.86	7,894.36	2.53	0.74 (formaldehyde)
Dryer/Mixer Slag Processing	0	0	0	0.40	0	0	0	0	0	N/A
Hot Oil Heater Fuel Combustion (worst case)	6.35	5.06	5.06	14.59	3.11	0.07	0.78	1,852.74	0.92	0.66 (HCL)
Diesel-Fired Generator < 600 HP (RAM Lump Breaker)	2.02	2.02	2.02	1.89	28.51	2.31	6.14	1,061.30	0.02	0.01 (formaldehyde)
Diesel-Fired Generator < 600 HP (RAM Crusher) α	0	0	0	0	0	0	0	0	0	N/A
Total Process Emissions β	**212.05**	**89.01**	**93.50**	**99.00**	**99.00**	**9.98**	**37.79**	**45,785.27**	**6.74**	**3.69 (HCL)**
Fugitive Emissions										
Asphalt Load-Out, Silo Filling, On-Site Yard (3)	0.26	0.26	0.26	0	0	4.07	0.68	0	0.07	0.02 (formaldehyde)
Material Storage Piles	5.56	1.94	1.94	0	0	0	0	0	0	N/A
Material Processing and Handling (3)	1.53	0.73	0.11	0	0	0	0	0	0	N/A
Material Crushing, Screening, and Conveying (3)	7.53	2.75	27580	0	0	0	0	0	0	N/A
Unpaved and Paved Roads (worst case)	16.87	4.30	0.43	0	0	0	0	0	0	N/A
Cold-Mix Asphalt Production (4)	0	0	0	0	0	68.89	0	0	17.97	6.20 (xylenes)
Gasoline Fuel Transfer and Dispensing	0	0	0	0	0	0.02	0	0	0.01	0.002 (xylenes)
Volatile Organic Liquid Storage Vessels**	0	0	0	0	0	negl	0	0	negl	negl
Total Fugitive Emissions	**31.75**	**9.98**	**5.50**	**0**	**0**	**72.98**	**0.68**	**0**	**18.04**	**6.20 (xylenes)**
Total Limited/ Controlled Emissions	**243.80**	**99.00**	**99.00**	**99.00**	**99.00**	**82.95**	**38.47**	**45,785.27**	**24.79**	**6.20 (xylenes)**
Title V Major Source Thresholds	N/A	100	100	100	100	100	100	100,000	25	10
PSD Major Source Thresholds	250	250	250	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 10 micrometers (PM10), not particulate matter (PM), is considered as a "regulated air pollutant".

** 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.

*** The 100,000 CO2e threshold represents the Title V and PSD subject to regulation thresholds for GHGs in order to determine whether a source's emissions are a regulated NSR pollutant under Title V and PSD.

α The intermittent RAM crushing operation makes use of a portable, non-stationary, crushing unit, which has been determined a nonroad vehicle under 40 CFR 60, and 40 CFR 63; therefore, the fuel combustion emissions are not counted toward PSD and Title V applicability.

β Worst Case Emissions (tons/yr) = Worst Case Emissions from Dryer Fuel Combustion and Dryer/Mixer Process + Worst Case Emissions from Hot Oil Heater Fuel Combustion + Emissions from each of the Generators.

(1) Limited PTE based upon annual production and fuel usage limits to comply with 326 IAC 2-2 (PSD) and 326 IAC 2-8 (FESOP).

(2) Limited PTE based upon annual production limit and lb/ton emission limits to comply with 326 IAC 2-2 (PSD) and 326 IAC 2-8 (FESOP).

(3) Limited PTE based upon annual production limit to comply with 326 IAC 2-2 (PSD) & 326 IAC 2-8 (FESOP).

(4) Limited PTE based upon maximum annual VOC usage limit to comply with 326 IAC 2-8 (FESOP).

FESOP and PSD Minor Status

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

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

(a) Pursuant to 326 IAC 2-8-4 (FESOP) and in order to render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable, PM10, PM2.5, and NOx emissions from the dryer/mixer process shall be limited as follows:

(1) The combined maximum amount of hot-mix and warm-mix asphalt produced shall not exceed 474,820 tons per twelve (12) consecutive month period, with compliance determined at the end of each month. *This is a change from 500,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month. This is a Title I change;*

(2) PM10 emissions from the dryer/mixer shall not exceed 0.345 pounds of PM10 per ton of asphalt produced. *This is an existing limit for this source;*

(3) PM2.5 emissions from the dryer/mixer shall not exceed 0.364 pounds of PM2.5 per ton of asphalt produced. *This is an existing limit for this source;*

(4) NOx emissions from the dryer/mixer shall not exceed 0.055 pounds of NOx per ton of asphalt produced. *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, and NOx from all other emission units at this source, shall limit the source-wide total potential to emit of PM10, PM2.5, and NOx to less than one hundred (100) tons per twelve (12) consecutive month period, each, and shall render 326 IAC 2-7 (Part 70 Permits) and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD) not applicable.

Notes: The dryer/mixer pound/ton PM10 and PM2.5 emission limitations have been reduced to accommodate the addition of the limestone storage piles; and

Additionally, the potential to emit NOx from the dryer/mixer process combined with the potential to emit NOx from all other emission units at this source is greater than one hundred (100) tons per year due to the addition of the RAM Lump Breaker. Therefore, a new pound per ton NOx emission limit has been added to the permit for the dryer/mixer process to ensure compliance with the FESOP.

Unlimited PTE of NOx = 78.29 + 3.11 + 28.51 = 109.92 tons/yr

(b) Pursuant to 326 IAC 2-8-4 (FESOP) and in order to 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, SO2 and HAP emissions from the dryer/mixer shall be limited as follows:

(1) Fuel and Slag Specifications

(A) The sulfur content of the No. 2 and No. 4 distillate fuel oils, each, shall not exceed 0.75% by weight. *This is a change from the existing limit of five-tenths percent (0.5%) by weight. This is a Title I change*;

(B) The sulfur content of the biodiesel shall not exceed 0.50% by weight. *This is an existing limit for this source*;

(C) The sulfur content of the re-refined waste oil shall not exceed 1.50% by weight. *This is a change from the existing limit of* one percent (1.00%) by weight*. This is a Title I change*;

(D) The calendar-month average sulfur content of the steel slag shall not exceed 1.00% by weight with compliance determined at the end of each month. *This is a change from the existing limit of sixty-six hundredths percent (0.66%). This is a Title I change*;

(E) SO2 emissions from the steel slag used in the hot-mix asphalt dryer/mixer shall not exceed 0.0021 pounds of SO2 per ton of steel slag processed. *This is a change from the existing limit of fourteen ten-thousandths (0.0014) pounds of SO2 per ton of steel slag processed. This is a Title I change*;

(F) The ash content of the re-refined waste oil shall not exceed 1.50% by weight; *This is a change from the existing limit of one percent (1.00%) by weight. This is a Title I change*;

(G) The lead content of the re-refined waste oil shall not exceed 0.060% by weight. *This is a change from the existing limit of thirty-thousandths percent (0.030%) by weight. This is a Title I change*;

(H) The chlorine content of the re-refined waste oil shall not exceed 0.15% by weight. *This is a change from the existing limit of ten-hundredths percent (0.10%) by weight. This is a Title I change*; and

(I) The HCl emissions from the dryer/mixer burner shall not exceed 9.9 pounds of HCl per one thousand (1000) gallons of re-refined fuel oil burned, based on a chlorine content limit of 0.15% by weight. *This is a change from the existing limit of six and six tenths (6.6) pounds of HCl per one thousand (1000) gallons of re-refined fuel oil burned, based on a chlorine content limit of ten hundredths percent (0.10%) by weight.. This is a Title I change*;

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

(A) Re-refined waste oil usage shall not exceed 744,910 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 1,211,028 gallons, or equivalent, per twelve (12) consecutive month period. This is a Title I change*;

(B) Natural gas usage shall continue to not exceed 709 million cubic feet per twelve (12) consecutive month period, with compliance determined at the end of each month. *This is a change from the existing limit of 1,009 million cubic feet per twelve (12) consecutive month period, with compliance determined at the end of each month. This is a Title I change*;

(C) No. 2 distillate fuel oil usage shall not exceed 1,542,279 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 2,507,340 gallons, or equivalent, per twelve (12) consecutive month period. This is a Title I change*;

(D) No. 4 distillate fuel oil usage shall not exceed 1,460,024 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 2,373,615 gallons, or equivalent, per twelve (12) consecutive month period. This is a Title I change*;

(E) Biodiesel usage shall not exceed 2,313,418 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 2,507,340 gallons, or equivalent, per twelve (12) consecutive month period. This is a Title I change*

Note: Previously, J.H. Rudolph & Company, Inc. was required to limit combined fuel usage in the dryer/mixer burner *and* "all other combustion equipment", however, with this revision has elected to limit only the fuels used in the dryer/mixer burner. Therefore, each of the single fuel usage limitations have been reduced to exclude the annual fuel usage from "all other combustion equipment" permitted for onsite operation, including the diesel fuel that will be combusted in the RAM Lump Breaker.

(3) Multiple Fuel Usage Limitation:
When combusting more than one fuel per twelve (12) consecutive month period in the dryer/mixer burner, emissions from the dryer/mixer shall be limited as follows:

Note: The existing annual SO2 and NOx emission limitations have been revised to accommodate the change in the single fuel usage limitations as described above.

(A) SO_2 emissions (from the dryer/mixer only) shall not exceed 82.52 tons per twelve (12) consecutive month period, with compliance determined at the end of each month. *This is a change from limiting SO2 emissions from the dryer/mixer and "all other combustion equipment" to less than one hundred (100) tons per twelve (12) consecutive month period, with compliance determined at the end of each month. This is a Title I change;*

Limited PTE of SO2 = 82.13 + 0.40 = 82.52

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

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

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 distillate fuel oil used in the last 12 months with less than or equal to 0.75% sulfur content
F = gallons of No. 4 distillate fuel oil used in the last 12 months with less than or equal to 0.75% sulfur
B = gallons of biodiesel used in last 12 months with less than or equal to 0.5% sulfur
W = gallons of re-refined waste oil used in last 12 months with less than or equal to 1.50% sulfur
L = tons of steel slag used in last twelve (12) months
E_G = 0.60 lb/million cubic feet of natural gas
E_O = 106.5pounds/1000 gallons of No. 2 distillate fuel oil
E_F = 112.5pounds/1000 gallons of No. 4 distillate fuel oil
E_B = 71 pounds/1000 gallons of biodiesel
E_W = 220.5 lb/1000 gallons of re-refined waste oil
E_L = 0.0021 pounds per ton of steel slag processed.

(B) NOx emissions (from the dryer/mixer only) shall not exceed 67.38 tons per twelve (12) consecutive month period, with compliance determined at the end of each month. *This is a change from limiting NOx emissions from the dryer/mixer and "all other combustion equipment" to less than one hundred (100) tons per twelve (12)*

consecutive month period, with compliance determined at the end of each month. This is a Title I change

Note: The Permittee shall continue to limit fuel usage in the dryer/mixer burner according to the formula found in existing Permit Condition D.1.13(b):

(C) HCL emissions (from the dryer/mixer only) shall not exceed 3.69 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;*

Note: This limit is necessary to complement the waste oil fuel content and emission limits contained in existing permit condition D.1.4, in order to render them federally enforceable.

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 in the dryer/mixer in the last 12 months.
E_W = 9.9 lbs/1000 gallons of waste oil.

Compliance with these limits, combined with the potential to emit SO2, NOx, and HAPs from all other emission units at this source, shall limit the source-wide total potential to emit of SO2 and NOx to less than 100 tons per 12 consecutive month period, each, any single HAP to less than ten (10) tons per 12 consecutive month period, total HAPs to less than twenty-five (25) tons per 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.

Federal Rule Applicability Determination

New Source Performance Standards (NSPS)

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

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 continue to not exceed seven percent (7%) opacity, and fugitive particulate matter emissions from the crusher shall continue to not exceed twelve percent (12%) opacity.

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

The recycled asphalt materials (RAM) processing system *(formerly known as the recycled asphalt pavement (RAP) system)*, including the new RAM Lump Breaker, is therefore still subject to the following requirements of 40 CFR 60, Subpart OOO (included as Attachment C of the permit):

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

Note: this NSPS includes testing requirements applicable to the new RAM Lump Breaker.

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.

(b) 40 CFR 60, Subpart IIII - NSPS for Stationary Compression Ignition Internal Combustion Engines

(1) The requirements of the New Source Performance Standards (NSPS) for Stationary Compression Ignition (CI) Internal Combustion Engines (ICE), 40 CFR Part 60, Subpart IIII (4I) (326 IAC 12), are not included in the permit for the for the 210 horsepower (hp), diesel fuel-fired, portable recycled asphalt materials (RAM) crusher, identified as RAM Lump Breaker (manufactured in 1985 and initially constructed in 1990), since although the unit is approved for on-site installation in 2013, construction commenced before July 11, 2005, and the generator was manufactured prior to April 1, 2006. *Note: For the purposes of this rule, the date that construction commences is the date the engine is ordered by the original owner or operator.* Additionally, the unit has never been modified, as defined under §60.14, or reconstructed, as defined under §60.15, since although the crushing mechanism was removed from the unit, the internal combustion engine remains unchanged.

(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 portable, non-stationary, recycled asphalt materials (RAM) crusher, identified as RAM Crusher, as follows:

Pursuant to 40 CFR 60.4219, *Stationary internal combustion engine (ICE)* means any internal combustion engine, except combustion turbines, that converts heat energy into mechanical work and is not mobile. Stationary ICE differ from mobile ICE in that a stationary ICE is not a *nonroad engine* as defined at 40 CFR 1068.30 (excluding paragraph (2)(ii) of that definition), and is not used to propel a motor vehicle or a vehicle used solely for competition. Stationary ICE include; reciprocating ICE, rotary ICE, and other ICE, except combustion turbines.

Pursuant to 40 CFR 1068.30, *Nonroad engine* means:

(A) Except as discussed in paragraph (2) of this definition, a *nonroad engine* is an internal combustion engine that meets any of the following criteria:

(i) It is (or will be) used in or on a piece of equipment that is self-propelled or serves a dual purpose by both propelling itself and performing another function (such as garden tractors, off-highway mobile cranes and bulldozers).

(ii) It is (or will be) used in or on a piece of equipment that is intended to be propelled while performing its function (such as lawnmowers and string trimmers).

(iii) By itself or in or on a piece of equipment, it is portable or transportable, meaning designed to be and capable of being carried or moved from one location to another. Indicia of transportability include, but are not limited to, wheels, skids, carrying handles, dolly, trailer, or platform.

(B) An internal combustion engine is not a *nonroad engine* if it meets any of the following criteria:

(i) The engine is used to propel a motor vehicle, an aircraft, or equipment used solely for competition.

(ii) The engine is regulated under 40 CFR part 60, (or otherwise regulated by a federal New Source Performance Standard promulgated under section 111 of the Clean Air Act (42 U.S.C. 7411)).

(iii) The engine otherwise included in paragraph (1)(iii) of this definition remains or will remain at a location for more than 12 consecutive months or a shorter period of time for an engine located at a seasonal source. A location is any single site at a building, structure, facility, or installation. Any engine (or engines) that replace(s) an engine at a location and that is intended to perform the same or similar function as the engine replaced will be included in calculating the consecutive time period. An engine located at a seasonal source is an engine that remains at a seasonal source during the full annual operating period of the seasonal source. A seasonal source is a stationary source that remains in a single location on a permanent basis (i.e., at least two years) and that operates at that single location approximately three months (or more) each year. See §1068.31 for provisions that apply if the engine is removed from the location.

IDEM, OAQ has determined that based on information submitted by J. H. Rudolph & Company, Inc., the portable, non-stationary, RAM crusher may be considered a nonroad engine for the purposes of 40 CFR 60, Subpart IIII applicability, provided it meets the requirements of paragraph (2)(iii) of the definition of nonroad engine in 40 CFR 1068.30. Therefore, the requirements of 40 CFR 60, Subpart IIII are not applicable to the portable, non-stationary, recycled asphalt materials (RAM) crusher, identified as RAM Crusher, provided it meets the following requirements:

(A) The portable, non-stationary, RAM crusher shall remain at a location for a period not to exceed twelve (12) consecutive months.

(B) Any portable, non-stationary, RAM crusher that replaces a portable, non-stationary, RAM crusher at a location and that is intended to perform the same or similar function as the portable, non-stationary, RAM crusher replaced, will be included in calculating the consecutive time period.

(C) For the purposes of this condition and pursuant to 40 CFR 1068.30 Nonroad Engine (2)(iii), a location is any single site at a building, structure, facility, or installation.

(c) 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 (SI) Internal Combustion Engines (ICE), 40 CFR 60, Subpart JJJJ (4J) (326 IAC 12), are not included in the permit for the 210 horsepower (hp), diesel fuel-fired, portable recycled asphalt materials (RAM) crusher, identified as RAM Lump Breaker, since the lump breaker is a compression ignition (CI) ICE and not a spark ignition (SI) ICE.

(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 portable, non-stationary, recycled asphalt materials (RAM) crusher, identified as RAM Crusher, because it has compression ignition and meets the definition of a nonroad engine, as defined in 40 CFR 1068.30 (excluding paragraph (2)(ii) of that definition), and is therefore not considered a stationary internal combustion engine as defined in 40 CFR 60.4248.

(d) There are no other New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60) included for this proposed revision.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

(a) 40 CFR 61, Subpart M - NESHAPs for Asbestos
The requirements of the National Emission Standard for Hazardous Air Pollutants (NESHAPs) for Asbestos, 40 CFR 61, Subpart M (326 IAC 14), are not included in the permit for the stationary drum hot-mix asphalt plant, including the portable RAM Crusher and stationary RAM Lump Breaker, since although the source intends to grind and process shingles at this plant, J. H. Rudolph & Company, Inc., will purchase/use/process only supplier certified asbestos-free post consumer waste and/or factory seconds shingles in their aggregate mix. A condition limiting the use of asphalt shingles in the aggregate mix, to only those that are asbestos-free, was added to the permit at the time approval for shingle grinding was granted (FESOP SPR No.: F123-30568-00025, issued on October 03, 2011).

(b) 40 CFR 63, Subpart ZZZZ - NESHAP for Stationary Reciprocating Internal Combustion Engines

(1) The 210 horsepower (hp), diesel fuel-fired, portable recycled asphalt materials (RAM) crusher, identified as RAM Lump Breaker, (< 500 HP) is subject the requirements of 40 CFR 63, Subpart ZZZZ (4Z), the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Stationary Reciprocating Internal Combustion Engines (RICE) (326 IAC 20-82), because it is considered an existing (construction commenced before June 12, 2006) stationary compression ignition (CI) RICE at an area source of hazardous air pollutants (HAP). Additionally, the unit has never been re-constructed. *For the purposes of this rule, the date that construction commenced is the date on-site fabrication, erection, or installation ("physical" construction) of the affected source (engine) started when the unit was brand new. Relocation, or a change in ownership, of an existing stationary RICE does not make that stationary RICE a new or reconstructed stationary RICE. Also, although the crushing mechanism was removed from the unit, this does not qualify as reconstruction under the rule since the reciprocating internal combustion engine remains unchanged.* The RAM Lump Breaker is approved for on-site installation in 2013; however, [initial] construction commenced in 1990.

The RAM Lump Breaker is subject the following applicable portions of Subpart ZZZZ (4Z) (included as Attachment D of the permit), for existing non-emergency stationary RICE, which has a site rating of less than or equal to 300 brake horsepower (HP):

(A) 40 CFR 63.6580;
(B) 40 CFR 63.6585;
(C) 40 CFR 63.6590(a)(1)(iii) and (iv);
(D) 40 CFR 63.6595(a)(1), (b), (c);
(E) 40 CFR 63.6603(a);
(F) 40 CFR 63.6605;
(G) 40 CFR 63.6625(e)(4), (h), (i);
(H) 40 CFR 63.6635;
(J) 40 CFR 63.6645(a)(5);
(K) 40 CFR 63.6655;
(L) 40 CFR 63.6660;
(M) 40 CFR 63.6665;
(N) 40 CFR 63.6670;
(O) 40 CFR 63.6675;
(P) Table 2d (item 1);
(Q) Table (item 9); and

(I) 40 CFR 63.6640(a), (b), and (e); (R) Table 8.

Note: There are no testing requirements applicable to the RAM Lump Breaker for this NESHAP.

Note: Existing non-emergency compression ignition (CI) stationary RICE that have a site rating less than or equal to 300 brake horsepower (HP) and are located at an area source of HAP are not subject to numerical CO or formaldehyde emission limitations, but are only subject to work and management practices under Table 2d and Table 6.

The requirements of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated as 326 IAC 20-1-1, apply to the RAM Lump Breaker except as otherwise specified in 40 CFR 63, Subpart ZZZZ.

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

(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 20-82), are not included in the permit for the portable, non-stationary, recycled asphalt materials (RAM) crusher, identified as RAM Crusher, as follows:

Pursuant to 40 CFR 60.4219, *Stationary internal combustion engine (ICE)* means any internal combustion engine, except combustion turbines, that converts heat energy into mechanical work and is not mobile. Stationary ICE differ from mobile ICE in that a stationary ICE is not a *nonroad engine* as defined at 40 CFR 1068.30 (excluding paragraph (2)(ii) of that definition), and is not used to propel a motor vehicle or a vehicle used solely for competition. Stationary ICE include; reciprocating ICE, rotary ICE, and other ICE, except combustion turbines.

See line items (a)(2)(A) and (a)(2)(B) in the above New Source Performance Standards (NSPS) review for the definition of nonroad engine. IDEM, OAQ has determined that based on information submitted by J. H. Rudolph & Company, Inc., the portable, non-stationary, RAM crusher may be considered a nonroad engine for the purposes of 40 CFR 63, Subpart ZZZZ applicability, provided it meets the requirements of paragraph (2)(iii) of the definition of nonroad engine in 40 CFR 1068.30. Therefore, the requirements of 40 CFR 60, Subpart ZZZZ are not applicable to the portable, non-stationary, RAM crusher, provided it meets the following requirements:

(A) The portable, non-stationary, RAM crusher shall remain at a location for a period not to exceed twelve (12) consecutive months.

(B) Any portable, non-stationary, RAM crusher that replaces a portable, non-stationary, RAM crusher at a location and that is intended to perform the same or similar function as the portable, non-stationary, RAM crusher replaced will be included in calculating the consecutive time-period.

(C) For the purposes of this condition and pursuant to 40 CFR 1068.30 Nonroad Engine (2)(iii), a location is any single site at a building, structure, facility, or installation.

(c) There are no other National Emission Standards for Hazardous Air Pollutants (NESHAPs) (326 IAC 14, 326 IAC 20 and 40 CFR Part 63) included for this proposed revision.

Compliance Assurance Monitoring (CAM)

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

State Rule Applicability Determination - Entire Source

The following state rules are applicable to the proposed revision:

(a) 326 IAC 2-8-4 (FESOP)
This revision to an existing Title V minor stationary source will not change the minor status, because the potential to emit criteria pollutants from the entire source will still be limited to less than the Title V major source threshold levels. Therefore, the source will still be subject to the provisions of 326 IAC 2-8 (FESOP). See the "PTE of the Entire Source After Issuance of the FESOP Revision" Section above.

(b) 326 IAC 2-2 (Prevention of Significant Deterioration(PSD))
This modification to an existing PSD minor stationary source will not change the PSD minor status, because the potential to emit of all attainment regulated pollutants from the entire source will continue to be less than the PSD major source threshold levels. Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply. See the "PTE of the Entire Source After Issuance of the FESOP Revision" Section above.

(c) 326 IAC 2-3 (Emission Offset)
Perry County has been classified as attainment or unclassifiable in Indiana for all criteria pollutants. Therefore, the requirements of 326 IAC 2-3 (Emission Offset) do not apply and are not included in the permit.

(d) 326 IAC 2-1.1-5 (Nonattainment New Source Review)
Perry County has been classified as attainment or unclassifiable in Indiana for all criteria 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.

(e) 326 IAC 2-6 (Emission Reporting)
Pursuant to 326 IAC 2-6-1, this source is still not subject to this rule, because it is not required to have an operating permit under 326 IAC 2-7 (Part 70), it is not located in Lake, Porter, or LaPorte County, and it does not emit lead into the ambient air at levels equal to or greater than 5 tons per year. Therefore, 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.

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

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

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

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

(h) 326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations)
Pursuant to 326 IAC 6-5, fugitive particulate matter emissions shall continue to be controlled according to the Fugitive Dust Control Plan, which is included as Attachment A to the permit.

State Rule Applicability – Individual Facilities

Diesel Fuel-Fired Portable Crusher (RAM Lump Breaker)

(a) 326 IAC 1-6-3 (Preventive Maintenance Plan (PMP))
A PMP is required for this unit and any associated control devices.

(b) 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))
The potential to emit HAPs from the 210 horsepower (hp), diesel fuel-fired, portable recycled asphalt materials (RAM) crusher, identified as RAM Lump Breaker, 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 to this proposed revision, and are not included in the in the permit.

(c) 326 IAC 6-2 (Particulate Emissions from Indirect Heating Units)
The 210 horsepower (hp), diesel fuel-fired, portable recycled asphalt materials (RAM) crusher, identified as RAM Lump Breaker, 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 to this proposed revision, and are not included in the permit.

(d) 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)
The potential particulate emissions from the 210 horsepower (hp), diesel fuel-fired, portable recycled asphalt materials (RAM) crusher, identified as RAM Lump Breaker, are less than 0.551 pounds per hour. Therefore, pursuant to 326 IAC 6-3-1(b)(14) the RAM Lump Breaker is exempt from 326 IAC 6-3, and the requirements are not included in the permit for this unit..

See Appendix A.3 for the detailed calculations.

(e) 326 IAC 7-1.1 (Sulfur Dioxide Emissions Limitations)
The unlimited potential to emit SO2 from the 210 horsepower (hp), diesel fuel-fired, portable recycled asphalt materials (RAM) crusher, identified as RAM Lump Breaker, is less than twenty-five (25) tons per year, and ten (10) pounds/hour. Therefore, the requirements of 326 IAC 7-1.1 (Sulfur Dioxide Emissions Limitations) do not apply to this proposed revision, and are not included in the permit.

See Appendix A.3 for the detailed calculations.

(f) 326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities)
The unlimited VOC potential emissions from the 210 horsepower (hp), diesel fuel-fired, portable recycled asphalt materials (RAM) crusher, identified as RAM Lump Breaker, 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 to this proposed revision, and are not included in the permit.

See Appendix A.3 for the detailed calculations.

(g) There are no other 326 IAC 8 Rules that are applicable to the RAM Lump Breaker.

(h) 326 IAC 9-1 (Carbon Monoxide Emission Limits)
The 210 horsepower (hp), diesel fuel-fired, portable recycled asphalt materials (RAM) crusher, identified as RAM Lump Breaker, is 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) do not apply to this proposed revision, and are not included in the permit.

(i) 326 IAC 10-3 (Nitrogen Oxide Reduction Program for Specific Source Category)
The 210 horsepower (hp), diesel fuel-fired, portable recycled asphalt materials (RAM) crusher, identified as RAM Lump Breaker, does not meet the definition of an affected facility, as defined in 326 IAC 10-3-1(a), because it 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) do not apply to this proposed revision, and are not included in the permit.

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

(k) 326 IAC 20 (Hazardous Air Pollutants)
See Federal Rule Applicability Section of this TSD.

Portable, Non-Stationary Crusher (RAM Crusher)

There is no change in State Rule applicability for the portable, non-stationary, recycled asphalt materials (RAM) crusher, identified as RAM Crusher, as a result of this review. Therefore, the source shall continue to comply with the applicable requirements and permit conditions as contained in FESOP SPR No. F123-30568-00025, issued on October 03, 2011.

Compliance Determination, Monitoring and Testing Requirements

(a) There are no compliance determination requirements applicable to this proposed revision.

(b) The testing requirements applicable to this proposed revision are as follows:

Emission Unit	Control Device	Pollutant	Timeframe for Testing	Frequency of Testing
RAM Lump Breaker and associated conveyors, screens, and material transfer points	N/A	PM/PM10/PM2.5 *(opacity/fugitives)*	Within 180 days after initial use(3)	Once every five (5) years

These testing requirements are 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 on this unit *(after removal of parts)* 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.

Note: The existing testing requirements for the existing portable, non-stationary, recycled asphalt materials (RAM) crusher, identified as RAM Crusher, will not change as a result of this revision. The source shall continue to comply with the applicable requirements and permit conditions as contained in FESOP SPR No. F123-30568-00025, issued on October 03, 2011.

(c) The compliance monitoring requirements applicable to this proposed revision are as follows:

Emission Unit & Control Device	Parameter	Frequency	Range/Rate	Excursions and Exceedances
RAM Lump Breaker and associated conveyors, screens, and material transfer points	Visible Emissions	Once per day	normal/abnormal	Response Steps

These monitoring conditions are necessary to ensure compliance with 40 CFR 60, Subpart OOO, and 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 existing compliance monitoring requirements for the existing portable, non-stationary, recycled asphalt materials (RAM) crusher, identified as RAM Crusher, will not change as a

result of this revision. The source shall continue to comply with the applicable requirements and permit conditions as contained in FESOP SPR No. F123-30568-00025, issued on October 03, 2011.

All other existing compliance determination, monitoring, and testing requirements will not change as a result of this revision. The source shall continue to comply with the applicable requirements and permit conditions as contained in FESOP SPR No. F123-30568-00025, issued on October 03, 2011.

Proposed Changes

(a) The following changes listed below are due to the proposed revision:

(1) Sections A.2 - Emission Units and Pollution Control Equipment Summary, D.1 - Emissions Unit Operation Conditions for the Drum Hot-Mix Asphalt Plant, and E.1 - NSPS Requirements for the Hot-Mix Asphalt Plant, have been revised to include the new limestone storage piles;

(2) Sections A.2 - Emission Units and Pollution Control Equipment Summary, D.1 - Emissions Unit Operation Conditions for the Drum Hot-Mix Asphalt Plant, and E.2 - NSPS Requirements for the Recycled Asphalt Pavement (RAP) System, renamed Recycled Asphalt Materials (RAM) Processing System, have been revised to include a description of the new diesel fuel-fired portable recycled asphalt materials (RAM) crusher, identified as RAM Lump Breaker;

(3) Sections A.2 - Emission Units and Pollution Control Equipment Summary, D.1 - Emissions Unit Operation Conditions for the Drum Hot-Mix Asphalt Plant, and E.2 - NSPS Requirements for the Recycled Asphalt Materials (RAM) Processing System *(formerly known as the Recycled Asphalt Pavement (RAP) System)* have been revised to incorporate the revised emission unit description for the existing portable, non-stationary, recycled asphalt materials (RAM) crushing operation, identified as RAM Crusher, and to reflect the nonroad vehicle status of the unit;

(4) Permit Condition A.3 - Insignificant Activities, the inert gas generator has been deleted from the list because the unit was removed from the source;

(5) Sections D.1 - PSD Limits, D.1 - FESOP Limits, D.1 - Volatile Organic Compounds (VOC), and the FESOP Quarterly Report Form for tracking Asphalt Production, have been revised to reflect the reduction in the combined maximum hot-mix and warm-mix asphalt production limit due to the addition of the limestone storage piles and increase in waste oil ash content limit;

(6) Section D.1 - FESOP Limits, has been revised to incorporate the new NOx dryer/mixer process pound per ton (lb/ton) emission limitation;

(7) A new subsection D.1 - Fuel, Steel Slag, and HAP Limitations - Fuel and Slag Specifications has been added for clarification, separating the fuel and slag content limitations into their own section, the existing content limitations have been increased, and all associated permit condition references updated;

(8) Section D.1 - Fuel, Steel Slag, and HAP Limitations - Single Fuel Usage Limitations, has been revised to reflect the reductions in the individual fuel limits to accommodate the addition of the RAM Lump Breaker and to reflect the increases to the existing fuel content limits,

(9) Section D.1 - Fuel, Steel Slag, and HAP Limitations - Multiple Fuel and Steel Slag Usage Limitations, has been revised to reflect the changes to the annual SO2 and NOX emissions limitations due to the omission of "all other combustion equipment" from the limits, and to accommodate the addition of the RAM Lump Breaker and the changes to the existing fuel content limits;

(10) Section D.1 - Baghouse Parametric Monitoring has been revised to reflect the change to the normal pressure drop range;

(11) Section D.1 - Record Keeping Requirements, has been revised to reflect the omission of "all other combustion equipment" from the fuel limits and compliance determination equations;

(12) A New Section E.3 - NESHAP Requirements, has been added to incorporate the requirements of the 40 CFR 63, Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Stationary Reciprocating Internal Combustion Engines for the RAM Lump Breaker;

(13) A new Section E.4 - NSPS & NESHAPS Requirements, has been added to remind J. H. Rudolph & Company, Inc. that in order to render the requirements of 40 CFR 60, Subpart IIII, New Source Performance Standards (NSPS) for Stationary Compression Ignition Internal Combustion Engines, and 40 CFR 63, Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Stationary Reciprocating Internal Combustion Engines, not applicable to the intermittent, recycled asphalt materials (RAM) crushing operation, identified as RAM Crusher, the residence time of the unit must be limited at this site. NOTE: The existing Section E.3 - NESHAPS Requirements - Gasoline Fuel Transfer And Dispensing Operations has been renumbered as E.5; and

(14) Section E.5 - NESHAPS Requirements - Gasoline Fuel Transfer And Dispensing Operations has been revised to correct the emission unit description for the gasoline storage tank emission unit description to agree with the description listed in Section A.3 - Insignificant Activities. Additionally, the Rule citation included in the "Emissions Unit Description" box has been deleted to be consistent with the previous sections;

(15) The FESOP Reporting Forms located at the back of the permit have been updated to reflect all associated revised limits, and to consolidate the steel slag and the fuel usage reporting together.

(b) Upon further review, IDEM, OAQ made the following additional changes to the permit as described below in order to update the language to match the most current version of the applicable rule, to eliminate redundancy within the permit, and to provide clarification regarding the requirements of these conditions.

(1) Sections A.1 - General Information, A.2 - Emission Units and Pollution Control Equipment Summary, Section D.1 - Emissions Unit Operation Conditions for the Hot-Mix Asphalt Plant, and Section E.1 NSPS Requirements for the Hot-Mix Asphalt Plant, have been revised to clarify which (regulated) materials are processed, crushed, and/or ground at this stationary source.

(2) Sections A.2 - Emission Units and Pollution Control Equipment Summary, D.1 - Emissions Unit Operation Conditions for the Hot-Mix Asphalt Plant, and E.2 NSPS Requirements for the Recycled Asphalt Materials (RAM) Processing System have been revised to associate the recycled asbestos-free asphalt shingle (RAS) storage piles with the recycled asphalt materials (RAM) processing system emission unit description instead of the aggregate storage piles descriptions, since these materials are processed onsite prior to being added as an aggregate additive to the asphalt mix.

(3) On October 27, 2010, the Indiana Air Pollution Control Board issued revisions to 326 IAC 2. These revisions resulted in changes to the rule cites listed in the permit. These changes are not changes to the underlying provisions. The change is only to the citation of these rules in Section B - Operational Flexibility. Additionally, IDEM, OAQ has clarified the rule cites for the Preventive Maintenance Plan.

(4) IDEM, OAQ has clarified the Permittee's responsibility with regards to record keeping in Section C - General Record Keeping Requirements.

(5) IDEM, OAQ has clarified the interaction of the Quarterly Deviation and Compliance Monitoring Report and the Emergency Provisions in Section C - General Reporting Requirements and the Quarterly Deviation And Compliance Monitoring Report Form at the back of the Permit.

(6) Section D.1 - Fuel, Steel Slag, and HAP Limitations - Multiple Fuel and Steel Slag Usage Limitations, has been revised. The compliance statement included with the SO2 emission limit has been moved down to more correctly bracket the entire permit condition, since it applies to all the limitations contained in that section;

(7) Section D.1 - Volatile Organic Compounds (VOC), the language used to limit asphalt production has been revised to agree with the language used to limit asphalt production contained in Sections D.1 - PSD Limits, D.1 - FESOP Limits, and the FESOP Quarterly Report Form located at the back of the permit;

(8) Section D.1 - Fuel, Steel Slag, and HAP Limitations - Multiple Fuel and Steel Slag Usage Limitation, has been revised to incorporate the new annual HCL emissions limitation (ton/yr).

(9) Sections D.1 - Ash Content, Lead Content, Chlorine Content, and Hydrogen Chloride (HCl) Emissions and D.1 - Multiple Fuel and Steel Slag Usage Limitation have been revised to reflect the omission of "all other combustion equipment" from the fuel limits;

(10) Section D.1 - Multiple Fuel and Steel Slag Usage Limitation, has been revised to incorporate the new compliance determination equation for HCL. Additionally, the title has been revised for clarity;

(11) Sections D.1 - Baghouse Parametric Monitoring, and D.1 - Preventive Maintenance Plan, have been revised for clarity;

(12) Section D.1 - Reporting Requirements, has been revised to correct a reporting reference for asphalt production, to ensure continued compliance with 326 IAC 8-1-6;

(13) Section E.1 NSPS Requirements for the Hot-Mix Asphalt Plant, has been revised to remove the statement indicating that "Nonapplicable portions of the NSPS will not be included in the permit", since a complete copy of the rule has been attached to the back of the permit.

(14) Section E.2 - NSPS Requirements for the Recycled Asphalt Materials (RAM) Processing System *(formerly known as the Recycled Asphalt Pavement (RAP) System)*, has been revised to update the format of the section for clarity;

(15) The reporting forms have been revised to remove all references to the source mailing address. IDEM, OAQ will continue to maintain records of the mailing address; and

(16) IDEM, OAQ has updated Attachment C of the permit to contain the most recent version of New Source Performance Standards (NSPS), 40 CFR 60, Subpart OOO.

Note: The most recent version of 40 CFR Part 60, Subpart OOO is now included in its entirety in the permit, as Attachment C, but these changes are not shown in their entirety as bold and strikethrough text.

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

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

The Permittee owns and operates a stationary drum hot-mix asphalt plant, with the capability of producing warm-mix asphalt, and a cold-mix asphalt production operation. **Electric arc furnace steel mill slag and asbestos-free recycled asphalt shingles (RAS) are processed in the aggregate mix. Additionally, recycled asphalt pavement (RAP) is crushed and asbestos-free recycled asphalt shingles (RAS) are ground on-site.**

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

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

(a) One (1) drum dryer/mixer, constructed in 2005, capable of processing three hundred twenty-five (325) tons of raw material per hour per hour, processing steel slag **and asbestos-free recycled asphalt shingles (RAS)** in the aggregate mix, equipped with one (1) one hundred twenty (120) million British thermal units (MMBtu) per hour re-refined waste oil fired dryer burner, using natural gas, No. 2 distillate fuel oil, No. 4 distillate fuel oil, and biodiesel as backup fuels, controlling particulate emissions with one (1) jetpulse baghouse, and exhausting to one (1) stack, identified as EP1. This asphalt plant has the capability of producing warm-mix asphalt;

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(b) Material handling, screening, and conveying operations, constructed in 2005, and approved for modification in 2011, uncontrolled and exhausting to the atmosphere, and consisting of the following:

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

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~~(D) Asbestos-free shingle (ground factory seconds and/or post consumer waste) storage piles, with a combined maximum anticipated pile size of one and fifty hundredths (1.50) acres.~~

(D) Limestone storage piles, with a maximum anticipated pile size of eight (8.00) acres.

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(c) One (1) recycled asphalt **materials (RAM)**~~pavement (RAP)~~ **processing** system, constructed in 2005, **modified in 2011**, and approved for modification in **2013**~~2011~~, with a maximum throughput capacity of one hundred (150) tons of RAM per hour, uncontrolled and exhausting to the atmosphere, and **consisting of**~~including the following~~:

(1) One (1) **intermittent, portable, non-stationary,** recycled asphalt **materials (RAM)**~~pavement (RAP)~~ **crushing operation**~~Crusher~~, **identified as RAM Crusher,** ~~approved for construction in 2011,~~ **having a maximum rated capacity of 150 tons of RAM per hour, uncontrolled and exhausting to the atmosphere;**

Under 40 CFR 1068.30, General Compliance Provisions for Highway, Stationary, and Nonroad Programs, this unit is considered a portable, non-stationary, nonroad engine.

(2) One (1) 210 horsepower (hp), diesel fuel-fired portable crusher, identified as RAM Lump Breaker, manufactured in 1985 and initially constructed in 1990, approved for construction in 2013, with a

maximum rated capacity of 100 tons of recycled asphalt material (RAM) per hour, uncontrolled and exhausting to the atmosphere;

Under 40 CFR 63, Subpart ZZZZ (NESHAP for Stationary Reciprocating Internal Combustion Engines (RICE)), this unit is considered an affected facility.

(**3**~~2~~) Five (5) **RAM**~~(RAP)~~conveyors;
(**4**~~3~~) Two (2) **RAM**~~(RAP)~~ feeder bins;

(**5**~~4~~) **Two (2)**~~One (1)~~ **RAM**~~(RAP)~~ screen**s**; ~~and~~

(**6**~~5~~) **Recycled asphalt pavement (**RAP**)** storage piles, with a maximum anticipated pile size of one and fifty hundredths (1.50) acres; **and**

(7) Asbestos-free recycled asphalt shingle (ground factory seconds and/or post consumer waste) (RAS) storage piles, with a combined maximum anticipated pile size of one and fifty hundredths (1.50) acres.

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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:

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~~(b) One (1) natural gas fired inert gas generator, constructed in 2005, with a maximum rated heat input capacity of two hundred twenty-eight ten-thousandths (0.0228) MMBtu/hr, uncontrolled and exhausting to the atmosphere~~;

(**b**~~c~~) One (1) liquid asphalt storage tank, 64-22, horizontal, identified as Tank #3, with a maximum storage capacity of 20,000 gallons, uncontrolled and exhausting to the atmosphere;

(**c**~~d~~) One (1) liquid asphalt storage tank, 64-22, horizontal, identified as Tank #1, with a maximum storage capacity of 25,000 gallons, uncontrolled and exhausting to the atmosphere;

(**d**~~e~~) One (1) liquid asphalt storage tank, 64-22, horizontal, identified as Tank #2, with a maximum storage capacity of 18,000 gallons, uncontrolled and exhausting to the atmosphere;

(**e**~~f~~) One (1) No. 2 distillate fuel oil storage tank, vertical, identified as #2 Off Road Diesel, constructed in 2005, with a maximum storage capacity of 15,500 gallons, uncontrolled and exhausting to the atmosphere;

(**f**~~g~~) One (1) waste oil storage tank, vertical, identified as #4 Waste Oil, constructed in 2005, with a maximum storage capacity of 15,500 gallons, uncontrolled and exhausting to the atmosphere;

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

****

(**h**~~i~~) One (1) petroleum fuel, other than gasoline, dispensing facility, having a maximum storage capacity of less than or equal to 10,500 gallons and dispensing less than or equal to 230,000 gallons per month, including the following:

****

(**i**~~j~~) One (1) liquid asphalt storage tank, 64-22, horizontal, identified as Tank #4, with a maximum storage capacity of 10,000 gallons, uncontrolled and exhausting to the atmosphere;

(**j**~~k~~) One (1) liquid asphalt storage tank, 64-22, horizontal, identified as Tank #8, approved for construction in 2011, with a maximum storage capacity of 18,500 gallons, uncontrolled and exhausting to the atmosphere;

(**k**~~l~~) One (1) liquid asphalt storage tank, 64-22, horizontal, identified as Tank #7, approved for construction in 2011, with a maximum storage capacity of 25,000 gallons, uncontrolled and exhausting to the atmosphere;

(**l**~~m~~) One (1) liquid asphalt storage tank, 64-22, horizontal, identified as Tank #6, approved for construction in 2011, with a maximum storage capacity of 30,000 gallons, uncontrolled and exhausting to the atmosphere;

(**m**~~n~~) Replacement or repair of electrostatic precipitators, bags in baghouses and filters in other air filtration equipment;

(**n**~~o~~) Natural gas pressure regulator vents, excluding venting at oil and gas production facilities; and

(**o**~~p~~) Paved and unpaved roads and parking lots with public access [326 IAC 6-4].

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

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

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

****

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

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

(b) Emission Trades [326 IAC 2-8-15 ~~(c)~~ **(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 ~~(c)~~ **(b)**.

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

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C.18 General Record Keeping Requirements [326 IAC 2-8-4(3)] [326 IAC 2-8-5]

(a) Records of all required monitoring data, reports**,** and support information required by this permit shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. ~~These records shall be physically present or electronically accessible at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2)~~

~~years as long as they are available upon request. If the Commissioner makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.~~

(1) Support information includes the following:

(A) All calibration and maintenance records.

(B) All original strip chart recordings for continuous monitoring instrumentation.

(C) Copies of all reports required by the FESOP.

(2) Records of required monitoring information include the following:

(A) The date, place, as defined in this permit, and time of sampling or measurements.

(B) The dates analyses were performed.

(C) The company or entity that performed the analyses.

(D) The analytical techniques or methods used.

(E) The results of such analyses.

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

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

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C.19 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.

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SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description: Drum, Hot-Mix Asphalt Plant

(a) One (1) drum dryer/mixer, constructed in 2005, capable of processing three hundred twenty-five (325) tons of raw material per hour per hour, processing steel slag **and asbestos-free recycled asphalt shingles (RAS)** in the aggregate mix, equipped with one (1) one hundred twenty (120) million British thermal units (MMBtu) per hour re-refined waste oil fired dryer burner, using natural gas, No. 2 distillate fuel oil, No. 4 distillate fuel oil, and biodiesel as backup fuels, controlling particulate emissions with one (1) jetpulse baghouse, and exhausting to one (1) stack, identified as EP1. This asphalt plant has the capability of producing warm-mix asphalt;

****

(b) Material handling, screening, and conveying operations, constructed in 2005, approved for modification in 2011, and revised in 2011, uncontrolled and exhausting to the atmosphere, and consisting of the following:

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

****

~~(D) Asbestos-free shingle (ground factory seconds and/or post consumer waste) storage piles, with a combined maximum anticipated pile size of one and fifty hundredths (1.50) acres.~~

(D) Limestone storage piles, with a maximum anticipated pile size of eight (8.00) acres.

****

(c) One (1) recycled asphalt **materials (RAM)**~~pavement (RAP)~~ **processing** system, constructed in 2005, **modified in 2011**, and approved for modification in **2013**~~2011~~, with a maximum throughput capacity of one hundred (150) tons of RAM per hour, uncontrolled and exhausting to the atmosphere, and **consisting of**~~including the following~~:

(1) One (1) **intermittent, portable, non-stationary,** recycled asphalt **materials (RAM)**~~pavement (RAP)~~ **crushing operation**~~Crusher~~, **identified as RAM Crushe**~~approved for construction in 2011,~~ **having a maximum rated capacity of 150 tons of RAM per hour, uncontrolled and exhausting to the atmosphere;**

Under 40 CFR 1068.30, General Compliance Provisions for Highway, Stationary, and Nonroad Programs, this unit is considered a portable, non-stationary, nonroad engine.

(2) One (1) 210 horsepower (hp), diesel fuel-fired portable crusher, identified as RAM Lump Breaker, manufactured in 1985 and initially constructed in 1990, approved for construction in 2013, with a maximum rated capacity of 100 tons of recycled asphalt material (RAM) per hour, uncontrolled and exhausting to the atmosphere;

Under 40 CFR 63, Subpart ZZZZ (NESHAP for Stationary Reciprocating Internal Combustion Engines (RICE)), this unit is considered an affected facility.

(**3**~~2~~) Five (5) **RAM**~~(RAP)~~ conveyors;

(**4**~~3~~) Two (2) **RAM**~~(RAP)~~ feeder bins;

(**5**~~4~~) **Two (2)**~~One (1)~~ **RAM**~~(RAP)~~ screen**s**; ~~and~~

(**6**~~5~~) **Recycled asphalt pavement (**RAP**)** storage piles, with a maximum anticipated pile size of one and fifty hundredths (1.50) acres; **and**

(7) Asbestos-free recycled asphalt shingle (ground factory seconds and/or post consumer waste) (RAS) storage piles, with a combined maximum anticipated pile size of one and fifty hundredths (1.50) acres.

****

(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 Limits [326 IAC 2-2]

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

(a) The combined maximum amount of hot-mix and warm-mix asphalt produced shall not exceed **474,820**~~500,000~~ tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

****

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

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

(a) The combined maximum amount of hot-mix and warm-mix asphalt produced shall not exceed **474,820**~~500,000~~ tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

****

(e) NOx emissions from the dryer/mixer shall not exceed 0.055 pounds of NOx per ton of asphalt produced.

(**f**~~e~~) CO emissions from the dryer/mixer shall not exceed one hundred thirty thousandths (0.130) pounds of CO per ton of asphalt produced.

Compliance with these limits, combined with the potential to emit PM10, PM2.5, SO2, **NOx,** 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,** and CO to less than one hundred (100) tons per twelve (12) consecutive month period, each, and shall render 326 IAC 2-7 (Part 70 Permits) and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD) not applicable.

D.1.4 Fuel, Steel Slag**,** and HAP Limitations [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 limit the SO2, NOx, HCl**,** and combined HAP emissions from all emission units at this source, the Permittee shall comply with the following:

(a) Fuel and Slag Specifications

(**1**~~a~~) The sulfur content of the No. 2 and No. 4 distillate fuel oils~~, and the biodiesel~~, each, shall not exceed **0.75%** ~~five-tenths percent (0.5%)~~ by weight;

(2) The sulfur content of the biodiesel shall not exceed 0.50% by weight;

(**3**~~b~~) The sulfur content of the re-refined waste oil shall not exceed **1.50%**~~one percent (1.00%)~~ by weight;

(**4**~~c~~) The calendar-month average sulfur content of the steel slag shall not exceed **1.00%**~~sixty-six hundredths percent (0.66%)~~ by weight with compliance determined at the end of each month;

(**5**~~d~~) SO2 emissions from the steel slag used in the hot-mix asphalt dryer/mixer shall not exceed **0.0021**~~fourteen ten-thousandths (0.0014)~~ pounds of SO2 per ton of steel slag processed;

(**6**~~e~~) The ash content of the re-refined waste oil shall not exceed **1.50%**~~one percent (1.00%)~~ by weight;

(**7**~~f~~) The lead content of the re-refined waste oil shall not exceed **0.060%**~~thirty-thousandths percent (0.030%)~~ by weight;

(**8**~~g~~) The chlorine content of the re-refined waste oil shall not exceed **0.15%**~~ten-hundredths percent (0.10%)~~ by weight; and

(**9**~~h~~) The HCl emissions from the dryer/mixer burner shall not exceed **9.9**~~six and six tenths (6.6)~~ pounds of HCl per one thousand (1000) gallons of re-refined fuel oil burned, based on a chlorine content limit of **0.15%**~~ten hundredths percent (0.10%)~~ by weight.

(**b**~~i~~) Single Fuel Usage Limitations:
When combusting only one type of fuel per twelve (12) consecutive month period in the dryer/mixer burner the usage of fuel shall be limited as follows:

(1) Re-refined waste oil usage shall not exceed **744,910**~~1,211,028~~ gallons per twelve (12) consecutive month period, with compliance determined at the end of each month;

(2) Natural gas usage shall not exceed **709** ~~1,009~~ million cubic feet per twelve (12) consecutive month period, with compliance determined at the end of each month;

(3) No. 2 distillate fuel oil usage shall not exceed **1,542,279**~~2,507,340~~ gallons per twelve (12) consecutive month period, with compliance determined at the end of each month; ~~and~~

(4) No. 4 distillate fuel oil usage shall not exceed **1,460,024**~~2,373,615~~ gallons per twelve (12) consecutive month period, with compliance determined at the end of each month**;**~~.~~ **and**

(5) Biodiesel usage shall not exceed **2,313,418**~~2,507,340~~ gallons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(j) Multiple Fuel and Steel Slag Usage Limitation:
When combusting more than one fuel per twelve (12) consecutive month period in the dryer/mixer burner ~~and all other combustion equipment~~, in conjunction with the use of steel slag in the aggregate mix, emissions from the dryer/mixer ~~and all other combustion equipment~~ shall be limited as follows:

(1) Nitrogen oxides (NOx) emissions ~~from the dryer/mixer, and all other combustion equipment,~~ shall **not exceed 67.38**~~be less than one hundred (100)~~ tons per twelve (12) consecutive month period, with compliance determined at the end of each month, and

(2) Sulfur dioxide (SO2) emissions ~~from the dryer/mixer, and all other combustion equipment,~~ shall **not exceed 85.52**~~be less than one hundred (100)~~ tons per twelve (12) consecutive month period, with compliance determined at the end of each month. ~~Compliance with these limits, combined with the potential emissions from all other emission units at this source, shall limit the source-wide total potential to emit NOx and SO2 to less than one hundred (100) tons per twelve (12) consecutive month period, each, HCl to less than ten (10) tons per twelve (12) consecutive month period, and any combination of HAPs to less than twenty-five (25) tons per twelve (12) consecutive month period, and shall render 326 IAC 2-7 (Part 70 Permits), 326 IAC 2-2 (PSD), and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP)) not applicable.~~

(3) HCl emissions shall not exceed 3.69 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(**d**~~k~~) The Permittee shall only grind and process certified asbestos-free factory second and/or post consumer waste shingles as an additive in its aggregate mix.

Compliance with these limits, combined with the potential emissions from all other emission units at this source, shall limit the source-wide total potential to emit NOx and SO2 to less than one hundred (100) tons per twelve (12) consecutive month period, each, HCl to less than ten (10) tons per twelve (12) consecutive month period, and any combination of HAPs to less than twenty-five (25) tons per twelve (12) consecutive month period, and shall render 326 IAC 2-7 (Part 70 Permits), 326 IAC 2-2 (PSD), and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP)) not applicable.

****

D.1.7 Volatile Organic Compounds (VOC) [326 IAC 8-1-6]

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

(a) The **combined maximum amount of hot-mix and warm-mix** asphalt ~~production rate~~**produced** shall not exceed **474,820**~~500,000~~ tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

****

****

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

A Preventive Maintenance Plan is required for the RAP **crushing, RAS** grinding~~/crushing~~, material handling, screening, conveying, and material transfer points, dryer/mixer, and any/all related control device(s). Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

****

D.1.11 Sulfur Dioxide (SO2) Emissions and Sulfur Content

(a) Compliance with the sulfur dioxide emissions and sulfur content limitations in Conditions D.1.4(a)**(1)**, D.1.4(**a**~~b~~)**(2)**, **D.1.4(a)(3),** D.1.5(a), and D.1.5(b), shall be determined utilizing one of the following options. Pursuant to 326 IAC 7-2-1 (Sulfur Dioxide Reporting Requirements), compliance shall be demonstrated on a thirty (30) day calendar-month average.

****

(b) Compliance with the steel slag limitations established in Condition D.1.4(**a**~~c~~)**(4)** shall be determined utilizing one of the following options.

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

(a) In order to comply with Conditions D.1.4(**a**~~e~~)**(6)**, the Permittee shall demonstrate that the ash content of the fuel used for the dryer/mixer burner~~, and all other fuel combustion equipment,~~ does not exceed **1.50%** ~~one percent (1.00%)~~ by weight, when combusting re-refined waste oil, by providing a vendor analysis of fuel delivered accompanied by a vendor certification.

(b) In order to comply with Conditions D.1.4(**a**~~f~~)**(7)**, the Permittee shall demonstrate that the lead content of the fuel used in the dryer/mixer burner~~, and all other fuel combustion equipment,~~ does not exceed **0.060%** ~~thirty-thousandths percent (0.030%)~~ by weight, when combusting re-refined waste oil, by providing a vendor analysis of fuel delivered accompanied by a vendor certification.

(c) In order to comply with Conditions D.1.4(**a**~~g~~)**(8)** and D.1.4(**a**~~h~~)**(9)**, the Permittee shall demonstrate that the chlorine content of the fuel used in the dryer/mixer burner~~, and all other fuel combustion equipment,~~ does not exceed **0.15%**~~ten-hundredths percent (0.10%)~~ by weight, when combusting re-refined waste oil, by providing a vendor analysis of fuel delivered accompanied by a vendor certification.

D.1.13 Multiple Fuel and Steel Slag Usage ~~Limitation~~

In order to comply with Condition D.1.4(**cj**) when combusting more than one fuel per twelve (12) consecutive month period in the dryer/mixer burner~~ and all other combustion equipment~~, in conjunction with the use of steel slag in the aggregate mix, the Permittee shall limit fuel usage in the dryer/mixer burner according to the following formulas:

(a) Sulfur dioxide emission calculation

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

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 distillate fuel oil used in the last 12 months with less than or equal to 0.**7**5% sulfur content
F = gallons of No. 4 distillate fuel oil used in the last 12 months with less than or equal to 0.**7**5% sulfur
B = gallons of biodiesel used in last 12 months with less than or equal to 0.5% sulfur
W = gallons of re-refined waste oil used in last 12 months with less than or equal to 1.**5**0% sulfur
L = tons of steel slag used in last twelve (12) months
E_G = 0.60 lb/million cubic feet of natural gas
E_O = ~~71~~ **106.5**pounds/1000 gallons of No. 2 distillate fuel oil
E_F = ~~75~~ **112.5**pounds/1000 gallons of No. 4 distillate fuel oil
E_B = 71 pounds/1000 gallons of biodiesel
E_W = ~~147~~ **220.5** lb/1000 gallons of re-refined waste oil
E_L = **0.0021**~~fourteen ten-thousandths (0.0014)~~ pounds per ton of steel slag processed.

****

(c) Hydrogen chloride (HCL) emission calculation

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

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 = 9.9 lbs/1000 gallons of waste oil.

D.1.14 Shingle Asbestos Content

Pursuant to 326 IAC 2-8-4, compliance with Condition D.1.4(**d**~~k~~) shall be determined utilizing one or more of the following options:

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****

D.1.16 Baghouse Parametric Monitoring [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

(a) The Permittee shall record the pressure drop across the baghouse used in conjunction with the dryer/mixer at least once per day when the dryer/mixer is in operation. **When, for any one reading, the pressure drop across the baghouse is outside of the normal range, the Permittee shall take a reasonable response. The normal range for this unit is a pressure drop between five tenths (0.5) 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.** ~~When for any one reading, the pressure drop across the baghouse is outside the normal range of two (2.0) and six (6.0) inches of water or a range established during the latest stack test, 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. 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.

****

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D.1.18 Record Keeping Requirements [326 IAC 2-8-4][326 IAC 2-2][326 IAC 2-3][326 IAC 7-1.1-2] [326 IAC 7-2-1]

****

(c) To document compliance status with the steel slag limitations contained in Conditions D.1.4(**a**~~c~~)**(4)** and D.1.4(**a**~~d~~)**(5)**, the Permittee shall maintain monthly records of the information listed in items (1) through (4) below.

****

(d) To document the compliance status with the multiple fuel and steel slag usage limitations contained in Conditions D.1.4(**cj**) and D.1.13 when combusting more than one fuel per twelve (12) consecutive month period in the dryer/mixer burner ~~and all other combustion equipment~~, in conjunction with the use of steel slag in the aggregate mix, the Permittee shall maintain records of actual fuel usage, actual slag usage, and equivalent nitrogen oxides, sulfur dioxide, and hydrogen chloride emission rates for each fuel, and the slag, used at the source per month.

****

D.1.19 Reporting Requirements

A quarterly summary of the information to document the compliance status with Conditions D.1.1(a), D.1.2, D.1.3(a), D.1.4(**b**~~i~~), D.1.4(**cj**), D.1.**7**~~6~~(a) and D.1.13, 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 Requirements 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 an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

****

SECTION D.4 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description: Paved & Unpaved Roads

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

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

****

SECTION E.1 NSPS REQUIREMENTS

Emissions Unit Description: Drum, hot-mix asphalt plant

(a) One (1) drum dryer/mixer, constructed in 2005, capable of processing three hundred twenty-five (325) tons of raw material per hour per hour, processing steel slag **and asbestos-free recycled asphalt shingles (RAS)** in the aggregate mix, equipped with one (1) one hundred twenty (120) million British thermal units (MMBtu) per hour re-refined waste oil fired dryer burner, using natural gas, No. 2 distillate fuel oil, No. 4 distillate fuel oil, and biodiesel as backup fuels, controlling particulate emissions with one (1) jetpulse baghouse, and exhausting to one (1) stack, identified as EP1. This asphalt plant has the capability of producing warm-mix asphalt;

****

(b) Material handling, screening, and conveying operations, constructed in 2005, approved for modification in 2011, and revised in 2011, uncontrolled and exhausting to the atmosphere, and consisting of the following:

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

****

~~(D) Asbestos-free shingle (ground factory seconds and/or post consumer waste) storage piles, with a combined maximum anticipated pile size of one and fifty hundredths (1.50) acres.~~

(D) Limestone storage piles, with a maximum anticipated pile size of eight (8.00) acres.

****

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

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

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

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~~Nonapplicable portions of the NSPS will not be included in the permit.~~

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SECTION E.2 NSPS REQUIREMENTS

Emissions Unit Description: Recycled Asphalt **Materials (RAM)**~~pavement (RAP)~~ **Processing** System

(c) One (1) recycled asphalt **materials (RAM)**~~pavement (RAP)~~ **processing** system, constructed in 2005, **modified in 2011**, and approved for modification in **2013**~~2011~~, with a maximum throughput capacity of one hundred (150) tons of RAM per hour,

uncontrolled and exhausting to the atmosphere, and **consisting of**~~including the following~~:

(1) One (1) **intermittent, portable, non-stationary,** recycled asphalt **materials (RAM)**~~pavement (RAP)~~ **crushing operation**~~Crusher~~, **identified as RAM Crusher,** ~~approved for construction in 2011,~~ **having a maximum rated capacity of 150 tons of RAM per hour, uncontrolled and exhausting to the atmosphere;**

Under 40 CFR 1068.30, General Compliance Provisions for Highway, Stationary, and Nonroad Programs, this unit is considered a portable, non-stationary, nonroad engine.

(2) One (1) 210 horsepower (hp), diesel fuel-fired portable crusher, identified as RAM Lump Breaker, manufactured in 1985 and initially constructed in 1990, approved for construction in 2013, with a maximum rated capacity of 100 tons of recycled asphalt material (RAM) per hour, uncontrolled and exhausting to the atmosphere;

Under 40 CFR 63, Subpart ZZZZ (NESHAP for Stationary Reciprocating Internal Combustion Engines (RICE)), this unit is considered an affected facility.

(**3**~~2~~) Five (5) **RAM**~~(RAP)~~ conveyors;

(**4**~~3~~) Two (2) **RAM**~~(RAP)~~ feeder bins;

(**5**~~4~~) **Two (2)**~~One (1)~~ **RAM**~~(RAP)~~ screen**s**; ~~and~~

(**6**~~5~~) **Recycled asphalt pavement (**RAP**)** storage piles, with a maximum anticipated pile size of one and fifty hundredths (1.50) acres; **and**

(7) Asbestos-free recycled asphalt shingle (ground factory seconds and/or post consumer waste) (RAS) storage piles, with a combined maximum anticipated pile size of one and fifty hundredths (1.50) acres.

****

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

The Permittee shall comply with the following provisions of 40 CFR Part 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 Part 60, Subpart OOO, for the recycled asphalt materials (RAM) processing system, including the RAM Crusher and the RAM Lump Breaker:

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

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

~~Pursuant to CFR Part 60, Subpart OOO, the Permittee shall comply with the provisions of 40 CFR Part 60, Subpart OOO, which are incorporated by reference as 326 IAC 12-1 for the recycled asphalt pavement (RAP) system as specified as follows. Pursuant to 40 CFR 60.670, the affected facility to which the provisions of this subpart apply is each crusher and grinding mill in each recycled asphalt pavement (RAP) system, at hot mix asphalt facilities, that reduce the size of nonmetallic minerals embedded in recycled asphalt pavement.~~

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

~~(1) 40 CFR 60.670;~~
~~(2) 40 CFR 60.671;~~
~~(3) 40 CFR 60.672;~~
~~(4) 40 CFR 60.673;~~
~~(5) 40 CFR 60.674;~~
~~(6) 40 CFR 60.675; and~~
~~(7) 40 CFR 60.676.~~

~~An affected facility that is subject to the provisions of Subpart I, or that follows in the plant process any facility subject to the provisions of Subpart I, is not subject to the provisions of this Subpart.~~

~~The provisions of 40 CFR 60 Subpart A – General Provisions, which are incorporated as 326 IAC 12-1, apply to the recycled asphalt pavement (RAP) facility except when otherwise specified in 40 CFR 60 Subpart OOO.~~

E.2.3 Testing Requirements [40 CFR Part 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, not later than five (5) years from the most recent valid compliance demonstration, utilizing methods approved by the Commissioner. This test shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. 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.

****

SECTION E.3 NESHAP REQUIREMENTS

Emissions Unit Description [326 IAC 2-8-4(10)]: RAM Lump Breaker

(c) One (1) recycled asphalt materials (RAM) processing system, constructed in 2005, modified in 2011, and approved for modification in 2013, with a maximum throughput capacity of one hundred (150) tons of RAM per hour, uncontrolled and exhausting to the atmosphere, and consisting of:

(2) One (1) 210 horsepower (hp), diesel fuel-fired portable crusher, identified as RAM Lump Breaker, manufactured in 1985 and initially constructed in 1990, approved for construction in 2013, with a maximum rated capacity of 100 tons of recycled asphalt material (RAM) per hour, uncontrolled and exhausting to the atmosphere;

Under 40 CFR 63, Subpart ZZZZ (NESHAP for Stationary Reciprocating Internal Combustion Engines (RICE)), this unit 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.)

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

E.3.1 General Provisions Relating to National Emission Standards for Hazardous Air Pollutants under 40 CFR Part 63 [326 IAC 20-1] [40 CFR Part 63, Subpart A]

(a) Pursuant to 40 CFR 63.6665, the Permittee shall comply with the provisions of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated as 326 IAC 20-1-1, apply to the souce, as specified in Table 8 of 40 CFR Part 63, Subpart ZZZZ.

(b) Pursuant to 40 CFR 63.12, 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.3.2 National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Stationary Reciprocating Internal Combustion Engines (RICE) [40 CFR 63, Subpart ZZZZ] [326 IAC 20-82]

Pursuant to 40 CFR Part 60, Subpart ZZZZ, the Permittee shall comply with the provisions of 40 CFR Part 60, Subpart ZZZZ (4Z) (included as Attachment D), which are incorporated by reference as 326 IAC 20-82, for the 210 horsepower (hp), diesel fuel-fired, portable crusher, identified as RAM Lump Breaker, with a compliance date of May 3, 2013, or upon start up if later, as follows:

(a)	**40 CFR 63.6580;**	**(k)**	**40 CFR 63.6645(a)(5);**
(b)	**40 CFR 63.6585;**	**(l)**	**40 CFR 63.6655;**
(c)	**40 CFR 63.6590(a)(1)(iii) and (iv);**	**(m)**	**40 CFR 63.6660;**
(d)	**40 CFR 63.6595(a)(1), (b), (c);**	**(n)**	**40 CFR 63.6665;**
(e)	**40 CFR 63.6603(a);**	**(o)**	**40 CFR 63.6670;**
(f)	**40 CFR 63.6605;**	**(p)**	**40 CFR 63.6675;**
(g)	**40 CFR 63.6625(e)(4), (h), (i);**	**(q)**	**Table 2d (item 1);**
(h)	**40 CFR 63.6635;**	**(r)**	**Table (item 9); and**
(i)	**40 CFR 63.6640(a), (b), and (e);**	**(s)**	**Table 8.**

****

SECTION E.4 NSPS & NESHAP REQUIREMENTS

Emissions Unit Description [326 IAC 2-8-4(10)]: RAM Crusher

(c) One (1) recycled asphalt materials (RAM) processing system, constructed in 2005, modified in 2011, and approved for modification in 2013, with a maximum throughput capacity of one hundred (150) tons of RAM per hour, uncontrolled and exhausting to the atmosphere, and consisting of:

(1) One (1) intermittent, portable, non-stationary, recycled asphalt materials (RAM) crushing operation, identified as RAM Crusher, having a maximum rated capacity of 150 tons of RAM per hour, uncontrolled and exhausting to the atmosphere;

Under 40 CFR 1068.30, General Compliance Provisions for Highway, Stationary, and Nonroad Programs, this unit is considered a portable, non-stationary, nonroad engine.

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

E.4.1 Nonroad Engines [326 IAC 12][40 CFR 60, Subpart IIII][326 IAC 20-82][40 CFR 63, Subpart ZZZZ][40 CFR 1068.30]

In order to render the requirements of the Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (40 CFR Part 60, Subpart IIII, which are incorporated by reference as 326 IAC 12, and the National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (40 CFR 63, Subpart ZZZZ), which are incorporated by reference as 326 IAC 20-82, not applicable, and to ensure the portable, non-stationary, RAM crusher is a nonroad engine, as defined at 40 CFR 1068.30 (excluding paragraph (2)(ii) of that definition), the Permittee shall comply with the following:

(a) The portable, non-stationary, RAM crusher shall remain at a location for a period not to exceed twelve (12) consecutive months.

(b) Any portable, non-stationary, RAM crusher that replaces a portable, non-stationary, RAM crusher at a location and that is intended to perform the same or similar function as the portable, non-stationary, RAM crusher replaced will be included in calculating the consecutive time period.

(c) For the purposes of this condition, and pursuant to 40 CFR 1069.30 Nonroad Engine (2)(iii), a location is any single site at a building, structure, facility, or installation.

Compliance with these limits shall render the requirements of the Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (40 CFR Part 60, Subpart IIII) and the National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (40 CFR 63, Subpart ZZZZ) not applicable.

E.4.2 Record Keeping Requirements

(a) To document the compliance status with Condition E.4.1(a), the Permittee shall maintain records of the dates of installation and removal of the portable, non-stationary, RAM crusher as the unit is installed and removed.

(b) To document the compliance status with Condition E.4.1(b), the Permittee shall maintain records of the make, model, horsepower rating, manufacture date, and model year of each portable, non-stationary, RAM crusher brought onto the site.

(c) Section C - General Record Keeping Requirements contains the Permittee's obligation with regard to the records required to be maintained by this condition.

****

SECTION E.~~5~~**3** NESHAP REQUIREMENTS

Emissions Unit Description~~ [326 IAC 2-6.1-5(a)(1)~~: Gasoline Dispensing Facilities **(GDF)**

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

(1) One (1) gasoline storage tank, constructed in 2005, approved for modification in 2011, with a maximum storage capacity of 560 gallons, uncontrolled and exhausting to the atmosphere;

Under 40 CFR 63, Subpart CCCCCC: National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities, the gasoline fuel transfer and dispensing operation, including the **560**~~3,000~~ gallon gasoline storage tank, is considered an affected facility.

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

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

E.~~5~~**3**.1 National Emission Standards for Hazardous Air Pollutants (NESHAPs): Area Source Standards for Source Category: Gasoline Dispensing Facilities [40 CFR 63, Subpart CCCCCC] [326 IAC 20]

****

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

****

ALL FORMS:

****

~~Mailing Address: PO Box 5228, Evansville, IN 47716-5226~~

****

FESOP QUARTERLY REPORT FORM:

****

~~Mailing Address: PO Box 5228, Evansville, IN 47716-5226~~

****

Parameter:	Combined Hot-Mix and Warm-mix Asphalt Production
Limit:	The combined maximum annual hot-mix and warm-mix asphalt production shall not exceed **474,820**~~500,000~~ tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

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

FESOP QUARTERLY REPORT

Source Name: J.H. Rudolph & Company, Inc. - St. Croix Plant
Source Address: 12050 Optical Road, English, Indiana 47118
FESOP Permit No.: F123 28142 00025
Facility: Dryer/Mixer Burner

Parameter: Fuel & Steel Slag Usage / SO2, NOx, & HCl emissions

Emission Limits: ***Sulfur dioxide (SO_2)*** **emissions shall not exceed 82.52 tons per twelve (12) consecutive month period, with compliance determined at the end of each month, using the equation found in Condition D.1.13(a).**

Nitrogen Oxides (NOx) **emissions shall not exceed 67.38 tons per twelve (12) consecutive month period, with compliance determined at the end of each month, using the equation found in Condition D.1.13(b).**

Hydrogen Chloride (HCL) **emissions shall not exceed 3.69 tons per twelve (12) consecutive month period, with compliance determined at the end of each month, using the equation found in Condition D.1.13(c).**

Fuel & Slag Limits: **When combusting only one type of fuel per twelve (12) consecutive month period in the dryer/mixer burner, 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)
Re-refined Waste Oil (gallons)	744,910
Natural Gas (million cubic feet)	709
No. 2 Fuel Oil (gallons)	1,542,279
No. 4 Fuel Oil (gallons)	1,460,024
Biodiesel (gallons)	2,313,418
Steel Slag (tons)	375,000

****

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

FESOP Quarterly Report

Source Name: J.H. Rudolph & Company, Inc. - St. Croix Plant
Source Address: 12050 Optical Road, English, Indiana 47118
Mailing Address: PO Box 5228, Evansville, IN 47716-5226
FESOP Permit No.: F123-28142-00025
Facility: Dryer/mixer burner

Parameter: Steel Slag Usage

Limit: Maximum steel slag usage shall not exceed 375,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

QUARTER:_____ YEAR: _____

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

□ No deviation occurred in this quarter.

□ Deviation/s occurred in this quarter.
Deviation has been reported on:_____

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

****

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

FESOP Quarterly Report

Source Name: J.H. Rudolph & Company, Inc. - St. Croix Plant
Source Address: 12050 Optical Road, English, Indiana 47118
Mailing Address: PO Box 5228, Evansville, IN 47716-5226
FESOP Permit No.: F123-28142-00025
Facility: Dryer/mixer burner

Parameter: Single Fuel Usage

Limit: Sulfur Dioxide (SO2) and Nitrogen Oxides (NOx) emissions shall not exceed one hundred (100) tons per twelve (12) consecutive month period, each. Additionally, Hydrogen Chloride (HCl) emissions shall not exceed ten (10) tons per twelve (12) consecutive month period, and any combination of HAPs shall not exceed twenty-five (25) tons per twelve (12) consecutive month period. When combusting only one type of fuel in the dryer/mixer burner, the usage of fuel shall be limited as follows:

Fuel Type (units)	Fuel Usage Limit (per 12 consecutive month period)
Natural Gas (million cubic feet)	1,009
No. 2 distillate Fuel Oil ≤ 0.5 wt% sulfur (gallons)	2,507,340
No. 4 distillate fuel oil ≤ 0.5 wt% sulfur (gallons)	2,373,615
Biodiesel ≤ 0.5 wt% sulfur (gallons)	2,507,340
Re-refined Waste Oil ≤ 1.0 wt% sulfur (gallons)	1,211,028

QUARTER: _____ YEAR: _____

The following fuel was the only fuel combusted over the previous 12-month period:_____

(combustion of more than one fuel requires the use of the "Multiple Fuel Quarterly Report" form)

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

☐ No deviation occurred in this reporting period.

☐ _____Deviation/s occurred in this reporting period. Deviation has been reported on: _____

Submitted by: _____ Date: _____

Title / Position: _____ Phone: _____

Signature: _____

****

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

FESOP Quarterly Report

Page 1 of 2

Source Name: J.H. Rudolph & Company, Inc. - St. Croix Plant
Source Address: 12050 Optical Road, English, Indiana 47118
Mailing Address: PO Box 5228, Evansville, IN 47716-5226
FESOP Permit No.: F123-28142-00025
Facility: Dryer/mixer burner
Parameters: Multiple Fuel & Steel Slag Usage / Sulfur Dioxide (SO2) & Nitrogen Oxides (NOx) Emissions

Limit: Sulfur Dioxide (SO2) emissions from the entire source shall not exceed one hundred (100) tons per twelve (12) consecutive month period. When combusting more than one fuel in the dryer/mixer burner and all other combustion equipment, in conjunction with the use of steel slag in the aggregate mix, the Permittee shall limit fuel usage according to the following equation:

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

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 distillate fuel oil used in last 12 months with less than or equal to 0.5% sulfur content
F = gallons of No. 4 distillate fuel oil used in last 12 months with less than or equal to 0.5% sulfur
B = gallons of biodiesel used in last 12 months with less than or equal to 0.5% sulfur
W = gallons of re-refined waste oil used in last 12 months with less than or equal to 1.0% sulfur
L = tons of steel slag used in last twelve (12) months
E_G = 0.60 lb/million cubic feet of natural gas
E_O = 71 pounds/1000 gallons of No. 2 distillate fuel oil
E_F = 75 pounds/1000 gallons of No. 4 distillate fuel oil
E_B = 71 pounds/1000 gallons of biodiesel
E_W = 147 lb/1000 gallons of re-refined waste oil
E_L = fourteen ten-thousandths (0.0014) pounds per ton of steel slag processed.

Limit: Nitrogen oxides (NOx) emissions from the entire source shall not exceed one hundred (100) tons per twelve (12) consecutive month period. When combusting more than one fuel in the dryer/mixer burner, the Permittee shall limit fuel usage according to the following equation:

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

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 distillate fuel oil used in last 12 months
F = gallons of No. 4 distillate fuel oil used in last 12 months
B = gallons of biodiesel used in last 12 months
W = gallons of re-refined waste oil used in last 12 months
E_G = 190 lb/million cubic feet of natural gas
E_O = 24 lb/1000 gallons of No. 2 distillate fuel oil
E_F = 47 lb/1000 gallons of No. 4 distillate fuel oil
E_B = 26.4 lb/1000 gallons of biodiesel
E_W = 19 lb/1000 gallons of re-refined waste oil

****

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

QUARTER:_____ YEAR:_____

Month	Fuel Types (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)			G				
	No. 2 distillate Fuel Oil ≤ **0.75**~~0.5~~ wt% sulfur (gallons)			O				
	No. 4 distillate Fuel Oil ≤ **0.75**~~0.5~~ wt% sulfur (gallons)			R				
	Biodiesel ≤ 0.50 wt% sulfur (gallons)			B				
	Re-refined Waste Oil ≤ **1.50**~~1.0~~ wt% sulfur (gallons)			U				
	Steel slag ≤ **1.00**~~0.66~~% wt% sulfur (tons)			L				
Month 2	Natural Gas (million cubic feet)			G				
	No. 2 distillate Fuel Oil ≤ **0.75**~~0.5~~ wt% sulfur (gallons)			O				
	No. 4 distillate Fuel Oil ≤ **0.75**~~0.5~~wt% sulfur (gallons)			R				
	Biodiesel ≤ 0.50 wt% sulfur (gallons)			B				
	Re-refined Waste Oil ≤ **1.50**~~1.0~~ wt% sulfur (gallons)			U				
	Steel slag ≤ **1.00**~~0.66~~% wt% sulfur (tons)			L				
Month 3	Natural Gas (million cubic feet)			G				
	No. 2 distillate Fuel Oil ≤ **0.75**~~0.5~~ wt% sulfur (gallons)			O				
	No. 4 distillate Fuel Oil ≤ **0.75**~~0.5~~wt% sulfur (gallons)			R				
	Biodiesel ≤ 0.50 wt% sulfur (gallons)			B				
	Re-refined Waste Oil ≤ **1.50**~~1.0~~ wt% sulfur (gallons)			U				
	Steel slag ≤ **1.00**~~0.66~~% wt% sulfur (tons)			L				

☐ 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: _____

****

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

****

~~Mailing Address: PO Box 5228, Evansville, IN 47716-5226~~

****

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".

****

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 February 19, 2003.

The construction and operation of this proposed revision shall be subject to the conditions of the attached proposed FESOP Significant Permit Revision No. 123-32840-00025. The staff recommends to the Commissioner that this FESOP Significant Permit Revision 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) 233-9327 or toll free at 1-800-451-6027 extension 3-9327.

(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.in.gov/idem

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

Company Name: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
Permit Number: 123-32840-00025
Reviewer: Hannah L. Desrosiers

Asphalt Plant Maximum Capacity - Drum Mix

Maximum Hourly Asphalt Production =	325	ton/hr					
Maximum Annual Asphalt Production =	2,847,000	ton/yr					
Maximum Annual Blast Furnace Slag Usage =	0	ton/yr	0	% sulfur			
Maximum Annual Steel Slag Usage =	2,847,000	ton/yr	1.00	% sulfur			
Maximum Dryer Fuel Input Rate =	120.0	MMBtu/hr					
Natural Gas Usage =	1,051	MMCF/yr					
No. 2 Fuel Oil Usage =	7,508,571	gal/yr, and	0.75	% sulfur			
No. 4 Fuel Oil Usage =	7,508,571	gal/yr, and	0.75	% sulfur			
Residual (No. 5 or No. 6) Fuel Oil Usage =	0	gal/yr, and	0	% sulfur			
Propane Usage =	0	gal/yr, and	0	gr/100 ft3 sulfur			
Butane Usage =	0	gal/yr, and	0	gr/100 ft3 sulfur			
Biodiesel Usage =	7,508,571	gal/yr, and	0.50	% sulfur			
Used/Waste Oil Usage =	7,508,571	gal/yr, and	1.50	% sulfur	1.50 % ash	0.150 % chlorine,	0.060 % lead
Diesel Fuel Usage - Generator < 600 HP =	93,974	gal/yr,and					
Diesel Fuel Usage - Generator > 600 HP =	0	gal/yr	0.00	% 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	lb/ton of slag processed
Unlimited Steel Slag SO2 Dryer/Mixer Emission Factor =	0.0021	lb/ton of slag processed

Unlimited/Uncontrolled Emissions

	Unlimited/Uncontrolled Potential to Emit after Issuance (tons/year)										
	Criteria Pollutants							Greenhouse Gas Pollutants	Hazardous Air Pollutants		
Process Description	**PM**	**PM10**	**PM2.5**	**SO2**	**NOx**	**VOC**	**CO**	**CO_2e**	**Total HAPs**	**Worst Case HAP**	
Ducted Emissions											
Dryer Fuel Combustion (worst case)	360.41	287.20	287.20	827.82	176.45	3.75	44.15	90,979.90	52.08	37.17	(hydrogen chloride)
Dryer/Mixer (Process)	39,858.00	9,252.75	2,135.25	82.56	78.29	45.55	185.06	47,334.22	15.17	4.41	(formaldehyde)
Dryer/Mixer Slag Processing (worst case)	0	0	0	3.02	0	0	0	0.00	0	0	
Hot Oil Heater Fuel Combustion/Process (worst case)	6.35	5.06	5.06	14.59	3.11	0.07	0.78	1,852.74	0.918	0.655	(hexane)
Diesel-Fired Generator < 600 HP (RAM Breaker)	2.02	2.02	2.02	1.89	28.51	2.31	6.14	1,061.30	0.025	0.008	(formaldehyde)
Diesel-Fired Generator < 600 HP (RAM Crusher)*	0	0	0	0	0	0	0	0	0	0	N/A
Diesel-Fired Generator > 600 HP	0	0	0	0	0	0	0	0	0	0	
Worst Case Emissions**	**39,866.38**	**9,259.84**	**2,142.34**	**847.32**	**208.08**	**47.93**	**191.98**	**93,893.94**	**53.03**	**37.17**	(hydrogen chloride)
Fugitive Emissions											
Asphalt Load-Out, Silo Filling, On-Site Yard	1.58	1.58	1.58	0	0	24.38	4.10	0	0.41	0.13	(formaldehyde)
Material Storage Piles	5.56	1.94	1.94	0	0	0	0	0	0	0	N/A
Material Processing and Handling	9.20	4.35	0.66	0	0	0	0	0	0	0	N/A
Material Crushing, Screening, and Conveying	45.17	16.50	16.50	0	0	0	0	0	0	0	N/A
Unpaved and Paved Roads (worst case)	101.11	25.77	2.58	0	0	0	0	0	0	0	N/A
Cold Mix Asphalt Production	0	0	0	0	0	34,213.82	0	0	8,924.23	3,079.24	(xylenes)
Gasoline Fuel Transfer and Dispensing	0	0	0	0	0	0.02	0	0	0.01	0.002	(xylenes)
Volatile Organic Liquid Storage Vessels	0	0	0	0	0	negl	0	0	negl	0	
Total Fugitive Emissions	**162.61**	**50.14**	**23.26**	**0**	**0**	**34,238.23**	**4.10**	**0**	**8,924.64**	**3,079.25**	(xylenes)
Totals Unlimited/Uncontrolled PTE	**40,028.99**	**9,309.98**	**2,165.59**	**847.32**	**208.08**	**34,286.16**	**196.08**	**93,893.94**	**8,977.67**	**3,079.25**	(xylenes)

negl = negligible
RAM = recycled asphalt materials: including recycled asphalt pavement (RAP) and/or recycled asphalt shingles (RAS).
Worst Case Fuel Combustion is based on the fuel with the highest emissions for each specific pollutant.
* The crusher has been determined a nonroad vehicle under 40 CFR 60, and 40 CFR 63, therefore, the combustion emissions are not counted toward PSD and TV applicablilty.
** 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: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
Permit Number: 123-32840-00025
Reviewer: Hannah L. Desrosiers

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

Maximum Capacity

Maximum Fuel Input Rate =	120	MMBtu/hr						
Natural Gas Usage =	1,051	MMCF/yr						
No. 2 Fuel Oil Usage =	7,508,571	gal/yr, and	0.75	% sulfur				
No. 4 Fuel Oil Usage =	7,508,571	gal/yr, and	0.75	% sulfur				
Residual (No. 5 or No. 6) Fuel Oil Usage =	0	gal/yr, and	0	% sulfur				
Propane Usage =	0	gal/yr, and	0	gr/100 ft3 sulfur				
Butane Usage =	0	gal/yr, and	0	gr/100 ft3 sulfur				
Biodiesel Usage =	7,508,571		0.50	% sulfur				
Used/Waste Oil Usage =	7,508,571	gal/yr, and	1.50	% sulfur	1.50	% ash	0.150 % chlorine,	0.060 % lead

Unlimited/Uncontrolled Emissions

	Emission Factor (units)								Unlimited/Uncontrolled Potential to Emit (tons/yr)								
Criteria Pollutant	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	No. 4 Fuel Oil* (lb/kgal)	Residual (No. 5 or No. 6) Fuel Oil (lb/kgal)	Propane (lb/kgal)	Butane (lb/kgal)	Biodiesel** (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)	Biodiesel (tons/yr)	Used/ Waste Oil (tons/yr)	**Worse Case Fuel (tons/yr)**
PM	1.9	2.0	7.0	3.22	0.5	0.6	2.0	96.0	1.00	7.51	26.28	0	0	0	7.51	360.41	**360.41**
PM10/PM2.5	7.6	3.3	8.3	4.72	0.5	0.6	3.3	76.5	3.99	12.39	31.16	0	0	0	12.39	287.20	**287.20**
SO2	0.6	106.5	112.5	0	0	0	106.5	220.5	0.32	399.83	422.36	0	0	0	399.83	827.82	**827.82**
NOx	190	24.0	47.0	47.0	13.0	15.0	26.4	19.0	99.86	90.10	176.45	0	0	0	99.11	71.33	**176.45**
VOC	5.5	0.20	0.20	0.28	1.00	1.10	0.20	1.0	2.89	0.75	0.75	0	0	0	0.75	3.75	**3.75**
CO	84	5.0	5.0	5.0	7.5	8.4	5.0	5.0	44.1504	18.77	18.77	0	0	0	18.77	18.77	**44.15**
Hazardous Air Pollutant																	
HCl								9.9								37.17	**37.17**
Antimony			5.25E-03	5.25E-03				negl			1.97E-02	0				negl	**2.0E-02**
Arsenic	2.0E-04	5.6E-04	1.32E-03	1.32E-03			5.6E-04	1.1E-01	1.1E-04	2.10E-03	4.96E-03	0			2.10E-03	4.13E-01	**4.1E-01**
Beryllium	1.2E-05	4.2E-04	2.78E-05	2.78E-05			4.2E-04	negl	6.3E-06	1.58E-03	1.04E-04	0			1.58E-03	negl	**1.6E-03**
Cadmium	1.1E-03	4.2E-04	3.98E-04	3.98E-04			4.2E-04	9.3E-03	5.8E-04	1.58E-03	1.49E-03	0			1.58E-03	3.49E-02	**3.5E-02**
Chromium	1.4E-03	4.2E-04	8.45E-04	8.45E-04			4.2E-04	2.0E-02	7.4E-04	1.58E-03	3.17E-03	0			1.58E-03	7.51E-02	**7.5E-02**
Cobalt	8.4E-05		6.02E-03	6.02E-03				2.1E-04	4.4E-05		2.26E-02	0				7.88E-04	**2.3E-02**
Lead	5.0E-04	1.3E-03	1.51E-03	1.51E-03			1.3E-03	3.3	2.6E-04	4.73E-03	5.67E-03	0			4.73E-03	1.2E+01	**12.39**
Manganese	3.8E-04	8.4E-04	3.00E-03	3.00E-03			8.4E-04	6.8E-02	2.0E-04	3.15E-03	1.13E-02	0			3.15E-03	2.55E-01	**0.26**
Mercury	2.6E-04	4.2E-04	1.13E-04	1.13E-04			4.2E-04		1.4E-04	1.58E-03	4.24E-04	0			1.58E-03		**1.6E-03**
Nickel	2.1E-03	4.2E-04	8.45E-02	8.45E-02			4.2E-04	1.1E-02	1.1E-03	1.58E-03	3.17E-01	0			1.58E-03	4.13E-02	**0.317**
Selenium	2.4E-05	2.1E-03	6.83E-04	6.83E-04			2.1E-03	negl	1.3E-05	7.88E-03	2.56E-03	0			7.88E-03	negl	**7.9E-03**
1.1.1-Trichloroethane			2.36E-04	2.36E-04							8.86E-04	0					**8.9E-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					1.1E-03		8.03E-04	0					**1.1E-03**
Bis(2-ethylhexyl)phthalate								2.2E-03								8.26E-03	**8.3E-03**
Dichlorobenzene	1.2E-03							8.0E-07	6.3E-04							3.00E-06	**6.3E-04**
Ethylbenzene			6.36E-05	6.36E-05							2.39E-04	0					**2.4E-04**
Formaldehyde	7.5E-02	6.10E-02	3.30E-02	3.30E-02			6.10E-02		3.9E-02	2.29E-01	1.24E-01	0			2.29E-01		**0.229**
Hexane	1.8E+00								0.95								**0.946**
Phenol								2.4E-03								9.01E-03	**9.0E-03**
Toluene	3.4E-03		6.20E-03	6.20E-03					1.8E-03		2.33E-02	0					**2.3E-02**
Total PAH Haps	negl		1.13E-03	1.13E-03				3.9E-02	negl		4.24E-03	0				1.47E-01	**1.5E-01**
Polycyclic Organic Matter		3.30E-03					3.30E-03			1.24E-02					1.24E-02		**1.2E-02**
Xylene			1.09E-04	1.09E-04							4.09E-04	0					**4.1E-04**
								Total HAPs	0.99	0.27	0.54	0	0	0	0.27	50.54	**52.08**
								Worst Single HAP	0.95 (hexane)	0.23 (formaldehyde)	0.32 (formaldehyde)	0	0	0	0.23 (formaldehyde)	37.17 (HCL)	**37.17 (HCL)**

Methodology

Natural Gas Usage (MMCF/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 MMCF/1,000 MMBtu]
Oil Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.140 MMBtu]
Propane Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.0905 MMBtu]
Butane Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.0974 MMBtu]
Natural Gas: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Natural Gas Usage (MMCF/yr)] * [Emission Factor (lb/MMCF)] * [ton/2000 lbs]
All Other Fuels: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Fuel Usage (gals/yr)] * [Emission Factor (lb/kgal)] * [kgal/1000 gal] * [ton/2000 lbs]
Sources of AP-42 Emission Factors for fuel combustion:

Natural Gas :	AP-42 Chapter 1.4 (dated 7/98), Tables 1.4-1, 1.4-2, 1.4-3, and 1.4-4
No. 2, No.4, and No.6 Fuel Oil:	AP-42 Chapter 1.3 (dated 5/10), Tables 1.3-1, 1.3-2, 1.3-3, 1.3-8, 1.3-9, 1.3-10, and 1.3-11
Propane and Butane:	AP-42 Chapter 1.5 (dated 7/08), Tables 1.5-1 (assuming PM = PM10)
Waste Oil:	AP-42 Chapter 1.11 (dated 10/96), Tables 1.11-1, 1.11-2, 1.11-3, 1.11-4, and 1.11-5

Abbreviations

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

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

** Since there are no specific AP-42 emission factors for combustion of Biodiesel, a "worst case" scenario was assumed where PM, PM10/PM2.5, SO2, VOC, CO and HAP emissions are the same as from combustion of No. 2 fuel oil, and based on the U.S. EPA draft technical report titled " A Comprehensive Analysis of Biodiesel Impacts on Exhaust Emissions", dated October 2002 (EPA420-P-02-001) NOx emissions are 10% greater than from combustion of No. 2 fuel oil. This was done to allow the source to use any grade of biodiesel available, maximizing operational flexibility.

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

Company Name: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
Permit Number: 123-32840-00025
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 =	120	MMBtu/hr							
Natural Gas Usage =	1,051	MMCF/yr							
No. 2 Fuel Oil Usage =	7,508,571	gal/yr, and	0.75	% sulfur					
No. 4 Fuel Oil Usage =	7,508,571	gal/yr, and	0.75	% sulfur					
Residual (No. 5 or No. 6) Fuel Oil Usage =	0	gal/yr, and	0	% sulfur					
Propane Usage =	0	gal/yr, and	0	gr/100 ft3 sulfur					
Butane Usage =	0	gal/yr, and	0	gr/100 ft3 sulfur					
Biodiesel Usage =	7,508,571	gal/yr, and	0.50	% sulfur					
Used/Waste Oil Usage =	7,508,571	gal/yr, and	1.50	% sulfur	1.50	% ash	0.150	% chlorin	0.060 % lead

Unlimited/Uncontrolled Emissions

	Emission Factor (units)							
CO2e Fraction	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	No. 4 Fuel Oil (lb/kgal)	Residual (No. 5 or No. 6) Fuel Oil (lb/kgal)	Propane (lb/kgal)	Butane (lb/kgal)	Biodiesel (lb/kgal)	Used/ Waste Oil (lb/kgal)
CO2	120,161.84	22,501.41	24,153.46	24,835.04	12,500.00	14,506.73	20,837.01	22,024.15
CH4	2.49	0.91	0.97	1.00	0.60	0.67	0.31	0.89
N2O	2.2	0.26	0.19	0.53	0.9	0.9	0.03	0.18

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

	Unlimited/Uncontrolled Potential to Emit (tons/yr)							
CO2e Fraction	Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)	No. 4 Fuel Oil (tons/yr)	Residual (No. 5 or No. 6) Fuel Oil (tons/yr)	Propane (tons/yr)	Butane (tons/yr)	Biodiesel (tons/yr)	Used/ Waste Oil (tons/yr)
CO2	63,157.06	84,476.72	90,679.00	0	0	0	78,228.09	82,684.97
CH4	1.31	3.43	3.63	0	0	0	1.17	3.35
N2O	1.16	0.98	0.73	0	0	0	0.12	0.68
Total	63,159.53	84,481.13	90,683.36	0	0	0	78,229.37	82,688.99
CO2e Equivalent Emissions (tons/yr)	63,543.05	84,851.29	90,979.90	0	0	0	78,288.69	82,964.85

CO2e for Worst Case Fuel* (tons/yr)
90,979.90

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) Fuel Oil: Emission Factors for CO2 and CH4 from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/kgal. Emission Factor for N2O from AP-42 Chapter 1.3 (dated 5/10), Table 1.3-8

Propane: 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

Biodiesel: 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.

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: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
Permit Number: 123-32840-00025
Reviewer: Hannah L. Desrosiers

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

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

	Uncontrolled Emission Factors (lb/ton)			Unlimited/Uncontrolled Potential to Emit (tons/yr)			
	Drum-Mix Plant (dryer/mixer)			Drum-Mix Plant (dryer/mixer)			
Criteria Pollutant	Natural Gas	No. 2 Fuel Oil	Waste Oil	Natural Gas	No. 2 Fuel Oil	Waste Oil	**Worse Case PTE**
PM*	28	28	28	39,858.00	39,858.00	39,858.00	**39,858.00**
PM10*	6.5	6.5	6.5	9,252.75	9,252.75	9,252.75	**9,252.75**
PM2.5*	1.5	1.5	1.5	2,135.25	2,135.25	2,135.25	**2,135.25**
SO2**	0.0034	0.011	0.058	4.84	15.66	82.56	**82.56**
NOx**	0.026	0.055	0.055	37.01	78.29	78.29	**78.29**
VOC**	0.032	0.032	0.032	45.55	45.55	45.55	**45.55**
CO***	0.13	0.13	0.13	185.06	185.06	185.06	**185.06**
Hazardous Air Pollutant							
HCl			2.10E-04			2.99E-01	**0.30**
Antimony	1.80E-07	1.80E-07	1.80E-07	2.56E-04	2.56E-04	2.56E-04	**2.56E-04**
Arsenic	5.60E-07	5.60E-07	5.60E-07	7.97E-04	7.97E-04	7.97E-04	**7.97E-04**
Beryllium	negl	negl	negl	negl	negl	negl	**0.00E+00**
Cadmium	4.10E-07	4.10E-07	4.10E-07	5.84E-04	5.84E-04	5.84E-04	**5.84E-04**
Chromium	5.50E-06	5.50E-06	5.50E-06	7.83E-03	7.83E-03	7.83E-03	**7.83E-03**
Cobalt	2.60E-08	2.60E-08	2.60E-08	3.70E-05	3.70E-05	3.70E-05	**3.70E-05**
Lead	6.20E-07	1.50E-05	1.50E-05	8.83E-04	2.14E-02	2.14E-02	**2.14E-02**
Manganese	7.70E-06	7.70E-06	7.70E-06	1.10E-02	1.10E-02	1.10E-02	**1.10E-02**
Mercury	2.40E-07	2.60E-06	2.60E-06	3.42E-04	3.70E-03	3.70E-03	**3.70E-03**
Nickel	6.30E-05	6.30E-05	6.30E-05	0.09	0.09	0.09	**0.09**
Selenium	3.50E-07	3.50E-07	3.50E-07	4.98E-04	4.98E-04	4.98E-04	**4.98E-04**
2,2,4 Trimethylpentane	4.00E-05	4.00E-05	4.00E-05	0.06	0.06	0.06	**0.06**
Acetaldehyde			1.30E-03			1.85	**1.85**
Acrolein			2.60E-05			3.70E-02	**3.70E-02**
Benzene	3.90E-04	3.90E-04	3.90E-04	0.56	0.56	0.56	**0.56**
Ethylbenzene	2.40E-04	2.40E-04	2.40E-04	0.34	0.34	0.34	**0.34**
Formaldehyde	3.10E-03	3.10E-03	3.10E-03	4.41	4.41	4.41	**4.41**
Hexane	9.20E-04	9.20E-04	9.20E-04	1.31	1.31	1.31	**1.31**
Methyl chloroform	4.80E-05	4.80E-05	4.80E-05	0.07	0.07	0.07	**0.07**
MEK			2.00E-05			0.03	**0.03**
Propionaldehyde			1.30E-04			0.19	**0.19**
Quinone			1.60E-04			0.23	**0.23**
Toluene	1.50E-04	2.90E-03	2.90E-03	0.21	4.13	4.13	**4.13**
Total PAH Haps	1.90E-04	8.80E-04	8.80E-04	0.27	1.25	1.25	**1.25**
Xylene	2.00E-04	2.00E-04	2.00E-04	0.28	0.28	0.28	**0.28**
						Total HAPs	**15.17**
Methodology						**Worst Single HAP**	**4.41** **(formaldehyde)**

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

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

Company Name: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
Permit Number: 123-32840-00025
Reviewer: Hannah L. Desrosiers

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

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

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

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

There are no emission factors for N20 available in either the 40 CFR 98, Subpart C or AP-42 Chapter 11.1. Therefore, it is assumed that there are no N2O emission anticipated from this process.

Unlimited/Uncontrolled Potential to Emit (tons/yr) = (Maximum Annual Asphalt Production (tons/yr)) * (Emission Factor (lb/ton)) * (ton/2000 lbs)
Unlimited Potential to Emit CO2e (tons/yr) = Unlimited Potential to Emit CO2 of "worst case" fuel (ton/yr) x CO2 GWP (1) + Unlimited Potential to Emit CH4 of "worst case" fuel (ton/yr) x CH4 GWP (21) + Unlimited Potential to Emit N2O of "worst case" fuel (ton/yr) x N2O GWP (310).

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

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

Company Name: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
Permit Number: 123-32840-00025
Reviewer: Hannah L. Desrosiers

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

laximum Annual Blast Furnace Slag Usage =	0	ton/yr	0	% sulfur
Maximum Annual Steel Slag Usage =	2,847,000	ton/yr	1.00	% sulfur

Type of Slag	SO2 Emission Factor (lb/ton)	Unlimited Potential to Emit SO2 (tons/yr)
Blast Furnace Slag*	0.00	0.0
Steel Slag**	0.0021	3.02

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: J.H. Rudolph & Company, Inc.
Source Location: 12050 Optical Road, English, Indiana 47118
Permit Number: 123-32840-00025
Reviewer: Hannah L. Desrosiers

Maximum Hot Oil Heater Fuel Input Rate =	2.115	MMBtu/hr							
Natural Gas Usage =	18.53	MMCF/yr							
No. 2 Fuel Oil Usage =	132,339	gal/yr, and	0.75	% sulfur					
No. 4 Fuel Oil Usage =	132,339	gal/yr, and	0.75	% sulfur					
Biodiesel Usage =	132,339	gal/yr, and	0.50	% sulfur					
Used/Waste Oil Usage =	132,339	gal/yr, and	1.50	% sulfur	1.50	% ash	0.150	% chlorine,	0.060	% lead

Unlimited/Uncontrolled Emissions

	Emission Factor (units)					Unlimited/Uncontrolled Potential to Emit (tons/yr)					
	Hot Oil Heater					Hot Oil Heater					
Criteria Pollutant	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	No. 4 Fuel Oil* (lb/kgal)	Biodiesel ** (lb/kgal)	Used/ Waste Oil (lb/kgal)	Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)	No. 4 Fuel Oil (tons/yr)	Biodiesel (tons/yr)	Used/ Waste Oil (tons/yr)	**Worse Case Fuel (tons/yr)**
PM	1.9	2.0	7.0	2.0	96.0	0.018	0.132	0.463	0.132	6.352	**6.35**
PM10/PM2.5	7.6	3.3	8.3	3.3	76.5	0.070	0.218	0.549	0.218	5.062	**5.06**
SO2	0.6	106.5	112.5	117.2	220.5	0.006	7.047	7.444	7.752	14.590	**14.59**
NOx	100	20.0	47.0	20.0	19.0	0.926	1.323	3.110	1.323	1.257	**3.11**
VOC	5.5	0.20	0.20	0.2	1.00	0.051	0.013	0.013	0.013	0.066	**0.07**
CO	84	5.0	5.0	5.0	5.0	0.778	0.331	0.331	0.331	0.331	**0.78**
Hazardous Air Pollutant											
HCL					9.90					6.6E-01	**0.66**
Antimony			5.3E-03		negl.			3.5E-04		negl.	**3.5E-04**
Arsenic	2.0E-04	5.6E-04	1.3E-03	5.6E-04	1.1E-01	1.9E-06	3.7E-05	8.7E-05	3.7E-05	7.3E-03	**7.3E-03**
Beryllium	1.2E-05	4.2E-04	2.8E-05	4.2E-04	negl	1.1E-07	2.8E-05	1.8E-06	2.8E-05	negl.	**2.8E-05**
Cadmium	1.1E-03	4.2E-04	4.0E-04	4.2E-04	9.3E-03	1.0E-05	2.8E-05	2.6E-05	2.8E-05	6.2E-04	**6.2E-04**
Chromium	1.4E-03	4.2E-04	8.5E-04	4.2E-04	2.0E-02	1.3E-05	2.8E-05	5.6E-05	2.8E-05	1.3E-03	**1.3E-03**
Cobalt	8.4E-05		6.0E-03		2.1E-04	7.8E-07		4.0E-04		1.4E-05	**4.0E-04**
Lead	5.0E-04	1.3E-03	1.5E-03	1.3E-03	3.30	4.6E-06	8.3E-05	1.0E-04	8.3E-05	2.2E-01	**0.22**
Manganese	3.8E-04	8.4E-04	3.0E-03	8.4E-04	6.8E-02	3.5E-06	5.6E-05	2.0E-04	5.6E-05	4.5E-03	**4.5E-03**
Mercury	2.6E-04	4.2E-04	1.1E-04	4.2E-04		2.4E-06	2.8E-05	7.5E-06	2.8E-05		**2.8E-05**
Nickel	2.1E-03	4.2E-04	8.5E-02	4.2E-04	1.1E-02	1.9E-05	2.8E-05	5.6E-03	2.8E-05	7.3E-04	**5.6E-03**
Selenium	2.4E-05	2.1E-03	6.8E-04	2.1E-03	negl	2.2E-07	1.4E-04	4.5E-05	1.4E-04	negl.	**1.4E-04**
1.1.1-Trichloroethane			2.4E-04					1.6E-05			**1.6E-05**
Benzene	2.1E-03		2.1E-04			1.9E-05		1.4E-05			**1.9E-05**
Bis(2-ethylhexyl)phthalate					2.2E-03					1.5E-04	**1.5E-04**
Dichlorobenzene	1.2E-03				8.0E-07	1.1E-05				5.3E-08	**1.1E-05**
Ethylbenzene			6.4E-05					4.2E-06			**4.2E-06**
Formaldehyde	7.5E-02	6.1E-02	3.3E-02	6.1E-02		6.9E-04	4.0E-03	2.2E-03	4.0E-03		**4.0E-03**
Hexane	1.8E+00					1.7E-02					**0.02**
Phenol					2.4E-03					1.6E-04	**1.6E-04**
Toluene	3.4E-03		6.2E-03			3.1E-05		4.1E-04			**4.1E-04**
Total PAH Haps	negl		1.1E-03		3.9E-02	negl		7.5E-05		2.6E-03	**2.6E-03**
Polycyclic Organic Matter		3.3E-03		3.3E-03			2.2E-04		2.2E-04		**2.2E-04**
Xylenes			1.1E-04					7.2E-06			**7.2E-06**
					Total HAPs =	1.7E-02	4.7E-03	9.6E-03	4.7E-03	0.89	**0.92**
					Worst Single HAP =	1.7E-02 (Hexane)	4.0E-03 (Formaldehyde)	5.6E-03 (Nickel)	4.0E-03 (Formaldehyde)	0.66 (HCL)	**0.66 (HCL)**

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

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

** Since there are no specific AP-42 emission factors for combustion of Biodiesel, a "worst case" scenario was assumed where PM, PM10/PM2.5, SO2, VOC, CO and HAP emissions are the same as from combustion of No. 2 fuel oil, and based on the U.S. EPA draft technical report titled " A Comprehensive Analysis of Biodiesel Impacts on Exhaust Emissions", dated October 2002 (EPA420-P-02-001) NOx emissions are 10% greater than from combustion of No. 2 fuel oil. This was done to allow the source to use any grade of biodiesel available, maximizing operational flexibility.

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: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
Permit Number: 123-32840-00025
Reviewer: Hannah L. Desrosiers

Maximum Hot Oil Heater Fuel Input Rate =	2.115			
Natural Gas Usage =	19	MMBtu/hr		
No. 2 Fuel Oil Usage =	132,339	MMCF/yr		
No. 4 Fuel Oil Usage =	132,339	gal/yr, and	0.75	% sulfur
Biodiesel Usage =	132,339	gal/yr, and	0.75	% sulfur
Used/Waste Oil Usage =	132,339	gal/yr, and	0.50	% sulfur

Unlimited/Uncontrolled Emissions

Criteria Pollutant	Emission Factor (units) Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	No. 4 Fuel Oil (lb/kgal)	Biodiesel (lb/kgal)	Used/Waste Oil (lb/kgal)	Global Warming Potentials (GWP)
CO2	120,161.84	22,501.41	24,153.46	20,837.01	22,024.15	1
CH4	2.49	0.91	0.97	0.31	0.89	21
N2O	2.2	0.26	0.19	0.03	0.18	310

CO2e Fraction	Unlimited/Uncontrolled Potential to Emit (tons/yr) Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)	No. 4 Fuel Oil (tons/yr)	Biodiesel (tons/yr)	Used/Waste Oil (tons/yr)	**Worse Case CO2e Emissions (tons/yr)**
CO2	1,113.14	1,488.90	1,598.22	1,378.77	1,457.32	
CH4	0.02	0.06	0.06	0.02	0.06	
N2O	0.02	0.02	0.01	0.002	0.01	**1,495.50**
Total	1,113.19	1,488.98	1,598.29	1,378.79	1,457.39	

CO2e Equivalent Emissions (tons/yr)	1,119.95	1,495.50	1,603.52	1,379.84	1,462.26

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: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
Permit Number: 123-32840-00025
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 =	2.115	MMBtu/hr
Natural Gas Usage =	19	MMCF/yr, and
No. 2 Fuel Oil Usage =	132,339	gal/yr

	Emission Factors		Unlimited/Uncontrolled Potential to Emit (tons/yr)		
Criteria Pollutant	Natural Gas (lb/ft3)	No. 2 Fuel Oil (lb/gal)	Natural Gas	No. 2 Fuel Oil	**Worse Case PTE**
VOC	2.60E-08	2.65E-05	2.41E-04	0.002	**0.002**
CO	8.90E-06	0.0012	0.082	0.079	**0.082**
Greenhouse Gas as CO2e*					
CO2	0.20	28.00	1852.74	1852.74	**1852.74**
Hazardous Air Pollutant					
Formaldehyde	2.60E-08	3.50E-06	2.41E-04	2.32E-04	**2.41E-04**
Acenaphthene		5.30E-07		3.51E-05	**3.51E-05**
Acenaphthylene		2.00E-07		1.32E-05	**1.32E-05**
Anthracene		1.80E-07		1.19E-05	**1.19E-05**
Benzo(b)fluoranthene		1.00E-07		6.62E-06	**6.62E-06**
Fluoranthene		4.40E-08		2.91E-06	**2.91E-06**
Fluorene		3.20E-08		2.12E-06	**2.12E-06**
Naphthalene		1.70E-05		1.12E-03	**1.12E-03**
Phenanthrene		4.90E-06		3.24E-04	**3.24E-04**
Pyrene		3.20E-08		2.12E-06	**2.12E-06**
Total HAPs					**1.76E-03**
Worst Single HAP					**1.12E-03 (Naphthalene)**

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

*Note: There are no emission factors for CH4 and N20 available in either 40 CFR 98, Subpart C or AP-42 Chapter 11.1. Therefore, it is assumed that there are no CH4 and N2O emission anticipated from this process.

Abbreviations
CO = Carbon Monoxide VOC = Volatile Organic Compound CO2 = Carbon Dioxide

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

Company Name: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
Permit Number: 123-32840-00025
Reviewer: Hannah L. Desrosiers

Output Horsepower Rating (hp)	210.0
Maximum Hours Operated per Year	8760
Potential Throughput (hp-hr/yr)	1,839,600
Maximum Diesel Fuel Usage (gal/yr)	93,974

	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	2.02	2.02	2.02	1.89	28.51	2.31	6.14

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

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

[2]PM and PM2.5 emission factors are assumed to be equivalent to PM10 emission factors. No information was given regarding which method was used to determine the factor or the fraction of PM10 which is condensable.

Hazardous Air Pollutants (HAPs)

	Pollutant							
	Benzene	Toluene	Xylene	1,3-Butadiene	Formaldehyde	Acetaldehyde	Acrolein	Total PAH HAPs[3]
Emission Factor in lb/MMBtu	9.33E-04	4.09E-04	2.85E-04	3.91E-05	1.18E-03	7.67E-04	9.25E-05	1.68E-04
Emission Factor in lb/kgal[4]	1.28E-01	5.60E-02	3.91E-02	5.36E-03	1.62E-01	1.05E-01	1.27E-02	2.30E-02
Potential Emission in tons/yr	6.01E-03	2.63E-03	1.84E-03	2.52E-04	7.60E-03	4.94E-03	5.96E-04	1.08E-03

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

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

[4]Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) * 1/10^6 (MMBtu/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

Potential Emission of Total HAPs (tons/yr)	**0.025**
Potential Emission of Worst Case HAPs (tons/yr)	**7.60E-03**

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	1057.77	0.043	0.009

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

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

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

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

Summed Potential Emissions in tons/yr	**1,057.82**
CO2e Total in tons/yr	**1,061.30**

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: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
Permit Number: 123-32840-00025
Reviewer: Hannah L. Desrosiers

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

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

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

[1] The AP-42 Chapter 3.4-1 emission factors in lb/hp-hr were converted to lb/kgal emission factors using an average brake specific fuel consumption of 7,000 Btu / hp-hr, diesel heating value of 19,300 Btu / lb, and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

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

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

[2]Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) * 1/10^6 (MMBtu/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

Hazardous Air Pollutants (HAPs)

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

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

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

[4]Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) * 1/10^6 (MMBtu/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

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

Green House Gas Emissions (GHG)

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

[5] The AP-42 Chapter 3.4-1 emission factors in lb/hp-hr were converted to lb/kgal emission factors using an average brake specific fuel consumption of 7,000 Btu / hp-hr, diesel heating value of 19,300 Btu / lb, and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

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

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

[7]The 40 CFR 98 Subpart C emission factors in kg/MMBtu were converted to lb/kgal emission factors using an average diesel heating value of 19,300 Btu / lb and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.
[7]Emission factor (lb/kgal) = 40 CFR 98 EF (kg/MMBtu) * 2.20462 (lb/kg) * 1/10^6 (MMBtu/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

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

Methodology

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

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

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

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

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

Potential Emissions (tons/yr) = [Maximum Diesel Fuel Usage (gal/yr) x Emission Factor (lb/kgal)] / (1,000 ga/kgal) / (2,000 lb/ton)
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) +
N2O Potential Emission ton/yr x N2O GWP (310).

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

Company Name: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
Permit Number: 123-32840-00025
Reviewer: Hannah L. Desrosiers

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

Asphalt Temperature, T =	325	F
Asphalt Volatility Factor, V =	-0.5	
Maximum Annual Asphalt Production =	2,847,000	tons/yr

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

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

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

Total VOCs	**5.57**	**17.35**	**1.5**	**24.4**
Total HAPs	**0.12**	**0.26**	**0.023**	**0.41**
			Worst Single HAP	**0.126 (formaldehyde)**

Methodology
The asphalt temperature and volatility factor were provided by the source.
Unlimited/Uncontrolled Potential to Emit (tons/yr) = (Maximum Annual Asphalt Production (tons/yr)) * (Emission Factor (lb/ton)) * (ton/2000 lbs)
Emission Factors from AP-42 Chapter 11.1 (dated 3/04), Tables 11.1-14, 11.1-15, and 11.1-16
Plant Load-Out Emission Factor Equations (AP-42 Table 11.1-14)::
Total PM/PM10/PM2.5 Ef = 0.000181 + 0.00141(-V)e^((0.0251)(T+460)-20.43)
Organic PM Ef = 0.00141(-V)e^((0.0251)(T+460)-20.43)
TOC Ef = 0.0172(-V)e^((0.0251)(T+460)-20.43)
CO Ef = 0.00558(-V)e^((0.0251)(T+460)-20.43)
Silo Filling Emission Factor Equations (AP-42 Table 11.1-14):
PM/PM10 Ef = 0.000332 + 0.00105(-V)e^((0.0251)(T+460)-20.43)
Organic PM Ef = 0.00105(-V)e^((0.0251)(T+460)-20.43)
TOC Ef = 0.0504(-V)e^((0.0251)(T+460)-20.43)
CO Ef = 0.00488(-V)e^((0.0251)(T+460)-20.43)
On Site Yard CO emissions estimated by multiplying the TOC emissions by 0.32
*No emission factors available for PM10 or PM2.5, therefore IDEM assumes PM10 and PM2.5 are equivalent to Total PM.

Abbreviations
TOC = Total Organic Compounds
CO = Carbon Monoxide
PM = Particulate Matter
PM10 = Particulate Matter (<10 um)
PM2.5 = Particulate Matter (<2.5 um)
HAP = Hazardous Air Pollutant
VOC = Volatile Organic Compound

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

Company Name: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
Permit Number: 123-32840-00025
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%	1.3E-03	1.7E-03	NA	3.0E-03
Acenaphthylene	208-96-8	PM/HAP	POM	Organic PM	0.028%	0.014%	1.4E-04	5.1E-05	NA	1.9E-04
Anthracene	120-12-7	PM/HAP	POM	Organic PM	0.07%	0.13%	3.4E-04	4.7E-04	NA	8.1E-04
Benzo(a)anthracene	56-55-3	PM/HAP	POM	Organic PM	0.019%	0.056%	9.2E-05	2.0E-04	NA	2.9E-04
Benzo(b)fluoranthene	205-99-2	PM/HAP	POM	Organic PM	0.0076%	0	3.7E-05	0	NA	3.7E-05
Benzo(k)fluoranthene	207-08-9	PM/HAP	POM	Organic PM	0.0022%	0	1.1E-05	0	NA	1.1E-05
Benzo(g,h,i)perylene	191-24-2	PM/HAP	POM	Organic PM	0.0019%	0	9.2E-06	0	NA	9.2E-06
Benzo(a)pyrene	50-32-8	PM/HAP	POM	Organic PM	0.0023%	0	1.1E-05	0	NA	1.1E-05
Benzo(e)pyrene	192-97-2	PM/HAP	POM	Organic PM	0.0078%	0.0095%	3.8E-05	3.4E-05	NA	7.2E-05
Chrysene	218-01-9	PM/HAP	POM	Organic PM	0.103%	0.21%	5.0E-04	7.6E-04	NA	1.3E-03
Dibenz(a,h)anthracene	53-70-3	PM/HAP	POM	Organic PM	0.00037%	0	1.8E-06	0	NA	1.8E-06
Fluoranthene	206-44-0	PM/HAP	POM	Organic PM	0.05%	0.15%	2.4E-04		NA	2.4E-04
Fluorene	86-73-7	PM/HAP	POM	Organic PM	0.77%	1.01%	3.7E-03	3.7E-03	NA	7.4E-03
Indeno(1,2,3-cd)pyrene	193-39-5	PM/HAP	POM	Organic PM	0.00047%	0	2.3E-06	0	NA	2.3E-06
2-Methylnaphthalene	91-57-6	PM/HAP	POM	Organic PM	2.38%	5.27%	1.2E-02	1.9E-02	NA	0.031
Naphthalene	91-20-3	PM/HAP	POM	Organic PM	1.25%	1.82%	6.1E-03	6.6E-03	NA	1.3E-02
Perylene	198-55-0	PM/HAP	POM	Organic PM	0.022%	0.03%	1.1E-04	1.1E-04	NA	2.2E-04
Phenanthrene	85-01-8	PM/HAP	POM	Organic PM	0.81%	1.80%	3.9E-03	6.5E-03	NA	1.0E-02
Pyrene	129-00-0	PM/HAP	POM	Organic PM	0.15%	0.44%	7.3E-04	1.6E-03	NA	2.3E-03
Total PAH HAPs							**0.029**	**0.041**	**NA**	**0.069**
Other semi-volatile HAPs										
Phenol		PM/HAP	---	Organic PM	1.18%	0	5.7E-03	0	0	5.7E-03

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

Methodology

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

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

Abbreviations

PM = Particulate Matter
HAP = Hazardous Air Pollutant
POM = Polycyclic Organic Matter

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

Organic Volatile-Based Compounds (Table 11.1-16)

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%	**5.57**	**17.35**	**1.47**	**24.38**
non-VOC/non-HAPS										
Methane	74-82-8	non-VOC/non-HAP	---	TOC	6.50%	0.26%	3.8E-01	4.5E-02	1.0E-01	0.532
Acetone	67-64-1	non-VOC/non-HAP	---	TOC	0.046%	0.055%	2.7E-03	9.5E-03	7.2E-04	0.013
Ethylene	74-85-1	non-VOC/non-HAP	---	TOC	0.71%	1.10%	4.2E-02	1.9E-01	1.1E-02	0.244
Total non-VOC/non-HAPS					7.30%	1.40%	**0.432**	**0.243**	**0.114**	**0.79**
Volatile organic HAPs										
Benzene	71-43-2	VOC/HAP	---	TOC	0.052%	0.032%	3.1E-03	5.6E-03	8.1E-04	9.4E-03
Bromomethane	74-83-9	VOC/HAP	---	TOC	0.0096%	0.0049%	5.7E-04	8.5E-04	1.5E-04	1.6E-03
2-Butanone	78-93-3	VOC/HAP	---	TOC	0.049%	0.039%	2.9E-03	6.8E-03	7.7E-04	1.0E-02
Carbon Disulfide	75-15-0	VOC/HAP	---	TOC	0.013%	0.016%	7.7E-04	2.8E-03	2.0E-04	3.7E-03
Chloroethane	75-00-3	VOC/HAP	---	TOC	0.00021%	0.004%	1.2E-05	6.9E-04	3.3E-06	7.1E-04
Chloromethane	74-87-3	VOC/HAP	---	TOC	0.015%	0.023%	8.9E-04	4.0E-03	2.3E-04	5.1E-03
Cumene	92-82-8	VOC/HAP	---	TOC	0.11%	0	6.5E-03	0	1.7E-03	8.2E-03
Ethylbenzene	100-41-4	VOC/HAP	---	TOC	0.28%	0.038%	1.7E-02	6.6E-03	4.4E-03	0.028
Formaldehyde	50-00-0	VOC/HAP	---	TOC	0.088%	0.69%	5.2E-03	1.2E-01	1.4E-03	0.126
n-Hexane	100-54-3	VOC/HAP	---	TOC	0.15%	0.10%	8.9E-03	1.7E-02	2.3E-03	0.029
Isooctane	540-84-1	VOC/HAP	---	TOC	0.0018%	0.00031%	1.1E-04	5.4E-05	2.8E-05	1.9E-04
Methylene Chloride	75-09-2	non-VOC/HAP	---	TOC	0	0.00027%	0	4.7E-05	0	4.7E-05
MTBE	1634-04-4	VOC/HAP	---	TOC	0	0	0	0	0	0
Styrene	100-42-5	VOC/HAP	---	TOC	0.0073%	0.0054%	4.3E-04	9.4E-04	1.1E-04	1.5E-03
Tetrachloroethene	127-18-4	non-VOC/HAP	---	TOC	0.0077%	0	4.6E-04	0	1.2E-04	5.8E-04
Toluene	100-88-3	VOC/HAP	---	TOC	0.21%	0.062%	1.2E-02	1.1E-02	3.3E-03	0.026
1,1,1-Trichloroethane	71-55-6	VOC/HAP	---	TOC	0	0	0	0	0	0
Trichloroethene	79-01-6	VOC/HAP	---	TOC	0	0	0	0	0	0
Trichlorofluoromethane	75-69-4	VOC/HAP	---	TOC	0.0013%	0	7.7E-05	0	2.0E-05	9.7E-05
m-/p-Xylene	1330-20-7	VOC/HAP	---	TOC	0.41%	0.20%	2.4E-02	3.5E-02	6.4E-03	0.065
o-Xylene	95-47-6	VOC/HAP	---	TOC	0.08%	0.057%	4.7E-03	9.9E-03	1.3E-03	1.6E-02
Total volatile organic HAPs					1.50%	1.30%	**0.089**	**0.226**	**0.023**	**0.338**

Methodology
Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Speciation Profile (%)] * [TOC (tons/yr)]
Speciation Profiles from AP-42 Chapter 11.1 (dated 3/04), Tables 11.1-15 and 11.1-16

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

Appendix A.1: Unlimited Emissions Calculations
Material Storage Piles

Company Name: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
Permit Number: 123-32840-00025
Reviewer: Hannah L. Desrosiers

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

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

Material	Silt Content (wt %)*	Emission Factor (lb/acre/day)	Maximum Anticipated Pile Size (acres)**	PTE of PM (tons/yr)	PTE of PM10/PM2.5 (tons/yr)
Sand	2.6	3.01	1.50	0.824	0.288
Gravel	1.6	1.85	1.50	0.507	0.177
Limestone	1.6	1.85	8.00	2.70	0.95
RAP	0.5	0.58	1.50	0.158	0.055
Shingles	0.5	0.58	1.50	0.158	0.055
Steel Slag	3.8	4.40	1.50	1.204	0.421
			Totals	**5.56**	**1.94**

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: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
Permit Number: 123-32840-00025
Reviewer: Hannah L. Desrosiers

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

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

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

where: Ef = Emission factor (lb/ton)

k (PM) =	0.74	= particle size multiplier (0.74 assumed for aerodynamic diameter <=100 um)
k (PM10) =	0.35	= particle size multiplier (0.35 assumed for aerodynamic diameter <=10 um)
k (PM2.5) =	0.053	= particle size multiplier (0.053 assumed for aerodynamic diameter <=2.5 um)
U =	10.2	= worst case annual mean wind speed (Source: NOAA, 2006*)
M =	4.0	= material % moisture content of aggregate (Source: AP-42 Section 11.1.1.1)
Ef (PM) =	2.27E-03	lb PM/ton of material handled
Ef (PM10) =	1.07E-03	lb PM10/ton of material handled
Ef (PM2.5) =	1.62E-04	lb PM2.5/ton of material handled

Maximum Annual Asphalt Production =	2,847,000	tons/yr
Percent Asphalt Cement/Binder (weight %) =	5.0%	
Maximum Material Handling Throughput =	2,704,650	tons/yr

Type of Activity	Unlimited/Uncontrolled PTE of PM (tons/yr)	Unlimited/Uncontrolled PTE of PM10 (tons/yr)	Unlimited/Uncontrolled PTE of PM2.5 (tons/yr)
Truck unloading of materials into storage piles	3.07	1.45	0.22
Front-end loader dumping of materials into feeder bins	3.07	1.45	0.22
Conveyor dropping material into dryer/mixer or batch tower	3.07	1.45	0.22
Total (tons/yr)	**9.20**	**4.35**	**0.66**

Methodology

The percent asphalt cement/binder provided by the source.
Maximum Material Handling Throughput (tons/yr) = [Annual Asphalt Production Limitation (tons/yr)] * [1 - Percent Asphalt Cement/Binder (weight %)]
Unlimited Potential to Emit (tons/yr) = (Maximum Material Handling Throughput (tons/yr)) * (Emission Factor (lb/ton)) * (ton/2000 lbs)

Raw materials may include limestone, sand, and recycled asphalt materials (RAM) such as recycled asphalt pavement (RAP), and recycled asphalt shingles (RAS), gravel, slag, and other additivies.
*Worst case annual mean wind speed (Indianapolis, IN) from "Comparative Climatic Data", National Climatic Data Center, NOAA, 2006

Material Screening and Conveying (AP-42 Section 11.19.2)

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

Operation	Uncontrolled Emission Factor for PM (lbs/ton)*	Uncontrolled Emission Factor for PM10 (lbs/ton)*	Unlimited/Uncontrolled PTE of PM (tons/yr)	Unlimited/Uncontrolled PTE of PM10/PM2.5 (tons/yr)**
Crushing	0.0054	0.0024	7.30	3.25
Screening	0.025	0.0087	33.81	11.77
Conveying	0.003	0.0011	4.06	1.49
Unlimited Potential to Emit (tons/yr) =			**45.17**	**16.50**

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 materials (RAM) such as recycled asphalt pavement (RAP) and/or recycled asphalt shingles (RAS).
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: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
Permit Number: 123-32840-00025
Reviewer: Hannah L. Desrosiers

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

Maximum Annual Asphalt Production =	2,847,000	tons/yr
Percent Asphalt Cement/Binder (weight %) =	5.0%	
Maximum Material Handling Throughput =	2,704,650	tons/yr
Maximum Asphalt Cement/Binder Throughput =	142,350	tons/yr
Maximum No. 2 Fuel Oil Usage =	7,508,571	gallons/yr

Process	Vehicle Type	Maximum Weight of Vehicle (tons)	Maximum Weight of Load (tons)	Maximum Weight of Vehicle and Load (tons/trip)	Maximum trips per year (trip/yr)	Total Weight driven per year (ton/yr)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/yr)
Aggregate/RAM Truck Enter Full	Dump truck (16 CY)	17.0	22.4	39.4	1.2E+05	4.8E+06	300	0.057	6860.4
Aggregate/RAM Truck Leave Empty	Dump truck (16 CY)	17.0	0	17.0	1.2E+05	2.1E+06	300	0.057	6860.4
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	12.0	36.0	48.0	4.0E+03	1.9E+05	300	0.057	224.7
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.0	4.0E+03	4.7E+04	300	0.057	224.7
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	12.0	32.0	44.0	7.9E+02	3.5E+04	300	0.057	45.1
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.0	7.9E+02	9.5E+03	300	0.057	45.1
Aggregate/RAM Loader Full	Front-end loader (3 CY)	15.0	4.2	19.2	6.4E+05	1.2E+07	300	0.057	36588.9
Aggregate/RAM Loader Empty	Front-end loader (3 CY)	15.0	0	15.0	6.4E+05	9.7E+06	300	0.057	36588.9
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	17.0	24.0	41.0	1.2E+05	4.9E+06	300	0.057	6740.1
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	17.0	0	17.0	1.2E+05	2.0E+06	300	0.057	6740.1
	Total				**1.8E+06**	**3.6E+07**			**1.0E+05**

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

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

	PM	PM10	PM2.5	
where k =	4.9	1.5	0.15	lb/mi = particle size multiplier (AP-42 Table 13.2.2-2 for Industrial Roads)
s =	4.8	4.8	4.8	% = mean % silt content of unpaved roads (AP-42 Table 13.2.2-3 Sand/Gravel Processing Plant Road)
a =	0.7	0.9	0.9	= constant (AP-42 Table 13.2.2-2)
W =	20.3	20.3	20.3	tons = average vehicle weight (provided by source)
b =	0.45	0.45	0.45	= constant (AP-42 Table 13.2.2-2)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, Eext = E * [(365 - P)/365]
Mitigated Emission Factor, Eext = E * [(365 - P)/365]
where P = 125 days of rain greater than or equal to 0.01 inches (see Fig. 13.2.2-1)

	PM	PM10	PM2.5	
Unmitigated Emission Factor, Ef =	6.10	1.55	0.16	lb/mile
Mitigated Emission Factor, Eext =	4.01	1.02	0.10	lb/mile
Dust Control Efficiency =	50%	50%	50%	(pursuant to control measures outlined in fugitive dust control plan)

Process	Vehicle Type	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Aggregate/RAM Truck Enter Full	Dump truck (16 CY)	20.91	5.33	0.53	13.75	3.50	0.35	6.87	1.75	0.18
Aggregate/RAM Truck Leave Empty	Dump truck (16 CY)	20.91	5.33	0.53	13.75	3.50	0.35	6.87	1.75	0.18
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	0.685	0.175	0.02	0.450	0.115	0.01	0.225	0.057	0.01
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	0.685	0.175	0.02	0.450	0.115	0.01	0.225	0.057	0.01
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	0.137	0.035	0.00	0.090	0.023	0.00	0.045	0.012	0.00
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	0.137	0.035	0.00	0.090	0.023	0.00	0.045	0.012	0.00
Aggregate/RAM Loader Full	Front-end loader (3 CY)	111.51	28.42	2.84	73.32	18.69	1.87	36.66	9.34	0.93
Aggregate/RAM Loader Empty	Front-end loader (3 CY)	111.51	28.42	2.84	73.32	18.69	1.87	36.66	9.34	0.93
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	20.54	5.24	0.52	13.51	3.44	0.34	6.75	1.72	0.17
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	20.54	5.24	0.52	13.51	3.44	0.34	6.75	1.72	0.17
	Totals	**307.55**	**78.38**	**7.84**	**202.23**	**51.54**	**5.15**	**101.11**	**25.77**	**2.58**

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

Abbreviations
PM = Particulate Matter PM10 = Particulate Matter (<10 um) PM2.5 = Particulate Matter (<2.5 um) PTE = Potential to Emit
RAM = recycled asphalt materials: including recycled asphalt pavement (RAP) and/or recycled asphalt shingles (RAS).

Appendix A: Unlimited Emissions Calculations
Paved Roads

Company Name: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
Permit Number: 123-32840-00025
Reviewer: Hannah L. Desrosiers

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

Maximum Annual Asphalt Production =	2,847,000	tons/yr
Percent Asphalt Cement/Binder (weight %) =	5.0%	
Maximum Material Handling Throughput =	2,704,650	tons/yr
Maximum Asphalt Cement/Binder Throughput =	142,350	tons/yr
Maximum No. 2 Fuel Oil Usage =	7,508,571	gallons/yr

Process	Vehicle Type	Maximum Weight of Vehicle (tons)	Maximum Weight of Load (tons)	Maximum Weight of Vehicle and Load (tons/trip)	Maximum trips per year (trip/yr)	Total Weight driven per day (ton/yr)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/yr)
Aggregate/RAM Truck Enter Full	Dump truck (16 CY)	17.0	22.4	39.40	1.2E+05	4.8E+06	100	0.019	2286.8
Aggregate/RAM Truck Leave Empty	Dump truck (16 CY)	17.0	0	17.00	1.2E+05	2.1E+06	100	0.019	2286.8
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	12.0	36.0	48.00	4.0E+03	1.9E+05	100	0.019	74.9
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.00	4.0E+03	4.7E+04	100	0.019	74.9
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	12.0	32.0	44.00	7.9E+02	3.5E+04	100	0.019	15.0
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.00	7.9E+02	9.5E+03	100	0.019	15.0
Aggregate/RAM Loader Full	Front-end loader (3 CY)	15.0	4.2	19.20	6.4E+05	1.2E+07	100	0.019	12196.3
Aggregate/RAM Loader Empty	Front-end loader (3 CY)	15.0	0	15.00	6.4E+05	9.7E+06	100	0.019	12196.3
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	17.0	24.0	41.00	1.2E+05	4.9E+06	100	0.019	2246.7
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	17.0	0	17.00	1.2E+05	2.0E+06	100	0.019	2246.7
	Total				**1.8E+06**	**3.6E+07**			**3.4E+04**

Average Vehicle Weight Per Trip =	20.3	tons/trip
Average Miles Per Trip =	0.019	miles/trip

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

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

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

Mitigated Emission Factor, Eext = Ef * [1 - (p/4N)]

where p =	125	days of rain greater than or equal to 0.01 inches (see Fig. 13.2.1-2)
N =	365	days per year

	PM	PM10	PM2.5	
Unmitigated Emission Factor, Ef =	0.15	0.03	0.01	lb/mile
Mitigated Emission Factor, Eext =	0.14	0.03	0.01	lb/mile
Dust Control Efficiency =	50%	50%	50%	(pursuant to control measures outlined in fugitive dust control plan)

Process	Vehicle Type	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Aggregate/RAM Truck Enter Full	Dump truck (16 CY)	0.17	0.03	0.01	0.16	0.03	0.01	0.08	0.02	0.00
Aggregate/RAM Truck Leave Empty	Dump truck (16 CY)	0.17	0.03	0.01	0.16	0.03	0.01	0.08	0.02	0.00
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	0.006	0.001	2.7E-04	0.005	0.001	2.5E-04	0.003	5.1E-04	1.2E-04
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	0.006	0.001	2.7E-04	0.005	0.001	2.5E-04	0.003	5.1E-04	1.2E-04
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	1.1E-03	2.2E-04	5.5E-05	1.0E-03	2.0E-04	5.0E-05	5.1E-04	1.0E-04	2.5E-05
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	1.1E-03	2.2E-04	5.5E-05	1.0E-03	2.0E-04	5.0E-05	5.1E-04	1.0E-04	2.5E-05
Aggregate/RAM Loader Full	Front-end loader (3 CY)	0.91	0.18	0.04	0.83	0.17	0.04	0.41	0.08	0.02
Aggregate/RAM Loader Empty	Front-end loader (3 CY)	0.91	0.18	0.04	0.83	0.17	0.04	0.41	0.08	0.02
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	0.17	0.03	0.01	0.15	0.03	0.01	0.08	0.02	0.00
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	0.17	0.03	0.01	0.15	0.03	0.01	0.08	0.02	0.00
	Totals	**2.50**	**0.50**	**0.12**	**2.29**	**0.46**	**0.11**	**1.14**	**0.23**	**0.06**

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
RAM = recycled asphalt materials: including recycled asphalt pavement (RAP) and/or recycled asphalt shingles (RAS).

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

Company Name: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
Permit Number: 123-32840-00025
Reviewer: Hannah L. Desrosiers

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

Maximum Annual Asphalt Production =	2,847,000	tons/yr
Percent Asphalt Cement/Binder (weight %) =	5.0%	
Maximum Asphalt Cement/Binder Throughput =	142,350	tons/yr

Volatile Organic Compounds

	Maximum weight % of VOC solvent in binder*	Weight % VOC solvent in binder that evaporates	Maximum VOC Solvent Usage (tons/yr)	PTE of VOC (tons/yr)
Cut back asphalt rapid cure (assuming gasoline or naphtha solvent)	25.3%	95.0%	36,014.6	34,213.8
Cut back asphalt medium cure (assuming kerosene solvent)	28.6%	70.0%	40,712.1	28,498.5
Cut back asphalt slow cure (assuming fuel oil solvent)	20.0%	25.0%	28,470.0	7,117.5
Emulsified asphalt with solvent (assuming water, emulsifying agent, and 15% fuel oil solvent)	15.0%	46.4%	21,352.5	9,907.6
Other asphalt with solvent binder	25.9%	2.5%	36,868.7	921.7
Worst Case PTE of VOC =				**34,213.8**

Hazardous Air Pollutants

Worst Case Total HAP Content of VOC solvent (weight %)* =	26.08%	
Worst Case Single HAP Content of VOC solvent (weight %)* =	9.0%	Xylenes
PTE of Total HAPs (tons/yr) =	**8,924.23**	
PTE of Single HAP (tons/yr) =	**3,079.24**	**Xylenes**

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

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% Xylenes**	**0.31% Naphthalene**	**0.50% Xylenes**	**0.23% Xylenes**	**0.07% Chrysene**

Methodology
Maximum Asphalt Cement/Binder Throughput = [Annual Asphalt Production Limitation (tons/yr)] * [Percent Asphalt Cement/Binder (weight %)]
Maximum VOC Solvent Usage (tons/yr) = [Maximum Asphalt Cement/Binder Throughput (tons/yr)] * [Maximum Weight % of VOC Solvent in Binder]
PTE of VOC (tons/yr) = [Weight % VOC solvent in binder that evaporates] * [Maximum VOC Solvent Usage (tons/yr)]
PTE of Total HAPs (tons/yr) = [Worst Case Total HAP Content of VOC solvent (weight %)] * [Worst Case Limited PTE of VOC (tons/yr)]
PTE of Single HAP (tons/yr) = [Worst Case Single HAP Content of VOC solvent (weight %)] * [Worst Case Limited PTE of VOC (tons/yr)]

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

Abbreviations
VOC = Volatile Organic Compounds
PTE = Potential to Emit

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

Company Name: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
Permit Number: 123-32840-00025
Reviewer: Hannah L. Desrosiers

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

Gasoline Throughput =	40.0	gallons/day
=	14.6	kgal/yr

Volatile Organic Compounds

Emission Source	Emission Factor (lb/kgal of throughput)	PTE of VOC (tons/yr)*
Filling storage tank (balanced submerged filling)	0.3	0.00
Tank breathing and emptying	1.0	0.01
Vehicle refueling (displaced losses - controlled)	1.1	0.01
Spillage	0.7	0.01
Total		**0.02**

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) =	**0.01**	
Limited PTE of Single HAP (tons/yr) =	**0.002**	**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: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
Permit Number: 123-32840-00025
Reviewer: Hannah L. Desrosiers

Asphalt Plant Limitations - Drum Mix

Maximum Hourly Asphalt Production =	325	ton/hr						
Annual Asphalt Production Limitation =	474,820	ton/yr						
Blast Furnace Slag Usage Limitation =	0	ton/yr	0	% sulfur				
Steel Slag Usage Limitation =	375,000		1.00	% sulfur				
Maximum Dryer Fuel Input Rate =	120	MMBtu/hr						
Natural Gas Limitation =	709	MMCF/yr						
No. 2 Fuel Oil Limitation =	1,542,279	gal/yr, and	0.75	% sulfur				
No. 4 Fuel Oil Limitation =	1,460,024	gal/yr, and	0.75	% sulfur				
Residual (No. 5 or No. 6) Fuel Oil Limitation =	0	gal/yr, and	0	% sulfur				
Propane Limitation =	0	gal/yr, and	0	gr/100 ft3 sulfur				
Butane Limitation =	0	gal/yr, and	0	gr/100 ft3 sulfur				
Biodiesel Limitation =	2,313,418	gal/yr, and	0.50	% sulfur				
Used/Waste Oil Limitation =	744,910	gal/yr, and	1.50	% sulfur	1.50	% ash	0.150	% chlorine, 0.060 % lead
Diesel Fuel Limitation - Generator < 600 HP =	93,974	gal/yr,and						
Diesel Fuel Limitation - Generator > 600 HP =	0	gal/yr	0.00	% sulfur				

PM Dryer/Mixer Limitation =	0.858	lb/ton of asphalt production
PM10 Dryer/Mixer Limitation =	0.345	lb/ton of asphalt production
PM2.5 Dryer/Mixer Limitation =	0.364	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	lb/ton of slag processed
Steel Slag SO2 Dryer/Mixer Limitation =	0.0021	lb/ton of slag processed
Cold Mix Asphalt VOC Limitation =	68.89	tons/yr
HCl Limitation =	9.90	lb/kgal

Limited/Controlled Emissions

	Limited/Controlled Potential Emissions (tons/year)										
	Criteria Pollutants							Greenhouse Gas Pollutants	Hazardous Air Pollutants		
Process Description	**PM**	**PM10**	**PM2.5**	**SO2**	**NOx**	**VOC**	**CO**	**CO_2e**	**Total HAPs**	**Worst Case HAP**	
Ducted Emissions											
Dryer Fuel Combustion (worst case)	35.76	28.49	28.49	82.13	67.38	1.95	29.79	42,871.22	5.80	3.69	(hydrogen chloride)
Dryer/Mixer (Process)	203.67	81.93	86.42	13.77	13.06	7.60	30.86	7,894.36	2.53	0.74	(formaldehyde)
Dryer/Mixer Slag Processing	0	0	0	0.40	0	0	0	0	0	0	
Hot Oil Heater Fuel Combustion/Process (worst case)	6.35	5.06	5.06	14.59	3.11	0.07	0.78	1,852.74	0.92	0.66	(hexane)
Diesel-Fired Generator Fuel Combustion (< 600 HP) (RAM Lump Breaker)	2.02	2.02	2.02	1.89	28.51	2.31	6.14	1,061.30	0.02	0.01	(formaldehyde)
Diesel-Fired Generator Fuel Combustion (< 600 HP) (RAM Crusher) *	0	0	0	0	0	0	0	0	0	0	N/A
Diesel-Fired Generator Fuel Combustion (> 600 HP)	0	0	0	0	0	0	0	0	0	0	
Worst Case Emissions**	**212.05**	**89.01**	**93.50**	**99.00**	**99.00**	**9.98**	**37.79**	**45,785.27**	**6.74**	**3.69**	(hydrogen chloride)
Fugitive Emissions											
Asphalt Load-Out, Silo Filling, On-Site Yard	0.26	0.26	0.26	0	0	4.07	0.68	0	0.07	0.02	(formaldehyde)
Material Storage Piles	5.56	1.94	1.94	0	0	0	0	0	0	0	N/A
Material Processing and Handling	1.53	0.73	0.11	0	0	0	0	0	0	0	N/A
Material Crushing, Screening, and Conveying	7.53	2.75	2.75	0	0	0	0	0	0	0	N/A
Unpaved and Paved Roads (worst case)	16.87	4.30	0.43	0	0	0	0	0	0	0	N/A
Cold Mix Asphalt Production	0	0	0	0	0	68.89	0	0	17.97	6.20	(xylenes)
Gasoline Fuel Transfer and Dispensing	0	0	0	0	0	0.02	0	0	0.01	0.002	(xylenes)
Volatile Organic Liquid Storage Vessels	0	0	0	0	0	negl	0	0	negl	negl	
Total Fugitive Emissions	**31.75**	**9.98**	**5.50**	**0**	**0**	**72.98**	**0.68**	**0**	**18.04**	**6.20**	(xylenes)
Totals Limited/Controlled Emissions	**243.80**	**99.00**	**99.00**	**99.00**	**99.00**	**82.95**	**38.47**	**45,785.27**	**24.79**	**6.20**	(xylenes)

N/A = not applicable negl = negligible
RAM = recycled asphalt materials: including recycled asphalt pavement (RAP) and/or recycled asphalt shingles (RAS).
Worst Case Fuel Combustion is based on the fuel with the highest emissions for each specific pollutant.
* The RAM Crusher has been determined a nonroad vehicle under 40 CFR 60, and 40 CFR 63, therefore, the fuel combustion emissions are not counted toward PSD and TV applicablilty.
** 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: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
Permit Number: 123-32840-00025
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 =	120	MMBtu/hr						
Natural Gas Limitation =	709	MMCF/yr						
No. 2 Fuel Oil Limitation =	1,542,279	gal/yr, and	0.75	% sulfur				
No. 4 Fuel Oil Limitation =	1,460,024	gal/yr, and	0.75	% sulfur				
Residual (No. 5 or No. 6) Fuel Oil Limitation =	0	gal/yr, and	0	% sulfur				
Propane Limitation =	0	gal/yr, and	0	gr/100 ft3 sulfur				
Butane Limitation =	0	gal/yr, and	0	gr/100 ft3 sulfur				
Biodiesel Limitation =	2,313,418	gal/yr, and	0.50	% sulfur				
Used/Waste Oil Limitation =	744,910	gal/yr, and	1.50	% sulfur	1.50	% ash	0.150	% chlorine, 0.060 % lead

Limited Emissions

	Emission Factor (units)								Limited Potential to Emit (tons/yr)								
Criteria Pollutant	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	No. 4 Fuel Oil* (lb/kgal)	Residual (No. 5 or No. 6) Fuel Oil (lb/kgal)	Propane (lb/kgal)	Butane (lb/kgal)	Biodiesel** (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)	Biodiesel (tons/yr)	Used/ Waste Oil (tons/yr)	**Worse Case Fuel (tons/yr)**
PM	1.9	2.0	7.0	3.22	0.5	0.6	2.0	96.0	0.67	1.54	5.11	0	0	0	2.31	35.76	**35.76**
PM10/PM2.5	7.6	3.3	8.3	4.72	0.5	0.6	3.3	76.5	2.70	2.54	6.06	0	0	0	3.82	28.49	**28.49**
SO2	0.6	106.5	112.5	0	0	0	71.0	220.5	0.21	82.13	82.13	0	0	0	82.13	82.13	**82.13**
NOx	190	24.0	47.0	47.0	13.0	15.0	26.4	19.0	67.38	18.51	34.31	0	0	0	30.54	7.08	**67.38**
VOC	5.5	0.20	0.20	0.28	1.00	1.10	0.20	1.0	1.95	0.15	0.15	0	0	0	0.23	0.37	**1.95**
CO	84	5.0	5.0	5.0	7.5	8.4	5.0	5.0	29.79	3.86	3.65	0	0	0	5.78	1.86	**29.79**
Hazardous Air Pollutant																	
HCl								9.9							0	3.69	**3.69**
Antimony			5.25E-03	5.25E-03				negl			3.83E-03	0			0	negl	**3.8E-03**
Arsenic	2.0E-04	5.6E-04	1.32E-03	1.32E-03			5.60E-04	1.1E-01	7.1E-05	4.32E-04	9.64E-04	0			6.48E-04	4.10E-02	**4.1E-02**
Beryllium	1.2E-05	4.2E-04	2.78E-05	2.78E-05			4.20E-04	negl	4.3E-06	3.24E-04	2.03E-05	0			4.86E-04	negl	**4.9E-04**
Cadmium	1.1E-03	4.2E-04	3.98E-04	3.98E-04			4.20E-04	9.3E-03	3.9E-04	3.24E-04	2.91E-04	0			4.86E-04	3.46E-03	**3.5E-03**
Chromium	1.4E-03	4.2E-04	8.45E-04	8.45E-04			4.20E-04	2.0E-02	5.0E-04	3.24E-04	6.17E-04	0			4.86E-04	7.45E-03	**7.4E-03**
Cobalt	8.4E-05		6.02E-03	6.02E-03				2.1E-04	3.0E-05		4.39E-03	0				7.82E-05	**4.4E-03**
Lead	5.0E-04	1.3E-03	1.51E-03	1.51E-03			1.26E-03	3.3	1.8E-04	9.72E-04	1.10E-03	0			1.46E-03	1.2E+00	**1.23**
Manganese	3.8E-04	8.4E-04	3.00E-03	3.00E-03			8.40E-04	6.8E-02	1.3E-04	6.48E-04	2.19E-03	0			9.72E-04	2.53E-02	**0.03**
Mercury	2.6E-04	4.2E-04	1.13E-04	1.13E-04			4.20E-04		9.2E-05	3.24E-04	8.25E-05	0			4.86E-04		**4.9E-04**
Nickel	2.1E-03	4.2E-04	8.45E-02	8.45E-02			4.20E-04	1.1E-02	7.4E-04	3.24E-04	6.17E-02	0			4.86E-04	4.10E-03	**0.062**
Selenium	2.4E-05	2.1E-03	6.83E-04	6.83E-04			2.10E-03	negl	8.5E-06	1.62E-03	4.99E-04	0			2.43E-03	negl	**2.4E-03**
1.1.1-Trichloroethane			2.36E-04	2.36E-04							1.72E-04	0					**1.7E-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					7.4E-04		1.56E-04	0					**7.4E-04**
Bis(2-ethylhexyl)phthalate								2.2E-03								8.19E-04	**8.2E-04**
Dichlorobenzene	1.2E-03							8.0E-07	4.3E-04							2.98E-07	**4.3E-04**
Ethylbenzene			6.36E-05	6.36E-05							4.64E-05	0					**4.6E-05**
Formaldehyde	7.5E-02	6.10E-02	3.30E-02	3.30E-02			6.10E-02		2.7E-02	4.70E-02	2.41E-02	0			7.06E-02		**0.071**
Hexane	1.8E+00								0.64								**0.638**
Phenol								2.4E-03								8.94E-04	**8.9E-04**
Toluene	3.4E-03		6.20E-03	6.20E-03					1.2E-03		4.53E-03	0					**4.5E-03**
Total PAH Haps	negl		1.13E-03	1.13E-03				3.9E-02	negl		8.25E-04	0				1.46E-02	**1.5E-02**
Polycyclic Organic Matter		3.30E-03					3.30E-03			2.54E-03					3.82E-03		**3.8E-03**
Xylene			1.09E-04	1.09E-04							7.96E-05	0					**8.0E-05**
								Total HAPs	**0.67**	**0.05**	**0.11**	**0**	**0**	**0**	**0.08**	**5.01**	**5.80**
								Worst Single HAP	0.64 (hexane)	0.05 (formaldehyde)	0.06 (formaldehyde)	0	0	0	0.07 (formaldehyde)	3.69 (HCL)	**3.69 (HCL)**

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

Abbreviations

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

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

** Since there are no specific AP-42 emission factors for combustion of Biodiesel, a "worst case" scenario was assumed where PM, PM10/PM2.5, SO2, VOC, CO and HAP emissions are the same as from combustion of No. 2 fuel oil, and based on the U.S. EPA draft technical report titled " A Comprehensive Analysis of Biodiesel Impacts on Exhaust Emissions", dated October 2002 (EPA420-P-02-001) NOx emissions are 10% greater than from combustion of No. 2 fuel oil. This was done to allow the source to use any grade of biodiesel available, maximizing operational flexibility.

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

Company Name: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
Permit Number: 123-32840-00025
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 =	120	MMBtu/hr							
Natural Gas Limitation =	709	MMCF/yr							
No. 2 Fuel Oil Limitation =	1,542,279	gal/yr, and	0.75	% sulfur					
No. 4 Fuel Oil Limitation =	1,460,024	gal/yr, and	0.75	% sulfur					
Residual (No. 5 or No. 6) Fuel Oil Limitation =	0	gal/yr, and	0	% sulfur					
Propane Limitation =	0	gal/yr, and	0	gr/100 ft3 sulfur					
Butane Limitation =	0	gal/yr, and	0	gr/100 ft3 sulfur					
Biodiesel Limitation =	2,313,418	gal/yr, and	0.50	% sulfur					
Used/Waste Oil Limitation =	744,910	gal/yr, and	1.50	% sulfur	1.50	% ash	0.150	% chlorine,	0.060 % lead

Limited Emissions

CO2e Fraction	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	No. 4 Fuel Oil (lb/kgal)	Residual (No. 5 or No. 6) Fuel Oil (lb/kgal)	Propane (lb/kgal)	Butane (lb/kgal)	Biodiesel (lb/kgal)	Used/ Waste Oil (lb/kgal)
	Emission Factor (units)							
CO2	120,161.84	22,501.41	24,153.46	24,835.04	12,500.00	14,506.73	20,837.01	22,024.15
CH4	2.49	0.91	0.97	1.00	0.60	0.67	0.31	0.89
N2O	2.20	0.26	0.19	0.53	0.90	0.90	0.03	0.18

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

CO2e Fraction	Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)	No. 4 Fuel Oil (tons/yr)	Residual (No. 5 or No. 6) Fuel Oil (tons/yr)	Propane (tons/yr)	Butane (tons/yr)	Biodiesel (tons/yr)	Used/ Waste Oil (tons/yr)
	Limited Potential to Emit (tons/yr)							
CO2	42,610.81	17,351.73	17,632.32	0	0	0	24,102.36	8,203.01
CH4	0.88	0.70	0.70	0	0	0	0.36	0.33
N2O	0.78	0.20	0.14	0	0	0	0.04	0.07
Total	42,612.47	17,352.63	17,633.17	0	0	0	24,102.76	8,203.41
CO2e Equivalent Emissions (tons/yr)	42,871.22	17,428.66	17,690.83	0	0	0	24,121.03	8,230.78

CO2e for Worst Case Fuel* (tons/yr)
42,871.22

Methodology
Fuel Limitations from TSD Appendix A.2, page 1 of 15.
Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Sources of Emission Factors for fuel combustion: (Note: To form a conservative estimate, the "worst case" emission factors have been used.)
Natural Gas: Emission Factors for CO2 and CH4 from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/MMCF. Emission Factor for N2O from AP-42 Chapter 1.4
No. 2, No. 4, and Residual (No. 5 or No. 6) Fuel Oil: Emission Factors for CO2 and CH4 from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/kgal. Emission Factor for N2O from AP-42 Chapter 1.3 (dated 5/10), Table 1.3-8
Propane and Butane: Emission Factors for CO2 and CH4 from 40 CFR Part 98 Subpart C, Tables C-1 and 2, have been converted from kg/mmBtu to lb/kgal. Emission Factor for N2O from AP-42 Chapter 1.5 (dated 7/08), Table 1.5-1
Biodiesel: 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.
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: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
Permit Number: 123-32840-00025
Reviewer: Hannah L. Desrosiers

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

Maximum Hourly Asphalt Production =	325	ton/hr
Annual Asphalt Production Limitation =	474,820	ton/yr
PM Dryer/Mixer Limitation =	0.858	lb/ton of asphalt production
PM10 Dryer/Mixer Limitation =	0.345	lb/ton of asphalt production
PM2.5 Dryer/Mixer Limitation =	0.364	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

	Emission Factor or Limitation (lb/ton)			Limited/Controlled Potential to Emit (tons/yr)			
	Drum-Mix Plant (dryer/mixer, controlled by fabric filter)			Drum-Mix Plant (dryer/mixer, controlled by fabric filter)			
Criteria Pollutant	Natural Gas	No. 2 Fuel Oil	Waste Oil	Natural Gas	No. 2 Fuel Oil	Waste Oil	**Worse Case PTE**
PM*	0.858	0.858	0.858	203.7	203.7	203.7	**203.7**
PM10*	0.345	0.345	0.345	81.9	81.9	81.9	**81.9**
PM2.5*	0.364	0.364	0.364	86.4	86.4	86.4	**86.4**
SO2**	0.003	0.011	0.058	0.8	2.6	13.8	**13.8**
NOx**	0.026	0.055	0.055	6.2	13.1	13.1	**13.1**
VOC**	0.032	0.032	0.032	7.6	7.6	7.6	**7.6**
CO***	0.130	0.130	0.130	30.9	30.9	30.9	**30.9**
Hazardous Air Pollutant							
HCl			2.10E-04			0.05	**0.05**
Antimony	1.80E-07	1.80E-07	1.80E-07	4.27E-05	4.27E-05	4.27E-05	**4.27E-05**
Arsenic	5.60E-07	5.60E-07	5.60E-07	1.33E-04	1.33E-04	1.33E-04	**1.33E-04**
Beryllium	negl	negl	negl	negl	negl	negl	**0.00E+00**
Cadmium	4.10E-07	4.10E-07	4.10E-07	9.73E-05	9.73E-05	9.73E-05	**9.73E-05**
Chromium	5.50E-06	5.50E-06	5.50E-06	1.31E-03	1.31E-03	1.31E-03	**1.31E-03**
Cobalt	2.60E-08	2.60E-08	2.60E-08	6.17E-06	6.17E-06	6.17E-06	**6.17E-06**
Lead	6.20E-07	1.50E-05	1.50E-05	1.47E-04	3.56E-03	3.56E-03	**3.56E-03**
Manganese	7.70E-06	7.70E-06	7.70E-06	1.83E-03	1.83E-03	1.83E-03	**1.83E-03**
Mercury	2.40E-07	2.60E-06	2.60E-06	5.70E-05	6.17E-04	6.17E-04	**6.17E-04**
Nickel	6.30E-05	6.30E-05	6.30E-05	1.50E-02	1.50E-02	1.50E-02	**1.50E-02**
Selenium	3.50E-07	3.50E-07	3.50E-07	8.31E-05	8.31E-05	8.31E-05	**8.31E-05**
2,2,4 Trimethylpentane	4.00E-05	4.00E-05	4.00E-05	9.50E-03	9.50E-03	9.50E-03	**9.50E-03**
Acetaldehyde			1.30E-03			0.31	**0.31**
Acrolein			2.60E-05			6.17E-03	**6.17E-03**
Benzene	3.90E-04	3.90E-04	3.90E-04	0.09	0.09	0.09	**0.09**
Ethylbenzene	2.40E-04	2.40E-04	2.40E-04	0.06	0.06	0.06	**0.06**
Formaldehyde	3.10E-03	3.10E-03	3.10E-03	0.74	0.74	0.74	**0.74**
Hexane	9.20E-04	9.20E-04	9.20E-04	0.22	0.22	0.22	**0.22**
Methyl chloroform	4.80E-05	4.80E-05	4.80E-05	0.01	0.01	0.01	**0.01**
MEK			2.00E-05			0.00	**0.00**
Propionaldehyde			1.30E-04			0.03	**0.03**
Quinone			1.60E-04			0.04	**0.04**
Toluene	1.50E-04	2.90E-03	2.90E-03	0.04	0.69	0.69	**0.69**
Total PAH Haps	1.90E-04	8.80E-04	8.80E-04	0.05	0.21	0.21	**0.21**
Xylene	2.00E-04	2.00E-04	2.00E-04	0.05	0.05	0.05	**0.05**

Total HAPs **2.53**
Worst Single HAP **0.735971** **(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
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
Drum-Mix Plant (Dryer/Mixer) Process Emissions

Company Name: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
Permit Number: 123-32840-00025
Reviewer: Hannah L. Desrosiers

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

Maximum Hourly Asphalt Production =	325	ton/hr
Annual Asphalt Production Limitation =	474,820	ton/yr

	Emission Factor (lb/ton) Drum-Mix Plant (dryer/mixer)				Limited Potential to Emit (tons/yr) Drum-Mix Plant (dryer/mixer)			
Criteria Pollutant	Natural Gas	No. 2 Fuel Oil	Waste Oil	Global Warming Potentials (GWP)	Natural Gas	No. 2 Fuel Oil	Waste Oil	**CO2e for Worst Case Fuel (tons/yr)**
CO2	33	33	33	1	7,834.53	7,834.53	7,834.53	**7,894.36**
CH4	0.0120	0.0120	0.0120	21	2.85	2.85	2.85	
N2O				310	0	0	0	
				Total	7,837.38	7,837.38	7,837.38	
				CO2e Equivalent Emissions (tons/yr)	7,894.36	7,894.36	7,894.36	

Methodology

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

There are no emission factors for N20 available in either the 40 CFR 98, Subpart C or AP-42 Chapter 11.1. Therefore, it is assumed that there are no N2O emission anticipated from this process.

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

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

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

Abbreviations

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

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

Company Name: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
Permit Number: 123-32840-00025
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 =	0	ton/yr	0.00	% sulfur
Limited Annual Steel Slag Usage =	375,000	ton/yr	1.00	% sulfur

Type of Slag	SO2 Emission Factor (lb/ton)	Limited Potential to Emit SO2 (tons/yr)
Blast Furnace Slag*	0.0000	0.0
Steel Slag**	0.0021	0.40

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: J.H. Rudolph & Company, Inc.
Source Location: 12050 Optical Road, English, Indiana 47118
Permit Number: 123-32840-00025
Reviewer: Hannah L. Desrosiers

Maximum Hot Oil Heater Fuel Input Rate =	2.115	MMBtu/hr							
Natural Gas Usage =	19	MMCF/yr							
No. 2 Fuel Oil Usage =	132,339	gal/yr, and	0.75	% sulfur					
No. 4 Fuel Oil Usage =	132,339	gal/yr, and	0.75	% sulfur					
Biodiesel Usage =	132,339	gal/yr, and	0.50	% sulfur					
Used/Waste Oil Usage =	132,339	gal/yr, and	1.50	% sulfur	1.50	% ash	0.15	% chlorine,	0.06 % lead

Unlimited/Uncontrolled Emissions

	Emission Factor (units)					Unlimited/Uncontrolled Potential to Emit (tons/yr)					
	Hot Oil Heater					Hot Oil Heater					
Criteria Pollutant	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	No. 4 Fuel Oil* (lb/kgal)	Biodiesel ** (lb/kgal)	Used/ Waste Oil (lb/kgal)	Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)	No. 4 Fuel Oil (tons/yr)	Biodiesel (tons/yr)	Used/ Waste Oil (tons/yr)	**Worse Case Fuel (tons/yr)**
PM	1.9	2.0	7.0	2.0	96.0	0.018	0.132	0.463	0.132	6.352	**6.35**
PM10/PM2.5	7.6	3.3	8.3	3.3	76.5	0.070	0.218	0.549	0.218	5.062	**5.06**
SO2	0.6	106.5	112.5	117.2	220.5	0.006	7.047	7.444	7.752	14.590	**14.59**
NOx	100	20.0	47.0	20.0	19.0	0.926	1.323	3.110	1.323	1.257	**3.11**
VOC	5.5	0.20	0.20	0.2	1.00	0.051	0.013	0.013	0.013	0.066	**0.07**
CO	84	5.0	5.0	5.0	5.0	0.778	0.331	0.331	0.331	0.331	**0.78**
Hazardous Air Pollutant											
HCL					9.90					6.6E-01	**0.66**
Antimony			5.3E-03		negl.			3.5E-04		negl.	**3.5E-04**
Arsenic	2.0E-04	5.6E-04	1.3E-03	5.6E-04	1.1E-01	1.9E-06	3.7E-05	8.7E-05	3.7E-05	7.3E-03	**7.3E-03**
Beryllium	1.2E-05	4.2E-04	2.8E-05	4.2E-04	negl	1.1E-07	2.8E-05	1.8E-06	2.8E-05	negl.	**2.8E-05**
Cadmium	1.1E-03	4.2E-04	4.0E-04	4.2E-04	9.3E-03	1.0E-05	2.8E-05	2.6E-05	2.8E-05	6.2E-04	**6.2E-04**
Chromium	1.4E-03	4.2E-04	8.5E-04	4.2E-04	2.0E-02	1.3E-05	2.8E-05	5.6E-05	2.8E-05	1.3E-03	**1.3E-03**
Cobalt	8.4E-05		6.0E-03		2.1E-04	7.8E-07		4.0E-04		1.4E-05	**4.0E-04**
Lead	5.0E-04	1.3E-03	1.5E-03	1.3E-03	3.30	4.6E-06	8.3E-05	1.0E-04	8.3E-05	2.2E-01	**0.22**
Manganese	3.8E-04	8.4E-04	3.0E-03	8.4E-04	6.8E-02	3.5E-06	5.6E-05	2.0E-04	5.6E-05	4.5E-03	**4.5E-03**
Mercury	2.6E-04	4.2E-04	1.1E-04	4.2E-04		2.4E-06	2.8E-05	7.5E-06	2.8E-05		**2.8E-05**
Nickel	2.1E-03	4.2E-04	8.5E-02	4.2E-04	1.1E-02	1.9E-05	2.8E-05	5.6E-03	2.8E-05	7.3E-04	**5.6E-03**
Selenium	2.4E-05	2.1E-03	6.8E-04	2.1E-03	negl	2.2E-07	1.4E-04	4.5E-05	1.4E-04	negl.	**1.4E-04**
1.1.1-Trichloroethane			2.4E-04					1.6E-05			**1.6E-05**
Benzene	2.1E-03		2.1E-04			1.9E-05		1.4E-05			**1.9E-05**
Bis(2-ethylhexyl)phthalate					2.2E-03					1.5E-04	**1.5E-04**
Dichlorobenzene	1.2E-03				8.0E-07	1.1E-05				5.3E-08	**1.1E-05**
Ethylbenzene			6.4E-05					4.2E-06			**4.2E-06**
Formaldehyde	7.5E-02	6.1E-02	3.3E-02	6.1E-02		6.9E-04	4.0E-03	2.2E-03	4.0E-03		**4.0E-03**
Hexane	1.8E+00					1.7E-02					**0.02**
Phenol					2.4E-03					1.6E-04	**1.6E-04**
Toluene	3.4E-03		6.2E-03			3.1E-05		4.1E-04			**4.1E-04**
Total PAH Haps	negl		1.1E-03		3.9E-02	negl		7.5E-05		2.6E-03	**2.6E-03**
Polycyclic Organic Matter		3.3E-03		3.3E-03			2.2E-04		2.2E-04		**2.2E-04**
Xylenes			1.1E-04					7.2E-06			**7.2E-06**
					Total HAPs =	1.7E-02	4.7E-03	9.6E-03	4.7E-03	0.89	**0.92**
					Worst Single HAP =	1.7E-02 (Hexane)	4.0E-03 (Formaldehyde)	5.6E-03 (Nickel)	4.0E-03 (Formaldehyde)	0.66 (HCL)	**0.66 (HCL)**

Methodology
Equivalent Natural Gas Usage (MMCF/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 MMCF/1,000 MMBtu]
Equivalent Oil Usage (gal/yr) = [Maximum Fuel Input Rate (MMBtu/hr)] * [8,760 hrs/yr] * [1 gal/0.140 MMBtu]
Natural Gas: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Natural Gas Usage (MMCF/yr)] * [Emission Factor (lb/MMCF)] * [ton/2000 lbs]
All Other Fuels: Unlimited/Uncontrolled Potential to Emit (tons/yr) = [Maximum Fuel Usage (gals/yr)] * [Emission Factor (lb/kgal)] * [kgal/1000 gal] * [ton/2000 lbs]
Sources of AP-42 Emission Factors for fuel combustion:
Natural Gas : AP-42 Chapter 1.4 (dated 7/98), Tables 1.4-1, 1.4-2, 1.4-3, and 1.4-4
No. 2 and No.4 Fuel Oil: AP-42 Chapter 1.3 (dated 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
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.

** Since there are no specific AP-42 emission factors for combustion of Biodiesel, a "worst case" scenario was assumed where PM, PM10/PM2.5, SO2, VOC, CO and HAP emissions are the same as from combustion of No. 2 fuel oil, and based on the U.S. EPA draft technical report titled " A Comprehensive Analysis of Biodiesel Impacts on Exhaust Emissions", dated October 2002 (EPA420-P-02-001) NOx emissions are 10% greater than from combustion of No. 2 fuel oil. This was done to allow the source to use any grade of biodiesel available, maximizing operational flexibility.

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: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
Permit Number: 123-32840-00025
Reviewer: Hannah L. Desrosiers

Maximum Hot Oil Heater Fuel Input Rate =	2.115			
Natural Gas Usage =	19	MMBtu/hr		
No. 2 Fuel Oil Usage =	132,339	MMCF/yr	0.75	% sulfur
No. 4 Fuel Oil Usage =	132,339	gal/yr, and	0.75	% sulfur
Biodiesel Usage =	132,339	gal/yr, and	0.50	% sulfur
Used/Waste Oil Usage =	132,339	gal/yr, and	1.50	% sulfur

Unlimited/Uncontrolled Emissions

	Emission Factor (units)					
Criteria Pollutant	Natural Gas (lb/MMCF)	No. 2 Fuel Oil (lb/kgal)	No. 4 Fuel Oil (lb/kgal)	Biodiesel (lb/kgal)	Used/Waste Oil (lb/kgal)	Global Warming Potentials (GWP)
CO2	120,161.84	22,501.41	24,153.46	20,837.01	22,024.15	1
CH4	2.49	0.91	0.97	0.31	0.89	21
N2O	2.2	0.26	0.19	0.03	0.18	310

	Unlimited/Uncontrolled Potential to Emit (tons/yr)					
CO2e Fraction	Natural Gas (tons/yr)	No. 2 Fuel Oil (tons/yr)	No. 4 Fuel Oil (tons/yr)	Biodiesel (tons/yr)	Used/Waste Oil (tons/yr)	**Worse Case CO2e Emissions (tons/yr)**
CO2	1,113.14	1,488.90	1,598.22	1,378.77	1,457.32	**1,495.50**
CH4	0.02	0.06	0.06	0.02	0.06	
N2O	0.02	0.02	0.01	0.002	0.01	
Total	1,113.19	1,488.98	1,598.29	1,378.79	1,457.39	

CO2e Equivalent Emissions (tons/yr)	1,119.95	1,495.50	1,603.52	1,379.84	1,462.26

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.2: Limited Emissions Summary
Hot Oil Heating System - Process Emissions

Company Name: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
Permit Number: 123-32840-00025
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 =	2.115	MMBtu/hr
Natural Gas Usage =	19	MMCF/yr, and
No. 2 Fuel Oil Usage =	132,339	gal/yr

	Emission Factors		Unlimited/Uncontrolled Potential to Emit (tons/yr)		
Criteria Pollutant	Natural Gas (lb/ft3)	No. 2 Fuel Oil (lb/gal)	Natural Gas	No. 2 Fuel Oil	**Worse Case PTE**
VOC	2.60E-08	2.65E-05	2.41E-04	0.002	**0.002**
CO	8.90E-06	0.0012	0.082	0.079	**0.082**
Greenhouse Gas as CO2e*					
CO2	0.20	28.00	1852.74	1852.74	**1,852.74**
Hazardous Air Pollutant					
Formaldehyde	2.60E-08	3.50E-06	2.41E-04	2.32E-04	**2.41E-04**
Acenaphthene		5.30E-07		3.51E-05	**3.51E-05**
Acenaphthylene		2.00E-07		1.32E-05	**1.32E-05**
Anthracene		1.80E-07		1.19E-05	**1.19E-05**
Benzo(b)fluoranthene		1.00E-07		6.62E-06	**6.62E-06**
Fluoranthene		4.40E-08		2.91E-06	**2.91E-06**
Fluorene		3.20E-08		2.12E-06	**2.12E-06**
Naphthalene		1.70E-05		1.12E-03	**1.12E-03**
Phenanthrene		4.90E-06		3.24E-04	**3.24E-04**
Pyrene		3.20E-08		2.12E-06	**2.12E-06**
				Total HAPs	**1.76E-03**
				Worst Single HAP	**1.12E-03** **(Naphthalene)**

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

*Note: There are no emission factors for CH4 and N20 available in either 40 CFR 98, Subpart C or AP-42 Chapter 11.1. Therefore, it is assumed that there are no CH4 and N2O emission anticipated from this process.

Abbreviations
CO = Carbon Monoxide VOC = Volatile Organic Compound CO2 = Carbon Dioxide

Appendix A.2: Limited Emissions Summary
Reciprocating Internal Combustion Engines - Diesel Fuel
Output Rating (<=600 HP)
RAM Lump Breaker

Company Name: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
Permit Number: 123-32840-00025
Reviewer: Hannah L. Desrosiers

Output Horsepower Rating (hp)	210.0
Limited Hours Operated per Year	8,760
Limited Throughput (hp-hr/yr)	1,839,600
Limited Diesel Fuel Usage (gal/yr)	93,974

	Pollutant						
	PM[2]	PM10[2]	direct PM2.5[2]	SO2	NOx	VOC	CO
Emission Factor in lb/hp-hr	0.0022	0.0022	0.0022	0.0021	0.0310	0.0025	0.0067
Emission Factor in lb/kgal[1]	43.07	43.07	43.07	40.13	606.85	49.22	130.77
Limited Emission in tons/yr	2.02	2.02	2.02	1.89	28.51	2.31	6.14

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

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

[2]PM and PM2.5 emission factors are assumed to be equivalent to PM10 emission factors. No information was given regarding which method was used to determine the factor or the fraction of PM10 which is condensable.

Hazardous Air Pollutants (HAPs)

	Pollutant							
	Benzene	Toluene	Xylene	1,3-Butadiene	Formaldehyde	Acetaldehyde	Acrolein	Total PAH HAPs[3]
Emission Factor in lb/MMBtu	9.33E-04	4.09E-04	2.85E-04	3.91E-05	1.18E-03	7.67E-04	9.25E-05	1.68E-04
Emission Factor in lb/kgal[4]	1.28E-01	5.60E-02	3.91E-02	5.36E-03	1.62E-01	1.05E-01	1.27E-02	2.30E-02
Limited Emission in tons/yr	6.01E-03	2.63E-03	1.84E-03	2.52E-04	7.60E-03	4.94E-03	5.96E-04	1.08E-03

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

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

[4]Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) * 1/10^6 (MMBtu/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

Limited Emission of Total HAPs (tons/yr)	**2.49E-02**
Limited Emission of Worst Case HAPs (tons/yr)	**7.60E-03**

Green House Gas Emissions (GHG)

	Pollutant		
	CO2[5]	CH4[6]	N2O[6]
Emission Factor in lb/hp-hr	1.15	NA	NA
Emission Factor in kg/MMBtu	NA	0.003	0.0006
Emission Factor in lb/kgal	22,512.07	0.91	0.18
Limited Emission in tons/yr	1057.77	0.043	0.009

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

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

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

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

Summed Limited Emissions in tons/yr	**1,057.82**
CO2e Total in tons/yr	**1,061.30**

Methodology

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

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

Emission Factors are from AP42 (Supplement B 10/96), Tables 3.3-1 and 3.3-2 and have been converted to lb/kgal

CH4 and N2O Emission Factor from 40 CFR 98 Subpart C Table C-2 and have been converted to lb/kgal

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

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

CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).

Appendix A.2: Limited Emissions Summary
Large Reciprocating Internal Combustion Engines - Diesel Fuel
Output Rating (>600 HP)

Company Name: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
Permit Number: 123-32840-00025
Reviewer: Hannah L. Desrosiers

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

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

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

[1] The AP-42 Chapter 3.4-1 emission factors in lb/hp-hr were converted to lb/kgal emission factors using an average brake specific fuel consumption of 7,000 Btu / hp-hr, diesel heating value of 19,300 Btu / lb, and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

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

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

[2]Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) * 1/10^6 (MMBtu/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

Hazardous Air Pollutants (HAPs)

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

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

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

[4]Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) * 1/10^6 (MMBtu/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

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

Green House Gas Emissions (GHG)

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

[5] The AP-42 Chapter 3.4-1 emission factors in lb/hp-hr were converted to lb/kgal emission factors using an average brake specific fuel consumption of 7,000 Btu / hp-hr, diesel heating value of 19,300 Btu / lb, and diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1) since the source will limit the emissions from this unit by limiting the fuel usage.

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

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

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

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

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

Methodology

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

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

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

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

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

Limited Emissions (tons/yr) = [Limited Diesel Fuel Usage (gal/yr) x Emission Factor (lb/kgal)] / (1,000 ga/kgal) / (2,000 lb/ton)
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).

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

Company Name: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
Permit Number: 123-32840-00025
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 =	474,820	tons/yr

	Emission Factor (lb/ton asphalt)			Limited Potential to Emit (tons/yr)			
Pollutant	**Load-Out**	**Silo Filling**	**On-Site Yard**	**Load-Out**	**Silo Filling**	**On-Site Yard**	**Total**
Total PM*	5.2E-04	5.9E-04	NA	0.12	0.14	NA	**0.26**
Organic PM	3.4E-04	2.5E-04	NA	0.08	0.060	NA	**0.14**
TOC	0.004	0.012	0.001	0.99	2.89	0.261	**4.1**
CO	0.001	0.001	3.5E-04	0.32	0.280	0.084	**0.68**

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

PM/HAPs	**0.006**	**0.007**	**0**	**0.013**
VOC/HAPs	**0.015**	**0.037**	**0.004**	**0.055**
non-VOC/HAPs	**7.6E-05**	**7.8E-06**	**2.0E-05**	**1.0E-04**
non-VOC/non-HAPs	**0.07**	**0.04**	**0.02**	**0.13**

Total VOCs	**0.93**	**2.89**	**0.2**	**4.1**
Total HAPs	**0.02**	**0.04**	**0.004**	**0.07**
			Worst Single HAP	**0.021 (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: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
Permit Number: 123-32840-00025
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%	2.1E-04	2.8E-04	NA	4.9E-04
Acenaphthylene	208-96-8	PM/HAP	POM	Organic PM	0.028%	0.014%	2.3E-05	8.4E-06	NA	3.1E-05
Anthracene	120-12-7	PM/HAP	POM	Organic PM	0.07%	0.13%	5.7E-05	7.8E-05	NA	1.4E-04
Benzo(a)anthracene	56-55-3	PM/HAP	POM	Organic PM	0.019%	0.056%	1.5E-05	3.4E-05	NA	4.9E-05
Benzo(b)fluoranthene	205-99-2	PM/HAP	POM	Organic PM	0.0076%	0	6.2E-06	0	NA	6.2E-06
Benzo(k)fluoranthene	207-08-9	PM/HAP	POM	Organic PM	0.0022%	0	1.8E-06	0	NA	1.8E-06
Benzo(g,h,i)perylene	191-24-2	PM/HAP	POM	Organic PM	0.0019%	0	1.5E-06	0	NA	1.5E-06
Benzo(a)pyrene	50-32-8	PM/HAP	POM	Organic PM	0.0023%	0	1.9E-06	0	NA	1.9E-06
Benzo(e)pyrene	192-97-2	PM/HAP	POM	Organic PM	0.0078%	0.0095%	6.3E-06	5.7E-06	NA	1.2E-05
Chrysene	218-01-9	PM/HAP	POM	Organic PM	0.103%	0.21%	8.3E-05	1.3E-04	NA	2.1E-04
Dibenz(a,h)anthracene	53-70-3	PM/HAP	POM	Organic PM	0.00037%	0	3.0E-07	0	NA	3.0E-07
Fluoranthene	206-44-0	PM/HAP	POM	Organic PM	0.05%	0.15%	4.0E-05	9.0E-05	NA	1.3E-04
Fluorene	86-73-7	PM/HAP	POM	Organic PM	0.77%	1.01%	6.2E-04	6.1E-04	NA	1.2E-03
Indeno(1,2,3-cd)pyrene	193-39-5	PM/HAP	POM	Organic PM	0.00047%	0	3.8E-07	0	NA	3.8E-07
2-Methylnaphthalene	91-57-6	PM/HAP	POM	Organic PM	2.38%	5.27%	1.9E-03	3.2E-03	NA	0.005
Naphthalene	91-20-3	PM/HAP	POM	Organic PM	1.25%	1.82%	1.0E-03	1.1E-03	NA	2.1E-03
Perylene	198-55-0	PM/HAP	POM	Organic PM	0.022%	0.03%	1.8E-05	1.8E-05	NA	3.6E-05
Phenanthrene	85-01-8	PM/HAP	POM	Organic PM	0.81%	1.80%	6.6E-04	1.1E-03	NA	1.7E-03
Pyrene	129-00-0	PM/HAP	POM	Organic PM	0.15%	0.44%	1.2E-04	2.7E-04	NA	3.9E-04
Total PAH HAPs							**0.005**	**0.007**	**NA**	**0.012**
Other semi-volatile HAPs										
Phenol		PM/HAP	---	Organic PM	1.18%	0	9.6E-04	0	0	9.6E-04

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%	**0.93**	**2.89**	**0.25**	**4.07**
non-VOC/non-HAPS										
Methane	74-82-8	non-VOC/non-HAP	---	TOC	6.50%	0.26%	6.4E-02	7.5E-03	1.7E-02	0.089
Acetone	67-64-1	non-VOC/non-HAP	---	TOC	0.046%	0.055%	4.5E-04	1.6E-03	1.2E-04	0.002
Ethylene	74-85-1	non-VOC/non-HAP	---	TOC	0.71%	1.10%	7.0E-03	3.2E-02	1.9E-03	0.041
Total non-VOC/non-HAPS					7.30%	1.40%	**0.072**	**0.041**	**0.019**	**0.13**
Volatile organic HAPs										
Benzene	71-43-2	VOC/HAP	---	TOC	0.052%	0.032%	5.1E-04	9.3E-04	1.4E-04	1.6E-03
Bromomethane	74-83-9	VOC/HAP	---	TOC	0.0096%	0.0049%	9.5E-05	1.4E-04	2.5E-05	2.6E-04
2-Butanone	78-93-3	VOC/HAP	---	TOC	0.049%	0.039%	4.8E-04	1.1E-03	1.3E-04	1.7E-03
Carbon Disulfide	75-15-0	VOC/HAP	---	TOC	0.013%	0.016%	1.3E-04	4.6E-04	3.4E-05	6.3E-04
Chloroethane	75-00-3	VOC/HAP	---	TOC	0.00021%	0.004%	2.1E-06	1.2E-04	5.5E-07	1.2E-04
Chloromethane	74-87-3	VOC/HAP	---	TOC	0.015%	0.023%	1.5E-04	6.7E-04	3.9E-05	8.5E-04
Cumene	92-82-8	VOC/HAP	---	TOC	0.11%	0	1.1E-03	0	2.9E-04	1.4E-03
Ethylbenzene	100-41-4	VOC/HAP	---	TOC	0.28%	0.038%	2.8E-03	1.1E-03	7.3E-04	0.005
Formaldehyde	50-00-0	VOC/HAP	---	TOC	0.088%	0.69%	8.7E-04	2.0E-02	2.3E-04	0.021
n-Hexane	100-54-3	VOC/HAP	---	TOC	0.15%	0.10%	1.5E-03	2.9E-03	3.9E-04	0.005
Isooctane	540-84-1	VOC/HAP	---	TOC	0.0018%	0.00031%	1.8E-05	9.0E-06	4.7E-06	3.1E-05
Methylene Chloride	75-09-2	non-VOC/HAP	---	TOC	0	0.00027%	0	7.8E-06	0	7.8E-06
MTBE	1634-04-4	VOC/HAP	---	TOC	0	0	0	0	0	0
Styrene	100-42-5	VOC/HAP	---	TOC	0.0073%	0.0054%	7.2E-05	1.6E-04	1.9E-05	2.5E-04
Tetrachloroethene	127-18-4	non-VOC/HAP	---	TOC	0.0077%	0	7.6E-05	0	2.0E-05	9.6E-05
Toluene	100-88-3	VOC/HAP	---	TOC	0.21%	0.062%	2.1E-03	1.8E-03	5.5E-04	0.004
1,1,1-Trichloroethane	71-55-6	VOC/HAP	---	TOC	0	0	0	0	0	0
Trichloroethene	79-01-6	VOC/HAP	---	TOC	0	0	0	0	0	0
Trichlorofluoromethane	75-69-4	VOC/HAP	---	TOC	0.0013%	0	1.3E-05	0	3.4E-06	1.6E-05
m-/p-Xylene	1330-20-7	VOC/HAP	---	TOC	0.41%	0.20%	4.0E-03	5.8E-03	1.1E-03	0.011
o-Xylene	95-47-6	VOC/HAP	---	TOC	0.08%	0.057%	7.9E-04	1.6E-03	2.1E-04	2.6E-03
Total volatile organic HAPs					1.50%	1.30%	**0.015**	**0.038**	**0.004**	**0.056**

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: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
Permit Number: 123-32840-00025
Reviewer: Hannah L. Desrosiers

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

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

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

Material	Silt Content (wt %)*	Emission Factor (lb/acre/day)	Maximum Anticipated Pile Size (acres)**	PTE of PM (tons/yr)	PTE of PM10/PM2.5 (tons/yr)
Sand	2.6	3.01	1.50	0.824	0.288
Gravel	1.6	1.85	1.50	0.507	0.177
Limestone	1.6	1.85	8.00	2.704	0.946
RAP	0.5	0.58	1.50	0.158	0.055
Shingles	0.5	0.58	1.50	0.158	0.055
Steel Slag	3.8	4.40	1.50	1.204	0.421
			Totals	**5.56**	**1.94**

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: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
Permit Number: 123-32840-00025
Reviewer: Hannah L. Desrosiers

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

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

Ef = k*(0.0032)*[(U/5)^1.3 / (M/2)^1.4]
where: Ef = Emission factor (lb/ton)

k (PM) =	0.74	= particle size multiplier (0.74 assumed for aerodynamic diameter <=100 um)
k (PM10) =	0.35	= particle size multiplier (0.35 assumed for aerodynamic diameter <=10 um)
k (PM2.5) =	0.053	= particle size multiplier (0.053 assumed for aerodynamic diameter <=2.5 um)
U =	10.2	= worst case annual mean wind speed (Source: NOAA, 2006*)
M =	4.0	= material % moisture content of aggregate (Source: AP-42 Section 11.1.1.1)
Ef (PM) =	2.27E-03	lb PM/ton of material handled
Ef (PM10) =	1.07E-03	lb PM10/ton of material handled
Ef (PM2.5) =	1.62E-04	lb PM2.5/ton of material handled

Annual Asphalt Production Limitation =	474,820	tons/yr
Percent Asphalt Cement/Binder (weight %) =	5.0%	
Maximum Material Handling Throughput =	451,079	tons/yr

Type of Activity	Limited PTE of PM (tons/yr)	Limited PTE of PM10 (tons/yr)	Limited PTE of PM2.5 (tons/yr)
Truck unloading of materials into storage piles	0.51	0.24	0.04
Front-end loader dumping of materials into feeder bins	0.51	0.24	0.04
Conveyor dropping material into dryer/mixer or batch tower	0.51	0.24	0.04
Total (tons/yr)	**1.53**	**0.73**	**0.11**

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, and recycled asphalt materials (RAM) such as recycled asphalt pavement (RAP), and recycled asphalt shingles (RAS), gravel, slag, and other additivies
*Worst case annual mean wind speed (Indianapolis, IN) from "Comparative Climatic Data", National Climatic Data Center, NOAA, 2006

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

Operation	Uncontrolled Emission Factor for PM (lbs/ton)*	Uncontrolled Emission Factor for PM10 (lbs/ton)*	Limited PTE of PM (tons/yr)	Limited PTE of PM10/PM2.5 (tons/yr)**
Crushing	0.0054	0.0024	1.22	0.54
Screening	0.025	0.0087	5.64	1.96
Conveying	0.003	0.0011	0.68	0.25
Limited Potential to Emit (tons/yr) =			**7.53**	**2.75**

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 and recycled asphalt materials (RAM) such as recycled asphalt pavement (RAP), and/or recycled asphalt shingles (RAS).
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: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
Permit Number: 123-32840-00025
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 =	474,820	tons/yr
Percent Asphalt Cement/Binder (weight %) =	5.0%	
Maximum Material Handling Throughput =	451,079	tons/yr
Maximum Asphalt Cement/Binder Throughput =	23,741	tons/yr
No. 2 Fuel Oil Limitation =	1,542,279	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/RAM Truck Enter Full	Dump truck (16 CY)	17.0	22.4	39.4	2.0E+04	7.9E+05	300	0.057	1,144.2
Aggregate/RAM Truck Leave Empty	Dump truck (16 CY)	17.0	0	17.0	2.0E+04	3.4E+05	300	0.057	1,144.2
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	12.0	36.0	48.0	6.6E+02	3.2E+04	300	0.057	37.5
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.0	6.6E+02	7.9E+03	300	0.057	37.5
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	12.0	32.0	44.0	1.6E+02	7.2E+03	300	0.057	9.3
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.0	1.6E+02	2.0E+03	300	0.057	9.3
Aggregate/RAM Loader Full	Front-end loader (3 CY)	15.0	4.2	19.2	1.1E+05	2.1E+06	300	0.057	6,102.3
Aggregate/RAM Loader Empty	Front-end loader (3 CY)	15.0	0	15.0	1.1E+05	1.6E+06	300	0.057	6,102.3
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	17.0	24.0	41.0	2.0E+04	8.1E+05	300	0.057	1,124.1
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	17.0	0	17.0	2.0E+04	3.4E+05	300	0.057	1,124.1
	Total				**3.0E+05**	**6.0E+06**			**1.7E+04**

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

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

	PM	PM10	PM2.5	
where k =	4.9	1.5	0.15	lb/mi = particle size multiplier (AP-42 Table 13.2.2-2 for Industrial Roads)
s =	4.8	4.8	4.8	% = mean % silt content of unpaved roads (AP-42 Table 13.2.2-3 Sand/Gravel Processing Plant Road)
a =	0.7	0.9	0.9	= constant (AP-42 Table 13.2.2-2)
W =	20.3	20.3	20.3	tons = average vehicle weight (provided by source)
b =	0.45	0.45	0.45	= constant (AP-42 Table 13.2.2-2)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, Eext = E * [(365 - P)/365]
Mitigated Emission Factor, Eext = E * [(365 - P)/365]
where P = 125 days of rain greater than or equal to 0.01 inches (see Fig. 13.2.2-1)

	PM	PM10	PM2.5	
Unmitigated Emission Factor, Ef =	6.10	1.55	0.16	lb/mile
Mitigated Emission Factor, Eext =	4.01	1.02	0.10	lb/mile
Dust Control Efficiency =	50%	50%	50%	(pursuant to control measures outlined in fugitive dust control plan)

Process	Vehicle Type	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Aggregate/RAM Truck Enter Full	Dump truck (16 CY)	3.49	0.89	0.09	2.29	0.58	0.06	1.15	0.29	0.03
Aggregate/RAM Truck Leave Empty	Dump truck (16 CY)	3.49	0.89	0.09	2.29	0.58	0.06	1.15	0.29	0.03
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	0.114	0.029	0.00	0.075	0.019	1.9E-03	0.038	0.010	9.6E-04
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	0.114	0.029	0.00	0.075	0.019	1.9E-03	0.038	0.010	9.6E-04
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	0.028	0.007	7.2E-04	0.019	0.005	4.7E-04	0.009	0.002	2.4E-04
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	0.028	0.007	7.2E-04	0.019	0.005	4.7E-04	0.009	0.002	2.4E-04
Aggregate/RAM Loader Full	Front-end loader (3 CY)	18.60	4.74	0.47	12.23	3.12	0.31	6.11	1.56	0.16
Aggregate/RAM Loader Empty	Front-end loader (3 CY)	18.60	4.74	0.47	12.23	3.12	0.31	6.11	1.56	0.16
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	3.43	0.87	0.09	2.25	0.57	0.06	1.13	0.29	0.03
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	3.43	0.87	0.09	2.25	0.57	0.06	1.13	0.29	0.03
	Totals	**51.31**	**13.08**	**1.31**	**33.74**	**8.60**	**0.86**	**16.87**	**4.30**	**0.43**

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
RAM = recycled asphalt materials: including recycled asphalt pavement (RAP) and/or recycled asphalt shingles (RAS).

Appendix A.2: Limited Emissions Summary
Paved Roads
Limited Emissions

Company Name: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
Permit Number: 123-32840-00025
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 =	474,820	tons/yr
Percent Asphalt Cement/Binder (weight %) =	5.0%	
Maximum Material Handling Throughput =	451,079	tons/yr
Maximum Asphalt Cement/Binder Throughput =	23,741	tons/yr
No. 2 Fuel Oil Limitation =	1,542,279	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/RAM Truck Enter Full	Dump truck (16 CY)	17.0	22.4	39.40	2.0E+04	7.9E+05	100	0.019	381.4
Aggregate/RAM Truck Leave Empty	Dump truck (16 CY)	17.0	0	17.00	2.0E+04	3.4E+05	100	0.019	381.4
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	12.0	36.0	48.00	6.6E+02	3.2E+04	100	0.019	12.5
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.00	6.6E+02	7.9E+03	100	0.019	12.5
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	12.0	32.0	44.00	1.6E+02	7.2E+03	100	0.019	3.1
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	12.0	0	12.00	1.6E+02	2.0E+03	100	0.019	3.1
Aggregate/RAM Loader Full	Front-end loader (3 CY)	15.0	4.2	19.20	1.1E+05	2.1E+06	100	0.019	2,034.1
Aggregate/RAM Loader Empty	Front-end loader (3 CY)	15.0	0	15.00	1.1E+05	1.6E+06	100	0.019	2,034.1
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	17.0	24.0	41.00	2.0E+04	8.1E+05	100	0.019	374.7
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	17.0	0	17.00	2.0E+04	3.4E+05	100	0.019	374.7
Total					**3.0E+05**	**6.0E+06**			**5.6E+03**

Average Vehicle Weight Per Trip =	20.3	tons/trip
Average Miles Per Trip =	0.019	miles/trip

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

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

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

where p =	125	days of rain greater than or equal to 0.01 inches (see Fig. 13.2.1-2)
N =	365	days per year

	PM	PM10	PM2.5	
Unmitigated Emission Factor, Ef =	0.15	0.03	0.01	lb/mile
Mitigated Emission Factor, Eext =	0.14	0.03	0.01	lb/mile
Dust Control Efficiency =	50%	50%	50%	(pursuant to control measures outlined in fugitive dust control plan)

Process	Vehicle Type	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Aggregate/RAM Truck Enter Full	Dump truck (16 CY)	0.03	0.01	0.00	0.03	0.01	0.00	0.01	0.00	0.00
Aggregate/RAM Truck Leave Empty	Dump truck (16 CY)	0.03	0.01	0.00	0.03	0.01	0.00	0.01	0.00	0.00
Asphalt Cement/Binder Truck Enter Full	Tanker truck (6000 gal)	0.001	0.000	4.6E-05	0.001	0.000	4.2E-05	0.000	8.5E-05	2.1E-05
Asphalt Cement/Binder Truck Leave Empty	Tanker truck (6000 gal)	0.001	0.000	4.6E-05	0.001	0.000	4.2E-05	0.000	8.5E-05	2.1E-05
Fuel Oil Truck Enter Full	Tanker truck (6000 gal)	2.3E-04	4.6E-05	1.1E-05	2.1E-04	4.2E-05	1.0E-05	1.0E-04	2.1E-05	5.2E-06
Fuel Oil Truck Leave Empty	Tanker truck (6000 gal)	2.3E-04	4.6E-05	1.1E-05	2.1E-04	4.2E-05	1.0E-05	1.0E-04	2.1E-05	5.2E-06
Aggregate/RAM Loader Full	Front-end loader (3 CY)	0.15	0.03	0.01	0.14	0.03	0.01	0.07	0.01	0.00
Aggregate/RAM Loader Empty	Front-end loader (3 CY)	0.15	0.03	0.01	0.14	0.03	0.01	0.07	0.01	0.00
Asphalt Concrete Truck Leave Full	Dump truck (16 CY)	0.03	0.01	0.00	0.03	0.01	0.00	0.01	0.00	0.00
Asphalt Concrete Truck Enter Empty	Dump truck (16 CY)	0.03	0.01	0.00	0.03	0.01	0.00	0.01	0.00	0.00
	Totals	**0.42**	**0.08**	**0.02**	**0.38**	**0.08**	**0.02**	**0.19**	**0.04**	**0.01**

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
RAM = recycled asphalt materials: including recycled asphalt pavement (RAP) and/or recycled asphalt shingles (RAS).

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

Company Name: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
Permit Number: 123-32840-00025
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 = 68.89 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%	72.51	68.89	1.053
Cut back asphalt medium cure (assuming kerosene solvent)	28.6%	70.0%	98.41	68.89	1.429
Cut back asphalt slow cure (assuming fuel oil solvent)	20.0%	25.0%	275.56	68.89	4.000
Emulsified asphalt with solvent (assuming water, emulsifying agent, and 15% fuel oil solvent)	15.0%	46.4%	148.47	68.89	2.155
Other asphalt with solvent binder	25.9%	2.5%	2,755.56	68.89	40.0
Worst Case Limited PTE of VOC =				**68.89**	

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) =	**17.97**	
Limited PTE of Single HAP (tons/yr) =	**6.20**	**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% Xylenes**	**0.31% Naphthalene**	**0.50% Xylenes**	**0.23% Xylenes**	**0.07% Chrysene**

Methodology
Limited PTE of VOC (tons/yr) = [Weight % VOC solvent in binder that evaporates] * [VOC Solvent Usage Limitation (tons/yr)]
Limited PTE of Total HAPs (tons/yr) = [Worst Case Total HAP Content of VOC solvent (weight %)] * [Worst Case Limited PTE of VOC (tons/yr)]
Limited PTE of Single HAP (tons/yr) = [Worst Case Single HAP Content of VOC solvent (weight %)] * [Worst Case Limited PTE of VOC (tons/yr)]

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

Abbreviations
VOC = Volatile Organic Compounds
PTE = Potential to Emit

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

Company Name: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
Permit Number: 123-32840-00025
Reviewer: Hannah L. Desrosiers

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

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

Gasoline Throughput =	40.0	gallons/day
=	14.6	kgal/yr

Volatile Organic Compounds

Emission Source	Emission Factor (lb/kgal of throughput)	PTE of VOC (tons/yr)*
Filling storage tank (balanced submerged filling)	0.3	0.002
Tank breathing and emptying	1.0	0.007
Vehicle refueling (displaced losses - controlled)	1.1	0.008
Spillage	0.7	0.005
Total		**0.02**

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) =	**0.01**	
Limited PTE of Single HAP (tons/yr) =	**0.002**	**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.3: Unlimited Potential to Emit of the Revision

Company Name: J.H. Rudolph & Company, Inc. - St. Croix Plant
Source Address: 12050 Optical Road, English, Indiana 47118
Permit Number: F123-32840-00025
Reviewer: Hannah L. Desrosiers

Process Description	Unlimited/Uncontrolled Potential to Emit (tons/year)										
	Criteria Pollutants							Greenhouse Gas Pollutants	Hazardous Air Pollutants		
	PM	PM10	PM2.5	SO2	NOx	VOC	CO	CO_2e	Total HAPs	Worst Case HAP	
Ducted Emissions											
Diesel-Fired Generator Fuel Combustion (< 600 HP) (RAM Lump Breaker)	2.02	2.02	2.02	1.89	28.51	2.31	6.14	1,061.30	0.025	0.008	(formaldehyde)
Diesel-Fired Generator Fuel Combustion (< 600 HP) (RAM Crusher) *	0	0	0	0	0	0	0	0	0	0	N/A
Fugitive Emissions											
Material Crushing	2.37	1.05	1.05	0	0	0	0	0	0	0	N/A
Material Storage Piles (limestone)	2.70	0.95	0.95	0	0	0	0	0	0	0	N/A
Totals Unlimited/Uncontrolled PTE	**7.09**	**4.02**	**4.02**	**1.89**	**28.51**	**2.31**	**6.14**	**1,061.30**	**0.02**	**0.01**	(formaldehyde)

N/A = not applicable
RAM = recycled asphalt materials: including recycled asphalt pavement (RAP) and/or recycled asphalt shingles (RAS).
* The diesel fuel-fired RAM Crusher has been determined a nonroad vehicle under 40 CFR 60, and 40 CFR 63, therefore, the fuel combustion emissions are not counted toward PSD and TV applicablilty.

Appendix A.3: Unlimited Potential to Emit of the Revision
Reciprocating Internal Combustion Engines - Diesel Fuel
Output Rating (<=600 HP)
RAM Lump Breaker

Company Name: J.H. Rudolph & Company, Inc. - St. Croix Plant
Source Address: 12050 Optical Road, English, Indiana 47118
Permit Number: F123-32840-00025
Reviewer: Hannah L. Desrosiers

Output Horsepower Rating (hp)	210.0
Maximum Hours Operated per Year	8760
Potential Throughput (hp-hr/yr)	1,839,600
Maximum Diesel Fuel Usage (gal/yr)	93,974

	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	2.02	2.02	2.02	1.89	28.51	2.31	6.14

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

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

[2]PM and PM2.5 emission factors are assumed to be equivalent to PM10 emission factors. No information was given regarding which method was used to determine the factor or the fraction of PM10 which is condensable.

Hazardous Air Pollutants (HAPs)

	Pollutant							
	Benzene	Toluene	Xylene	1,3-Butadiene	Formaldehyde	Acetaldehyde	Acrolein	Total PAH HAPs[3]
Emission Factor in lb/MMBtu	9.33E-04	4.09E-04	2.85E-04	3.91E-05	1.18E-03	7.67E-04	9.25E-05	1.68E-04
Emission Factor in lb/kgal[4]	1.28E-01	5.60E-02	3.91E-02	5.36E-03	1.62E-01	1.05E-01	1.27E-02	2.30E-02
Potential Emission in tons/yr	6.01E-03	2.63E-03	1.84E-03	2.52E-04	**7.60E-03**	4.94E-03	5.96E-04	1.08E-03

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

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

[4]Emission factor (lb/kgal) = AP-42 EF (lb/MMBtu) * 1/10^6 (MMBtu/Btu) * 19,300 (Btu/lb) * 7.1 (lb/gal) * 1,000 (gal/kgal)

Potential Emission of Total HAPs (tons/yr)	**0.025**
Potential Emission of Worst Case HAPs (tons/yr)	**7.60E-03**

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	1057.77	0.043	0.009

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

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

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

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

Summed Potential Emissions in tons/yr	**1057.82**
CO2e Total in tons/yr	**1061.30**

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.3: Unlimited Potential to Emit of the Revision
Material Crushing, Screening, and Conveying
RAM Lump Breaker

Company Name: J.H. Rudolph & Company, Inc. - St. Croix Plant
Source Address: 12050 Optical Road, English, Indiana 47118
Permit Number: F123-32840-00025
Reviewer: Hannah L. Desrosiers

Material Screening and Conveying (AP-42 Section 11.19.2)

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

Maximum Material Throughput = 100 tons/hr

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 (aka Lump Breaking)	0.0054	0.0024	2.37	1.05
			2.37	**1.05**

Methodology

Maximum Material Throughput (tons/hr) = [Maximum Capacity of the Equipment]

Unlimited Potential to Emit (tons/yr) = [Maximum Material Throughput (tons/hr)] * [Emission Factor (lb/ton)] * [ton/2000 lbs] * [8760 hrs/yr]

Raw materials include the following recycled asphalt materials (RAM): recycled asphalt pavement (RAP) and/or recycled asphalt shingles (RAS).

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

326 IAC 6-3 Compliance Determination

Unit ID	Annual PM Emissions (tons/yr)	Conversion Factor	Hourly PM Emission Rate (lbs/hr)
Crushing (aka Lump Breaking)	2.37	0.23	**0.540**

Methodology

Hourly PM Emission Rate (lbs/hr) = Annual PM Emissions (ton/yr) × Conversion Factor (2000 lbs/ton / 8760 hrs/yr)

Appendix A.3: Unlimited Potential to Emit of the Revision
Material Storage Piles

Company Name: J.H. Rudolph & Company, Inc.
Source Address: 12050 Optical Road, English, Indiana 47118
Permit Number: 123-32840-00025
Reviewer: Hannah L. Desrosiers

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

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

Material	Silt Content (wt %)*	Emission Factor (lb/acre/day)	Maximum Anticipated Pile Size (acres)**	PTE of PM (tons/yr)	PTE of PM10/PM2.5 (tons/yr)
Limestone	1.6	1.85	8.00	2.704	0.946
			Totals	**2.70**	**0.95**

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

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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Governor

Thomas W. Easterly
Commissioner

SENT VIA U.S. MAIL: CONFIRMED DELIVERY AND SIGNATURE REQUESTED

TO: Brian Peters
EHS Manager
J.H. Rudolph & Company, Inc. – St. Croix Plant
534 Mozart St
Tell City, Indiana 47586

DATE: July 31, 2013

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

SUBJECT: Final Decision
FESOP - Significant Permit Revision
123-32840-00025

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:
Alvin Evans, COO / J.H. Rudolph & Company – St. Croix Plant
Christopher Zirkelbach / Environmental & Safety Solutions
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.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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Michael R. Pence
Governor
Thomas W. Easterly
Commissioner

July 31, 2013

TO: Tell City Perry County Public Library

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

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

Applicant Name: **J.H. Rudolph & Company, Inc. – St. Croix Plant**
Permit Number: **123-32840-00025**

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 6/13/2013

Mail Code 61-53

IDEM Staff	AWELLS 7/31/2013 J. H. Rudolph & Company, Inc. - St. Croix Plant 123-32840-00025 Final		AFFIX STAMP HERE IF USED AS CERTIFICATE OF MAILING
Name and address of Sender		Type of Mail: **CERTIFICATE OF MAILING ONLY**	

Indiana Department of Environmental Management
Office of Air Quality – Permits Branch
100 N. Senate
Indianapolis, IN 46204

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		Brian Peters J. H. Rudolph & Company, Inc. - St. Croix Plant 534 Mozart St Tell City IN 47586 (Source CAATS) confirmed delivery									
2		Alvin C. Evans COO J. H. Rudolph & Company, Inc. - St. Croix Plant PO Box 5226 Evansville IN 47715 *(RO CAATS)*									
3		Perry County Health Department Courthouse Annex Cannelton IN 47520-1251 *(Health Department)*									
4		English Town Council and Town Manager PO Box 258 English IN 47118 *(Local Official)*									
5		Mr. Ron Hendrich Schwab Corporation 4630 E St Rd 66 Cannelton IN 47520 *(Affected Party)*									
6		Perry County Commissioners Court House, 2219 Payne Street Tell City IN 47586 *(Local Official)*									
7		Tell City Perry County Public Library 2328 Tell Street Tell City IN 47586-1717 *(Library)*									
8		Mr. Mark Wilson Evansville Courier & Press P.O. Box 268 Evansville IN 47702-0268 *(Affected Party)*									
9		Christopher Zirkelbach Environmental & Safety Solutions 201 NW Fourth Street, Old Court House, Ste 106 Evansville IN 47708 *(Consultant)*									
10		John Blair 800 Adams Ave Evansville IN 47713 *(Affected Party)*									
11											
12											
13											
14											
15											

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