



Mitchell E. Daniels, Jr.
Governor

Thomas W. Easterly
Commissioner

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Indianapolis, Indiana 46204
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TO: Interested Parties / Applicant
DATE: March 19, 2008
RE: Indiana Renewable Fuels / 099-24648-00103
FROM: Matthew Stuckey, Deputy Branch Chief
Permits Branch
Office of Air Quality

Notice of Decision: Approval - Effective Immediately

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

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

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

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

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

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

Enclosures
FNPER.dot12/03/07



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New Source Construction and Federally Enforceable State Operating Permit OFFICE OF AIR QUALITY

Indiana Renewable Fuels, LLC Section 18, Township 32 North, Range 3 West Argos, Marshall County, Indiana 46501

(herein known as the Permittee) is hereby authorized to construct and 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 2-7 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.: F099-24648-00103	
Original signed by: Matthew Stuckey, Chief Permits Branch Office of Air Quality	Issuance Date: March 19, 2008 Expiration Date: March 19, 2013

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Certification Form

Emergency Occurrence Form

Quarterly Report Form - Denatured Ethanol Loadout

Quarterly Report Form - Ethanol Loadout Flare - Fuel Usage

Quarterly Report Form - Biomethanator Flare - Fuel Usage

Quarterly Report Form - Natural Gas / Landfill Gas Fired Boilers, EP-4a and EP-4b - Landfill Gas Usage

Quarterly Deviation and Compliance Monitoring Report Form

Affidavit of Construction

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.4 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 ethanol production plant.

Source Address:	Section 18, Township 32 North, Range 3 West, Argos, Indiana 46501
Mailing Address:	1007 West Third Street Rochester, Indiana 46975
General Source Phone Number:	(574) 224-3842
SIC Code:	2869
County Location:	Marshall
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Federally Enforceable State Operating Permit Program; Minor Source, under PSD; Minor Source, Section 112 of the Clean Air Act; Ethanol Plant is Not 1 of 28 Listed Source Categories; and Boilers are Considered 1 of 28 Listed Source Categories, Nested within the Ethanol Plant.

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:

Grain Receiving & Processing Facilities:

- (a) One (1) grain receiving and handling operation, identified as EP-1, approved for construction in 2007, with an annual maximum throughput of 43,214,287 bushels per year, a maximum capacity of 40,000 bushels per hour (1,120 tons per hour) by rail and 20,000 bushels per hour (560 tons per hour) by truck, controlled by baghouses S20 (unloading and transfer baghouse) and S21 (unloading baghouse), exhausting through stack S20 and S21, and consisting of the following:
- (1) One (1) corn unloading operation consisting of:
 - (A) One (1) north unloading pit to receive grain by truck, identified as EP-1B, with a maximum capacity of 560 tons per hour, controlled by baghouse S21 and exhausting to stack S21.
 - (B) One (1) south unloading pit to receive grain by truck and rail, identified as EP-1A, with a maximum capacity of 1,680 tons per hour, controlled by baghouse S20 and exhausting to stack S20.
 - (2) Three (3) elevator legs.
 - (3) Three (3) storage bin conveyors.
 - (4) Two (2) grain storage silos, each with a storage capacity of 500,000 bushels.
 - (5) One (1) day storage bin, with a maximum capacity of 10,000 bushels.

- (6) One (1) flat storage area, with a capacity of 4,000,000 bushels.
- (7) One (1) grain storage silo, with a 150,000 bushel capacity.
- (8) One (1) corn scalping operation, with a maximum capacity of 138 tons per hour.
- (b) One (1) milling operation, identified as EP-2, approved for construction in 2007, with a maximum capacity of 15,000 bushels per hour (420 tons per hour), controlled by baghouse S30, identified as the milling baghouse, exhausting through stack S20, and consisting of:
 - (1) Four (4) hammermills.
 - (2) One (1) feed conveyor.

Ethanol Production Plant:

- (a) Ethanol Production Plant, identified as EP-5, approved for construction in 2007, with a maximum production rate of 121,000,000 gallons of ethanol per year, and consisting of the following:
 - (1) One (1) distillation process, identified as EP-5B, approved for construction in 2007, with a maximum throughput of 13,813 gallons per hour, controlled by either one of two regenerative thermal oxidizer (RTO) systems C-10 and C-11, with a maximum heat input capacity of 10 MMBtu/hr, using natural gas for fuel, with emissions exhausting through stack S10. This process consists of the following:
 - (A) One (1) mixer (blend) tank.
 - (B) Two (2) slurry tanks.
 - (C) One (1) cook tube.
 - (D) One (1) flash tank.
 - (E) Two (2) yeast tanks.
 - (F) One (1) beer column.
 - (G) One (1) side stripper.
 - (H) One (1) rectifier column.
 - (I) Two (2) condensers.
 - (J) One (1) molecular sieve.

Under 40 CFR Part 60, Subpart VVa, the pumps, compressors, pressure relief devices in gas/vapor service, sampling connection systems, open-ended valves or lines, and valves of this process are considered to be affected facilities.

- (2) One (1) fermentation process, identified as EP-5A, with a maximum capacity of 13,813 gallons per hour, controlled by wet scrubber S40, which exhausts to stack S40 and includes the following:
 - (A) Seven (7) fermentation tanks.
 - (B) One (1) beer well.

Under 40 CFR Part 60, Subpart VVa, the pumps, compressors, pressure relief devices in gas/vapor service, sampling connection systems, open-ended valves or lines, and valves of this process are considered to be affected facilities.

- (3) One (1) Dried Distillers Grain and Solubles (DDGS) drying process with a maximum throughput of 44.8 tons per hour, controlled by two (2) regenerative thermal oxidizers (RTOs), identified as C-10 and C-11, with a maximum heat input capacity of 10 MMBtu/hr, using natural gas for fuel. This process consists of the following:

- (A) Four (4) DDGS dryers, identified as dryers EP-9A to EP-9D, each with a heat input capacity of 40 MMBtu/hr or a total heat input capacity of 160 MMBtu/hr, with a total drying rate of 392,568 tons of DDGS per year, using natural gas and methanator offgas for combustion. Dryers EP-9A and EP-9B are controlled by RTO C-10. Dryers EP-9C and EP-9D are controlled by RTO C-11. Under 40 CFR Part 60, Subpart VVa, this process is considered to be an affected facility.
 - (B) Six (6) DDGS centrifuges, with a maximum throughput of 392,568 tons of DDGS per year or 44.8 tons per hour. Under 40 CFR Part 60, Subpart VVa, this process is considered to be an affected facility.
 - (C) One (1) DDGS evaporator, with a maximum throughput of 392,568 tons of DDGS per year or 44.8 tons per hour. Under 40 CFR Part 60, Subpart VVa, this process is considered to be an affected facility.
 - (D) DDGS storage facilities:
 - (i) Two (2) storage bins, each with a maximum capacity of 4,000 tons.
 - (ii) One (1) flat storage pad with a maximum capacity of 20,000 bushels per hour.
 - (iii) One (1) wet storage pad.
 - (E) One (1) DDGS cooling drum, identified as S70, with a maximum throughput of 392,568 tons of DDGS per year, controlled by a baghouse, identified as S70 and exhausting to stack S70. Under 40 CFR Part 60, Subpart VVa, this process is considered to be an affected facility.
 - (F) One DDGS loadout operation, known as EP-10, with a maximum capacity of 44.8 tons per hour, controlled by baghouse S90.
- (4) Ethanol loading racks, identified as EP-8, with a maximum loading capacity of 121 million gallons per year, controlled by a smokeless enclosed flare EP-14, with a heat input capacity of 12.4 MMBtu/hr and consisting of the following:
- (A) One (1) ethanol truck loading rack, utilizing submerged loading, with a maximum loading capacity of 121 million gallons per year.
 - (B) One (1) ethanol railcar loading rack, utilizing submerged loading, with a maximum loading capacity of 121 million gallons per year.
- Under 40 CFR Part 60, Subpart VVa, the pumps, compressors, pressure relief devices in gas/vapor service, sampling connection systems, open-ended valves or lines, and valves of this process are considered to be affected facilities.
- (5) Two (2) natural gas / landfill gas fired boilers, identified as EP-4a and EP-4b, approved for construction in 2007, each with a rated heat input capacity of 145 MMBtu/hr, with emissions venting through stacks S110 and S120, respectively. Under 40 CFR Part 60, Subpart Db, these units are considered affected facilities.

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) Combustion related activities, including the following:

- (1) Space heaters, process heaters, heat treat furnaces, or boilers using:
 - (A) Natural gas with a heat input equal to or less than ten million (10,000,000) Btu per hour.
 - (B) Fuel oil-fired combustion sources with heat input equal to or less than two million (2,000,000) Btu per hour and firing fuel containing equal to or less than five-tenths percent (0.5%) sulfur by weight.
- (b) VOC and HAP storage containers, including the following:
 - (1) Storage tanks with capacity less than or equal to one thousand (1,000) gallons and annual throughputs equal to or less than twelve thousand (12,000) gallons.
 - (2) Vessels storing hydraulic oils, lubricating oils, machining oils and machining fluids.
- (c) Equipment used exclusively for filling drums, pails, or other packing containers with greases and lubricating oils.
- (d) Production related activities, including the following:
 - (1) The application of greases, lubricants, nonvolatile materials and oils as protective coatings.
 - (2) Machining where an aqueous cutting coolant continuously floods the machining interface.
 - (3) Degreasing operations that do not exceed one hundred forty-five (145) gallons per twelve (12) months and are exempt from 326 IAC 20-6.
 - (4) Cleaners and solvents characterized as follows where the use of which, for all cleaners and solvents combined, does not exceed one hundred forty-five (145) gallons per twelve (12) months:
 - (A) having a vapor pressure equal to or less than two (2.0) kilo Pascals (fifteen (15) millimeters of mercury or three-tenths (0.3) pound per square inch) measured at thirty-eight (38) degrees Centigrade (one hundred (100) degrees Fahrenheit); or
 - (B) having a vapor pressure equal to or less than seven-tenths (0.7) kilo Pascal (five (5) millimeters of mercury or one-tenth (0.1) pound per square inch) measured at twenty (20) degrees Centigrade (sixty-eight (68) degrees Fahrenheit);the use of which, for all cleaners and solvents combined, does not exceed one hundred forty-five (145) gallons per twelve (12) months.
 - (5) Closed loop heating and cooling systems.
- (e) Solvent recycling systems with batch capacity less than or equal to one hundred (100) gallons.

- (f) Water-based activities including the following:
 - (1) Operations using an aqueous solution containing less than one percent (1%) by weight of VOCs excluding HAPs.
 - (2) Water-based adhesives that are less than or equal to five percent (5%) by volume of VOCs excluding HAPs.
 - (3) One (1) noncontact draft cooling tower system not regulated under a NESHAP, identified as EP-11, approved for construction in 2007, with a maximum throughput of 3,000,000 gallons of water per hour, with emissions exhausting through stack F80.
- (g) Repair activities including the following:
 - (1) Replacement or repair of bags in baghouses and filters in other air filtration equipment.
 - (2) Heat exchanger cleaning and repair.
 - (3) Process vessel degassing and cleaning to prepare for internal repairs.
- (h) Paved roads and parking lots with public access.
- (i) Routine maintenance and repair of buildings, structures, or vehicles at the source where air emissions from those activities would not be associated with any production process, in the purging of gas lines and process vessels.
- (j) Blowdown for boilers and cooling towers.
- (k) One (1) emergency diesel powered fire pump, identified as EP-16, approved for construction in 2007, with a maximum power rating of 300 HP, with uncontrolled emissions, and exhausting to stack S100.
- (l) Purge double block and bleed valves.
- (m) Filter or coalescer media changeout.
- (n) Emissions from a laboratory.
- (o) Other emission units, not regulated by a NESHAP, with PM₁₀, NO_x, and SO₂ emissions less than five (5) pounds per hour or twenty-five (25) pounds per day, CO emissions less than twenty-five (25) pounds per day, VOC emissions less than three (3) pounds per hour or fifteen (15) pounds per day, lead emissions less than six-tenths (0.6) tons per year or three and twenty-nine hundredths (3.29) pounds per day, and emitting greater than one (1) pound per day but less than five (5) pounds per day or one (1) ton per year of a single HAP, or emitting greater than one (1) pound per day but less than twelve and five tenths (12.5) pounds per day or two and five tenths (2.5) ton per year of any combination of HAPs:
 - (1) Two (2) denatured ethanol storage tanks, identified as T61 and T62, approved for construction in 2007, each with a maximum capacity of 1,500,000 gallons and an annual throughput of 60.5 million gallons per year, equipped with an internal floating roof and constructed in accordance with 40 CFR Part 60, Subpart Kb.
 - (2) One (1) 200 proof ethanol storage tank, identified as T63, approved for construction in 2007, with a maximum capacity of 200,000 gallons and an annual

throughput of 121 million gallons per year, equipped with an internal floating roof and constructed in accordance with 40 CFR Part 60, Subpart Kb.

- (3) One (1) denaturant (gasoline) storage tank, identified as T64, approved for construction in 2007, with a maximum capacity of 200,000 gallons and an annual throughput of 6.05 million gallons per year, equipped with an internal floating roof and constructed in accordance with 40 CFR Part 60, Subpart Kb.
- (4) One (1) 190 proof ethanol storage tank, identified as T65, approved for construction in 2007, with a maximum capacity of 200,000 gallons and an annual throughput of 121 million gallons per year, equipped with an internal floating roof and constructed in accordance with 40 CFR Part 60, Subpart Kb.
- (5) One (1) thin stillage tank.
- (6) One (1) syrup tank.
- (7) One (1) cook water tank.
- (8) Four (4) liquification tanks.
- (9) Four (4) methanators, identified as EP-20, exhausting to the DDGS dryers as supplemental fuel, controlled by a smokeless enclosed flare EP-15, which has a maximum heat input capacity of 6.4 MMBtu/hr and exhausting to stack S60.

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

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

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 Revocation of Permits [326 IAC 2-1.1-9(5)]

Pursuant to 326 IAC 2-1.1-9(5)(Revocation of Permits), the Commissioner may revoke this permit 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.

B.3 Affidavit of Construction [326 IAC 2-5.1-3(h)] [326 IAC 2-5.1-4][326 IAC 2-8]

This document shall also become the approval to operate pursuant to 326 IAC 2-5.1-4 and [326 IAC 2-8] when prior to the start of operation, the following requirements are met:

- (a) The attached Affidavit of Construction shall be submitted to the Office of Air Quality (OAQ), verifying that the emission units were constructed as proposed in the application or the permit. The emission units covered in this permit may begin operating on the date the Affidavit of Construction is postmarked or hand delivered to IDEM if constructed as proposed.
- (b) If actual construction of the emission units differs from the construction proposed in the application, the source may not begin operation until the permit has been revised pursuant to 326 IAC 2 and an Operation Permit Validation Letter is issued.
- (c) The Permittee shall attach the Operation Permit Validation Letter received from the Office of Air Quality (OAQ) to this permit.

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

-
- (a) This permit, F099-24648-00103, 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.5 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.6 Enforceability [326 IAC 2-8-6]

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

B.7 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.8 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.9 Duty to Provide Information [326 IAC 2-8-4(5)(E)]

- (a) The Permittee shall furnish to IDEM, OAQ, within a reasonable time, any information that IDEM, OAQ may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The submittal by the Permittee does require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1). Upon request, the Permittee shall also furnish to IDEM, OAQ copies of records required to be kept by this permit.
- (b) For information furnished by the Permittee to IDEM, OAQ, the Permittee may include a claim of confidentiality in accordance with 326 IAC 17.1. When furnishing copies of requested records directly to U. S. EPA, the Permittee may assert a claim of confidentiality in accordance with 40 CFR 2, Subpart B.

B.10 Certification [326 IAC 2-8-3(d)][326 IAC 2-8-4(3)(C)(i)][326 IAC 2-8-5(1)]

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

B.11 Annual Compliance Certification [326 IAC 2-8-5(a)(1)]

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

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue, MC61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

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

- (c) The annual compliance certification report shall include the following:
- (1) The appropriate identification of each term or condition of this permit that is the basis of the certification;
 - (2) The compliance status;
 - (3) Whether compliance was continuous or intermittent;
 - (4) The methods used for determining the compliance status of the source, currently and over the reporting period consistent with 326 IAC 2-8-4(3); and
 - (5) Such other facts, as specified in Sections D of this permit, as IDEM, OAQ may require to determine the compliance status of the source.

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

B.12 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.13 Preventive Maintenance Plan [326 IAC 1-6-3][326 IAC 2-8-4(9)][326 IAC 2-8-5(a)(1)]

- (a) If required by specific condition(s) in Section D of this permit, the Permittee shall maintain and implement Preventive Maintenance Plans (PMPs) including the following information on each facility:
- (1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;
 - (2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and
 - (3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.
- (b) A copy of the PMPs shall be submitted to IDEM, OAQ upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ may require the Permittee to revise its PMPs whenever lack of proper maintenance causes or is the primary contributor to an exceedance of any limitation on emissions or potential to emit. The PMPs do not require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (c) To the extent the Permittee is required by 40 CFR Part 60/63 to have an Operation Maintenance, and Monitoring (OMM) Plan for a unit, such Plan is deemed to satisfy the PMP requirements of 326 IAC 1-6-3 for that unit.

B.14 Emergency Provisions [326 IAC 2-8-12]

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

signed, contemporaneous operating logs or other relevant evidence that describe the following:

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

Telephone Number: 1-800-451-6027 (ask for Office of Air Quality, Compliance Section), or

Telephone Number: 317-233-0178 (ask for Compliance Section)

Facsimile Number: 317-233-6865

Northern Regional Office phone: (574) 245-4870; fax: (574) 245-4877.

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

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue, MC61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

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

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

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

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

- (6) The Permittee immediately took all reasonable steps to correct the emergency.
- (c) In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.
 - (d) This emergency provision supersedes 326 IAC 1-6 (Malfunctions). This permit condition is in addition to any emergency or upset provision contained in any applicable requirement.

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

Any operations shall continue no longer than the minimum time required to prevent the situations identified in (g)(2)(B) of this condition.
- (h) The Permittee shall include all emergencies in the Quarterly Deviation and Compliance Monitoring Report.

B.15 Prior Permits Superseded [326 IAC 2-1.1-9.5]

- (a) All terms and conditions of permits established prior to F099-24648-00103 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.16 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.17 Deviations from Permit Requirements and Conditions [326 IAC 2-8-4(3)(C)(ii)]

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

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, MC61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

using the attached Quarterly Deviation and Compliance Monitoring Report, or its equivalent. A deviation required to be reported pursuant to an applicable requirement that exists independent of this permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report.

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

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

B.18 Permit Modification, Reopening, Revocation and Reissuance, or Termination
[326 IAC 2-8-4(5)(C)][326 IAC 2-8-7(a)][326 IAC 2-8-8]

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

B.19 Permit Renewal [326 IAC 2-8-3(h)]

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

Request for renewal shall be submitted to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue, MC61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

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

B.20 Permit Amendment or Revision [326 IAC 2-8-10][326 IAC 2-8-11.1]

- (a) Permit amendments and revisions are governed by the requirements of 326 IAC 2-8-10 or 326 IAC 2-8-11.1 whenever the Permittee seeks to amend or modify this permit.
- (b) Any application requesting an amendment or modification of this permit shall be submitted to:
- Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue, MC61-53 IGCN 1003
Indianapolis, Indiana 46204-2251
- Any such application shall be certified by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-8-10(b)(3)]

B.21 Operational Flexibility [326 IAC 2-8-15][326 IAC 2-8-11.1]

- (a) The Permittee may make any change or changes at the source that are described in 326 IAC 2-8-15(b) through (d) without a prior permit revision, if each of the following conditions is met:
- (1) The changes are not modifications under any provision of Title I of the Clean Air Act;
 - (2) Any approval required by 326 IAC 2-8-11.1 has been obtained;
 - (3) The changes do not result in emissions which exceed the limitations provided in this permit (whether expressed herein as a rate of emissions or in terms of total emissions);
 - (4) The Permittee notifies the:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue, MC61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

and

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

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

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

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

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

B.22 Source Modification Requirement [326 IAC 2-8-11.1]

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

B.23 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.24 Transfer of Ownership or Operational Control [326 IAC 2-8-10]

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

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue, MC61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

The application which shall be submitted by the Permittee does require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-8-10(b)(3)]

B.25 Annual Fee Payment [326 IAC 2-7-19] [326 IAC 2-8-4(6)] [326 IAC 2-8-16][326 IAC 2-1.1-7]

- (a) The Permittee shall pay annual fees to IDEM, OAQ within thirty (30) calendar days of receipt of a billing. Pursuant to 326 IAC 2-7-19(b), if the Permittee does not receive a bill from IDEM, OAQ the applicable fee is due April 1 of each year.
- (b) Failure to pay may result in administrative enforcement action or revocation of this permit.
- (c) The Permittee may call the following telephone numbers: 1-800-451-6027 or 317-233-4230 (ask for OAQ, Billing, Licensing, and Training Section), to determine the appropriate permit fee.

B.26 Advanced Source Modification Approval [326 IAC 2-8-4(11)] [326 IAC 2-1.1-9]

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

B.27 Credible Evidence [326 IAC 2-8-4(3)][326 IAC 2-8-5][62 FR 8314] [326 IAC 1-1-6]

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

SECTION C SOURCE OPERATION CONDITIONS

Entire Source

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

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

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

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

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

(a) Pursuant to 326 IAC 2-8:

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

(b) The 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. This limitation shall make the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable.

(c) The potential to emit particulate matter (PM) from the boilers shall be limited to less than one hundred (100) tons per twelve (12) consecutive month period. This limitation shall make the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable.

(d) 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.

(e) 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 5-1-3 (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 or incinerate any waste or refuse except as provided in 326 IAC 4-2 and 326 IAC 9-1-2.

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

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

- (d) The notice to be submitted shall include the information enumerated in 326 IAC 14-10-3(3).

All required notifications shall be submitted to:

Indiana Department of Environmental Management
Asbestos Section, Office of Air Quality
100 North Senate Avenue, MC61-52 IGCN 1003
Indianapolis, Indiana 46204-2251

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

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

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

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

- (a) Compliance testing on new emissions units shall be conducted within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up, if specified in Section D of this approval. All testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), except as provided elsewhere in this permit, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.

A test protocol, except as provided elsewhere in this permit, shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, MC61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

no later than thirty-five (35) days prior to the intended test date. The protocol submitted by the Permittee does not require certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

- (b) The Permittee shall notify IDEM, OAQ of the actual test date at least fourteen (14) days prior to the actual test date. The notification submitted by the Permittee does not require certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (c) Pursuant to 326 IAC 3-6-4(b), all test reports must be received by IDEM, OAQ not later than forty-five (45) days after the completion of the testing. An extension may be granted by IDEM, OAQ if the Permittee submits to IDEM, OAQ, a reasonable written explanation not later than five (5) days prior to the end of the initial forty-five (45) day period.

Compliance Requirements [326 IAC 2-1.1-11]

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

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

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

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

Unless otherwise specified in this permit, all monitoring and record keeping requirements not already legally required shall be implemented within ninety (90) days of permit issuance. If required by Section D, the Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment. If due to circumstances beyond its control, that equipment cannot be installed and operated within ninety (90) days, the Permittee may extend the compliance schedule related to the equipment for an additional ninety (90) days provided the Permittee notifies:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue, MC61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

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

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

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

C.12 Monitoring Methods [326 IAC 3] [40 CFR 60] [40 CFR 63]

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

C.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.

- (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 Risk Management Plan [326 IAC 2-8-4] [40 CFR 68]

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

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

- (a) Upon detecting an excursion or exceedance, the Permittee shall restore operation of the emissions unit (including any control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions.
- (b) The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions). Corrective actions may include, but are not limited to, the following:
- (1) initial inspection and evaluation;
 - (2) recording that operations returned to normal without operator action (such as through response by a computerized distribution control system); or
 - (3) any necessary follow-up actions to return operation to within the indicator range, designated condition, or below the applicable emission limitation or standard, as applicable.
- (c) A determination of whether the Permittee has used acceptable procedures in response to an excursion or exceedance will be based on information available, which may include, but is not limited to, the following:
- (1) monitoring results;
 - (2) review of operation and maintenance procedures and records; and/or
 - (3) inspection of the control device, associated capture system, and the process.
- (d) Failure to take reasonable response steps shall be considered a deviation from the permit.
- (e) The Permittee shall maintain the following records:
- (1) monitoring data;
 - (2) monitor performance data, if applicable; and
 - (3) corrective actions taken.

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

- (a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall take appropriate response actions. The Permittee shall submit a

description of these response actions to IDEM, OAQ, within thirty (30) days of receipt of the test results. The Permittee shall take appropriate action to minimize excess emissions from the affected facility while the response actions are being implemented.

- (b) A retest to demonstrate compliance shall be performed within one hundred twenty (120) days of receipt of the original test results. Should the Permittee demonstrate to IDEM, OAQ that retesting in one-hundred and twenty (120) days is not practicable, IDEM, OAQ may extend the retesting deadline.
- (c) IDEM, OAQ reserves the authority to take any actions allowed under law in response to noncompliant stack tests.

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

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

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

- (a) Records of all required monitoring data, reports and support information required by this permit shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be physically present or electronically accessible at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.
- (b) Unless otherwise specified in this permit, all record keeping requirements not already legally required shall be implemented within ninety (90) days of permit issuance.

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

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

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, MC61-53 IGCN 1003
Indianapolis, Indiana 46204-2251
- (c) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.
- (d) Unless otherwise specified in this permit, all reports required in Section D of this permit shall be submitted within thirty (30) days of the end of the reporting period. All reports do require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

- (e) The first report shall cover the period commencing on the date of issuance of this permit and ending on the last day of the reporting period. Reporting periods are based on calendar years, unless otherwise specified in this permit. For the purpose of this permit “calendar year” means the twelve (12) month period from January 1 to December 31 inclusive.

Stratospheric Ozone Protection

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

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

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

SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS
Grain Receiving and DDGS Processing Facilities

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

Grain Receiving & Processing Facilities:

- (a) One (1) grain receiving and handling operation, identified as EP-1, approved for construction in 2007, with an annual maximum throughput of 43,214,287 bushels per year, a maximum capacity of 40,000 bushels per hour (1,120 tons per hour) by rail and 20,000 bushels per hour (560 tons per hour) by truck, controlled by baghouses S20 (unloading and transfer baghouse) and S21 (unloading baghouse), exhausting through stack S20 and S21, and consisting of the following:
 - (1) One (1) corn unloading operation consisting of:
 - (A) One (1) north unloading pit to receive grain by truck, identified as EP-1B, with a maximum capacity of 560 tons per hour, controlled by baghouse S21 and exhausting to stack S21.
 - (B) One (1) south unloading pit to receive grain by truck and rail, identified as EP-1A, with a maximum capacity of 1,680 tons per hour, controlled by baghouse S20 and exhausting to stack S20.
 - (2) Three (3) elevator legs.
 - (3) Three (3) storage bin conveyors.
 - (4) Two (2) grain storage silos, each with a storage capacity of 500,000 bushels.
 - (5) One (1) day storage bin, with a maximum capacity of 10,000 bushels.
 - (6) One (1) flat storage area, with a capacity of 4,000,000 bushels.
 - (7) One (1) grain storage silo, with a 150,000 bushel capacity.
 - (8) One (1) corn scalping operation, with a maximum capacity of 138 tons per hour.
- (b) One (1) milling operation, identified as EP-2, approved for construction in 2007, with a maximum capacity of 15,000 bushels per hour (420 tons per hour), controlled by baghouse S30, identified as the milling baghouse, exhausting through stack S20, and consisting of:
 - (1) Four (4) hammermills.
 - (2) One (1) feed conveyor.

Insignificant Activities

- (c) Paved roads and parking lots with public access. [326 IAC 6-4]

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

THIS SECTION OF THE PERMIT IS BEING ISSUED UNDER THE PROVISIONS OF 326 IAC 2-1 AND 326 IAC 2-8-11.1, WITH CONDITIONS LISTED BELOW.

Construction Conditions

General Construction Conditions

D.1.1 Permit No Defense

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

Effective Date of the Permit

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

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

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

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

Operation Conditions

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

D.1.4 PM and PM10 Emissions [326 IAC 2-2] [326 IAC 2-8-4]

Pursuant to 326 IAC 2-8-4 (FESOP) and in order to render the requirements of 326 IAC 2-2 (PSD) not applicable, the Permittee shall not exceed the PM and PM10 emissions limits from the following units listed in the table below.

Unit ID	Unit Description	Baghouse ID	PM/PM10 Emission Limit (lbs/hr)
EP-1A	Grain Receiving and Handling Operations - South Unloading	S20	1.58
EP-1B	Grain Receiving and Handling Operations - North Unloading	S21	1.64
EP-2	Milling Operations	S30	1.20

Combined with the PM10 emissions from other emission units, the PM10 emissions from the entire source are limited to less than 100 tons/yr. Combined with the PM emissions from other emission units, the PM emissions from the entire source are limited to less than 250 tons/yr. Therefore, the requirements of 326 IAC 2-7 (Part 70 Program) and 326 IAC 2-2 (PSD) are not applicable.

D.1.5 Particulate Emission Limitations [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), particulate emissions from each of following operations shall not exceed the pound per hour limits listed in the table below:

Unit ID	Unit Description	Max. Throughput Rate (tons/hr)	Particulate Emission Limit (lbs/hr)
EP-1A	Grain Receiving and Handling Operation - South Unloading	1,680.0	84.5
EP-1B	Grain Receiving and Handling Operation - North Unloading	560.0	70.3
EP-2A	Hammermill	420.0	66.9
EP-2B	Hammermill	420.0	66.9
EP-2C	Hammermill	420.0	66.9
EP-2D	Hammermill	420.0	66.9

The pounds per hour limitations were calculated using the following equation:

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

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

Pursuant to 326 IAC 6-3-2(e)(3), when the process weight exceeds 200 tons per hour, the maximum allowable emission may exceed the emission limits shown in the table above, provided the concentration of particulate matter in the gas discharged to the atmosphere is less than 0.10 pounds per 1,000 pounds of gases. Where more restrictive emission limits exist in the permit, they shall take precedence over the limits listed in the table above.

D.1.6 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

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

Compliance Determination Requirements

D.1.7 Particulate Control

- (a) In order to comply with Conditions D.1.4 and D.1.5, each of the following emission units shall be controlled by the associated baghouse, as listed in the table below, when these units are in operation:

Unit ID	Unit Description	Baghouse ID
EP-1A	Grain Receiving and Handling Operations - South Unloading	S20
EP-1B	Grain Receiving and Handling Operations - North Unloading	S21
EP-2	Milling Operations	S30

- (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.1.8 Testing Requirements [326 IAC 2-8-5(a)(1), (4)]

In order to demonstrate compliance with Conditions D.1.4 and D.1.5, the Permittee shall perform PM and PM10 testing for baghouses S20, S21 and S30, within 60 days after achieving the maximum capacity, but not later than 180 days after initial startup, utilizing methods as approved by the Commissioner. These tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with Section C - Performance Testing. PM10 includes filterable and condensable PM10.

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

D.1.9 Visible Emissions Notations

- (a) Visible emission notations of the baghouse stack exhausts (stacks S20, S21 and S30) shall be performed once per day during normal daylight operations. A trained employee or a trained contractor 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 or contractor is a person who has worked or trained at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (e) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C - Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

D.1.10 Parametric Monitoring

The Permittee shall record the pressure drop across the baghouses used in conjunction with the grain receiving and handling operations (EP-1A and EP-1B) and the milling operation (EP-2), at least once per day when these units are in operation. When for any one reading, the pressure drop across the baghouse is outside the normal range of 1.0 to 6.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C - Response to Excursions or Exceedances. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

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.1.11 Broken or Failed Bag Detection

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

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

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

D.1.12 Record Keeping Requirements

- (a) To document compliance with Condition D.1.9, the Permittee shall maintain a daily record of visible emission notations of the stack exhaust from stacks S20, S21 and S30. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g. the process did not operate that day).
- (b) To document compliance with Condition D.1.10, the Permittee shall maintain a daily record of the pressure drop across baghouses S20, S21 and S30, used to control the grain receiving and handling operation and the milling operation. 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 process did not operate that day).
- (c) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

SECTION D.2 EMISSIONS UNIT OPERATION CONDITIONS - Fermentation

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

(d) One (1) fermentation process, identified as EP-5A, with a maximum capacity of 13,813 gallons per hour, controlled by wet scrubber S40, which exhausts to stack S40 and includes the following:

- (1) Seven (7) fermentation tanks.
- (2) One (1) beer well.

Under 40 CFR Part 60, Subpart VVa, the pumps, compressors, pressure relief devices in gas/vapor service, sampling connection systems, open-ended valves or lines, and valves of this process are considered to be affected facilities.

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

THIS SECTION OF THE PERMIT IS BEING ISSUED UNDER THE PROVISIONS OF 326 IAC 2-1 AND 326 IAC 2-8-11.1, WITH CONDITIONS LISTED BELOW.

Construction Conditions

General Construction Conditions

D.2.1 Permit No Defense

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

Effective Date of the Permit

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

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

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

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

Operation Conditions

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

D.2.4 VOC and HAP Emissions [326 IAC 2-2] [326 IAC 2-8-4] [326 IAC 2-4.1]

Pursuant to 326 IAC 2-8-4 (FESOP) and in order to render the requirements of 326 IAC 2-2 (PSD) not applicable, the VOC and HAP emissions from wet scrubber S40 controlling the fermentation process shall not exceed the following:

- (a) 11.05 lbs/hr for VOC.
- (b) 1.38 lbs/hr for acetaldehyde.
- (c) 0.023 lbs/hr for acrolein

- (d) 1.68 lbs/hr for total HAPs.

Combined with the VOC emissions from other units, the VOC emissions from the entire source are limited to less than 100 tons/yr. Combined with the HAP emissions from other units, the HAP emissions from the entire source are limited to less than 10 tons/yr for a single HAP and less than 25 tons/yr for total HAPs. Therefore, the requirements of 326 IAC 2-7 (Part 70 Program), 326 IAC 2-2 (PSD), and 326 IAC 2-4.1 (MACT) are not applicable.

D.2.5 VOC Emissions [326 IAC 8-5-6]

Pursuant to 326 IAC 8-5-6, the Permittee shall control the VOC emissions from the fermentation process with the following:

- (a) The VOC emissions from the fermentation process shall be controlled by wet scrubber S40.
- (b) The overall control efficiency for wet scrubber S40 (including the capture efficiency and adsorption efficiency) shall not be less than ninety-eight percent (98%) or shall result in a volatile organic compound concentration of not more than twenty (20) parts per million (ppm).

D.2.6 General Provisions Relating to NSPS [326 IAC 12-1][40 CFR Part 60, Subpart A]

The provisions of 40 CFR 60, Subpart A - General Provisions, which are incorporated by reference in 326 IAC 12-1, apply to the facility described in Condition D.2.8 except when otherwise specified in 40 CFR 60, Subpart VVa.

D.2.7 Equipment Leaks of VOC [326 IAC 12][40 CFR 60, Subpart VVa]

Pursuant to 40 CFR 60, Subpart VVa, the Permittee shall comply with the requirement of Section E.1 for pumps; pressure relief devices in gas/vapor service; sampling connection systems; open-ended valves or lines; and valves.

D.2.8 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

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

Compliance Determination Requirements

D.2.9 VOC and HAP Control

In order to comply with Conditions D.2.4 and D.2.5, wet scrubber S40 shall be in operation and control emissions from the fermentation process at all times that this process is in operation.

D.2.10 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11] [326 IAC 8-5-6(d)]

In order to demonstrate compliance with Conditions D.2.4 and D.2.5, the Permittee shall perform VOC (including emission rate, adsorption efficiency, and capture efficiency) and Acetaldehyde testing for wet scrubber S40, within 60 days after achieving the maximum production, but not later than 180 days after initial startup, utilizing methods as approved by the Commissioner. These tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with Section C - Performance Testing.

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

D.2.11 Scrubber Pressure Drop and Flow Rate [326 IAC 8-5-6]

The Permittee shall monitor and record the pressure drop and the flow rate of wet scrubber S40 at least once per day when the fermentation process is in operation. When for any one reading, the pressure drop across the scrubber is outside the normal range of 1.0 and 6.0 inches of water, or a range established during the latest stack test, the Permittee shall take reasonable response

steps in accordance with Section C - Response to Excursions or Exceedances. When for any one reading, the flow rate of the scrubber is less than the normal minimum of 95 gallons per minute, or a minimum established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C - Response to Excursions or Exceedances. A pressure reading that is outside the above mentioned range or a flow rate that is below the above mentioned minimum is not a deviation from this permit. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

The instruments used for determining the pressure drop and flow rate 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.2.12 Scrubber Detection

In the event that a scrubber malfunction has been observed:

Failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions). Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

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

D.2.13 Record Keeping Requirements

- (a) To document compliance with Condition D.2.12, the Permittee shall maintain a daily record of the pressure drop and flow rate of wet scrubber S40. The Permittee shall include in its daily record when pressure drop and flow rate notations are not taken and the reason for the lack of pressure drop and flow rate notations (e.g. the process did not operate that day).
- (b) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

SECTION D.3 EMISSIONS UNIT OPERATION CONDITIONS
Distillation, DDGS Dryers and RTO System

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

(e) One (1) distillation process, identified as EP-5B, approved for construction in 2007, with a maximum throughput of 13,813 gallons per hour, controlled by either one of two regenerative thermal oxidizer (RTO) systems C-10 and C-11, with a maximum heat input capacity of 10 MMBtu/hr, using natural gas for fuel, with emissions exhausting through stack S10. This process consists of the following:

- (1) One (1) mixer (blend) tank.
- (2) Two (2) slurry tanks.
- (3) One (1) cook tube.
- (4) One (1) flash tank.
- (5) Two (2) yeast tanks.
- (6) One (1) beer column.
- (7) One (1) side stripper.
- (8) One (1) rectifier column.
- (9) Two (2) condensers.
- (10) One (1) molecular sieve.

Under 40 CFR Part 60, Subpart VVa, the pumps, compressors, pressure relief devices in gas/vapor service, sampling connection systems, open-ended valves or lines, and valves of this process are considered to be affected facilities.

(f) One (1) Dried Distillers Grain and Solubles (DDGS) drying process with a maximum throughput of 44.8 tons per hour, controlled by two (2) regenerative thermal oxidizers (RTOs), identified as C-10 and C-11, with a maximum heat input capacity of 10 MMBtu/hr, using natural gas for fuel. This process consists of the following:

- (1) Four (4) DDGS dryers, identified as dryers EP-9A to EP-9D, each with a heat input capacity of 40 MMBtu/hr or a total heat input capacity of 160 MMBtu/hr, with a total drying rate of 392,568 tons of DDGS per year, using natural gas and methanator offgas for combustion. Dryers EP-9A and EP-9B are controlled by RTO C-10. Dryers EP-9C and EP-9D are controlled by RTO C-11. Under 40 CFR Part 60, Subpart VVa, this process is considered to be an affected facility.
- (2) Six (6) DDGS centrifuges, with a maximum throughput of 392,568 tons of DDGS per year or 44.8 tons per hour. Under 40 CFR Part 60, Subpart VVa, this process is considered to be an affected facility.
- (3) One (1) DDGS evaporator, with a maximum throughput of 392,568 tons of DDGS per year or 44.8 tons per hour. Under 40 CFR Part 60, Subpart VVa, this process is considered to be an affected facility.

- (4) DDGS storage facilities:
 - (A) Two (2) storage bins, each with a maximum capacity of 4,000 tons.
 - (B) One (1) flat storage pad, with a maximum capacity of 20,000 bushels per hour.
 - (C) One (1) wet storage pad.
- (5) One (1) DDGS cooling drum, identified as S70, with a maximum throughput of 392,568 tons of DDGS per year, controlled by a baghouse, identified as S70 and exhausting to stack S70. Under 40 CFR Part 60, Subpart VVa, this process is considered to be an affected facility.
- (6) One (1) DDGS loadout operation, known as EP-10, with a maximum capacity of 44.8 tons per hour, controlled by baghouse S90.

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

THIS SECTION OF THE PERMIT IS BEING ISSUED UNDER THE PROVISIONS OF 326 IAC 2-1 AND 326 IAC 2-8-11.1, WITH CONDITIONS LISTED BELOW.

Construction Conditions

General Construction Conditions

D.3.1 Permit No Defense

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

Effective Date of the Permit

D.3.2 Effective Date of the Permit [IC13-15-5-3]

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

D.3.3 Modification to Construction Conditions [326 IAC 2]

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

Operation Conditions

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

D.3.4 FESOP Limits [326 IAC 2-2] [326 IAC 2-8-4] [326 IAC 2-4.1]

Pursuant to 326 IAC 2-8-4 (FESOP) and in order to render the requirements of 326 IAC 2-2 (PSD) not applicable, the Permittee shall comply with the following emission limits for the regenerative thermal oxidizer (RTO) systems (C-10 and C-11), which are used to control the emissions from the distillation process and the DDGS dryers. RTO C-10 controls emissions from dryer EP-9A and EP-9B. RTO C-11 controls emissions from EP-9C and EP-9D. One of the two RTOs is required to control emissions from the distillation process. The emission limits are as follows:

- 1) The total emissions from the RTO systems stack, S10, shall comply with the following:
 - (a) PM/PM10 emissions shall not exceed 3.58 lbs/hr.
 - (b) VOC emissions shall not exceed 3.14 lbs/hr.
 - (c) CO emissions shall not exceed 8.96 lbs/hr.
 - (d) SO₂ emissions shall not exceed 20.27 lbs/hr.
 - (e) NO_x emissions shall not exceed 9.00 lbs/hr.
 - (f) Acetaldehyde emissions shall not exceed 0.38 lbs/hr.
 - (g) Acrolein emissions shall not exceed 0.09 lbs/hr.
 - (h) Total HAP emissions shall not exceed 1.41 lbs/hr.
- 2) The Permittee shall comply with the following emission limits for the baghouse controlling the emissions from the DDGS cooling drum (S70) from stack (S70):
 - (a) The Acetaldehyde emissions shall not exceed 0.13 lbs/hr.
 - (b) The PM/PM10 emissions shall not exceed 2.14 lbs/hr.
- 3) The Permittee shall comply with the following emission limits for the baghouse (S90) controlling the DDGS Handling and Loadout Operations:
 - (a) The PM/PM10 emissions shall not exceed 0.47 lbs/hr.

Combined with the PM/PM10, VOC, SO₂, CO, and NO_x emissions from other units, the PM/PM10, SO₂, VOC, CO, NO_x emissions from the entire source are each limited to less than 100 tons/yr. Combined with the HAP emissions from other units, the HAP emissions from the entire source are limited to less than 10 tons/yr for a single HAP and less than 25 tons/yr for total HAPs. Therefore, the requirements of 326 IAC 2-7 (Part 70 Program), 326 IAC 2-2 (PSD), and 326 IAC 2-4.1 (MACT) are not applicable.

D.3.5 VOC Emissions [326 IAC 8-5-6]

Pursuant to 326 IAC 8-5-6, the Permittee shall control the VOC emissions from the distillation process and the DDGS dryers with the following:

- (a) The VOC emissions from the distillation process and the DDGS dryers shall be controlled by the regenerative thermal oxidizer (RTO) system C-10 or C-11.
- (b) The overall control efficiency for each of the RTO systems C-10 and C-11 (including the capture efficiency and destruction efficiency) shall be at least 98%, or the VOC outlet concentration shall not exceed ten (10) ppm.
- (c) The total VOC emissions from the RTO systems stack S10 shall not exceed 3.14 lbs/hr.

D.3.6 Particulate Emission Limitations [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), particulate emissions from each of following operations shall not exceed the pound per hour limit listed in the table below:

Unit ID	Unit Description	Max. Throughput Rate (tons/hr)	Particulate Emission Limit (lbs/hr)
EP-9A	DDGS Dryer	11.2	20.7
EP-9B	DDGS Dryer	11.2	20.7
EP-9C	DDGS Dryer	11.2	20.7
EP-9D	DDGS Dryer	11.2	20.7
EP-10	DDGS Handling and Loadout Operations	44.8	43.6
S70	DDGS Cooling Drum	44.8	43.6

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

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

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour; and} \\ P = \text{process weight rate in tons per hour}$$

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

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

D.3.7 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

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

Compliance Determination Requirements

D.3.8 PM/PM10 Control

(a) In order to comply with Conditions D.3.4 and D.3.6:

- (1) The baghouses controlling the DDGS cooling drum, S70, and the DDGS handling and loadout operation, S90, shall be in operation and control emissions from the DDGS cooling drum and the DDGS handling and loadout operation at all times that these units are in operation.
- (2) 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 action taken up to the time of notification.

D.3.9 VOC and HAP Control

In order to comply with Conditions D.3.4 and D.3.5, one of the two RTO systems (C-10 and C-11) shall be in operation and control emissions from the distillation process at all times these units are in operation. RTO C-10 shall be in operation and control emissions from dryers EP-9A and EP-9b at all times these units are in operation. RTO C-11 shall be in operation and control emissions from dryers EP-9C and EP-9D at all times these units are in operation.

D.3.10 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 8-5-6(d)]

In order to demonstrate compliance with Conditions D.3.4, D.3.5, and D.3.6, the Permittee shall perform PM, PM10, VOC (including emission rate, destruction efficiency, and capture efficiency), NOx, CO, Acetaldehyde and Acrolein testing for the RTO systems stack (S10). In addition, the Permittee shall perform VOC and Acetaldehyde testing for the DDGS cooling drum stack (S70) and PM/PM10 testing for the DDGS handling and loadout operation. The tests shall be conducted within 60 days after achieving maximum capacity, but not later than 180 days after initial startup, utilizing methods as approved by the Commissioner. PM10 includes filterable and condensable PM10. These tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with Section C - Performance Testing.

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

D.3.11 Visible Emissions Notations

- (a) Visible emission notations of the stack exhaust from the RTO systems stack S10, the DDGS cooling drum stack S70 and the DDGS handling and loadout operation stack S90 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) The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

D.3.12 Thermal Oxidizer Temperature

- (a) A continuous monitoring system shall be calibrated, maintained, and operated on the RTO systems (C-10 and C-11) for measuring operating temperature. For the purpose of this condition, continuous means no less than once per fifteen (15) minutes. The output of this system shall be recorded as 3-hour average. From the date of issuance of this permit until the approved stack test results are available, the Permittee shall operate the thermal oxidizer at or above the 3-hour average temperature of 1,400°F.
- (b) The Permittee shall determine the 3-hour average temperature from the most recent valid stack test that demonstrates compliance with limits in Conditions D.3.4 and D.3.5, as approved by IDEM.
- (c) On and after the date the approved stack test results are available, the Permittee shall operate the thermal oxidizers at or above the 3-hour average temperature as observed during the compliant stack test.

D.3.13 Parametric Monitoring

- (a) The Permittee shall determine the appropriate duct pressure or fan amperage from the most recent valid stack test that demonstrates compliance with limits in Conditions D.3.5 and D.3.6, as approved by IDEM.

- (b) The duct pressure or fan amperage shall be observed at least once per day for each RTO when the regenerative thermal oxidizer is in operation. On and after the date the approved stack test results are available, the duct pressure or fan amperage shall be maintained within the normal range as established in most recent compliant stack test.

D.3.14 Baghouse Parametric Monitoring

- (a) The Permittee shall record the pressure drop across the baghouses used in conjunction with the DDGS cooling drum (S70) and the DDGS handling and loadout operation (S90) at least once per day when the unit is in operation. When for any one reading, the pressure drop across the baghouse is outside the normal range of 1.0 to 6.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C - Response to Excursions or Exceedances. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps in accordance with Section C - Response to Excursions and Exceedances shall be considered a deviation from this permit.
- (b) The instrument used for determining the pressure drop 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.3.15 Broken or Failed Bag Detection

- (a) For a single compartment baghouse controlling emissions from a process operated continuously, a failed unit and the associated process shall be shut down immediately until the failed unit has been repaired or replaced. Operation 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 process of the material in the line. 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).

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

D.3.16 Record Keeping Requirements

- (a) To document compliance with Condition D.3.11, the Permittee shall maintain a daily record of visible emission notations of the stack exhaust from stack S10, S70 and S90. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g. the process did not operate that day).
- (b) To document compliance with Condition D.3.12, the Permittee shall maintain continuous temperature records for the thermal oxidizer and the 3-hour average temperature used to demonstrate compliance during the most recent compliant stack test.
- (c) To document compliance with Condition D.3.13, the Permittee shall maintain a daily record of the duct pressure or fan amperage for the RTO systems (C-10 and C-11). The Permittee shall include in its daily record when a duct pressure or fan amperage notation is not taken and the reason for the lack of a duct pressure or fan amperage notation (e.g. the process did not operate that day).

- (d) To document compliance with Condition D.3.14, the Permittee shall maintain daily records of pressure drop for the baghouses during normal operation. 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 process did not operate that day).
- (e) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

**SECTION D.4 EMISSIONS UNIT OPERATION CONDITIONS
Denatured Ethanol Loading Operations**

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

- (i) Ethanol loading racks, identified as EP-8, with a maximum loading capacity of 121 million gallons per year, controlled by a smokeless enclosed flare EP-14, with a heat input capacity of 12.4 MMBtu/hr and consisting of the following:
- (1) One (1) ethanol truck loading rack, utilizing submerged loading, with a maximum loading capacity of 121 million gallons per year.
 - (2) One (1) ethanol railcar loading rack, utilizing submerged loading, with a maximum loading capacity of 121 million gallons per year.

Under 40 CFR Part 60, Subpart VVa, the pumps, compressors, pressure relief devices in gas/vapor service, sampling connection systems, open-ended valves or lines, and valves of this process are considered to be affected facilities.

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

THIS SECTION OF THE PERMIT IS BEING ISSUED UNDER THE PROVISIONS OF 326 IAC 2-1 AND 326 IAC 2-8-11.1, WITH CONDITIONS LISTED BELOW.

Construction Conditions

General Construction Conditions

D.4.1 Permit No Defense

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

Effective Date of the Permit

D.4.2 Effective Date of the Permit [IC13-15-5-3]

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

D.4.3 Modification to Construction Conditions [326 IAC 2]

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

Operation Conditions

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

D.4.4 FESOP Limits [326 IAC 2-2] [326 IAC 2-8-4]

Pursuant to 326 IAC 2-8-4 (FESOP) and in order to render the requirements of 326 IAC 2-2 (PSD) not applicable, the Permittee shall comply with the following emission limits for the denatured ethanol loading racks:

- (a) The total denatured ethanol loadout from loading racks, EP-8, shall not exceed 121,000,000 gallons per twelve (12) consecutive month period with compliance determined at the end of each month.
- (b) The Permittee shall use a smokeless enclosed flare, EP-14, to control the emissions from the denatured ethanol loading racks. The fuel usage for the ethanol loadout flare shall not exceed 34.4 MMCF per twelve (12) consecutive month period with compliance determined at the end of each month.
- (c) CO emissions from smokeless enclosed flare EP-14 shall not exceed 362.63 lb CO/MMCF.
- (d) NOx emissions from smokeless enclosed flare EP-14 shall not exceed 68.68 lb NOx/MMCF.
- (e) The VOC emissions from smokeless enclosed flare EP-14 shall not exceed 5.51 tons per 121,000 kgal or 0.09 lb/kgal.
- (f) The ethanol loading racks shall utilize submerged loading method.
- (g) The railcars and trucks shall not use vapor balance services when loading ethanol.

Combined with the VOC, CO, NOx and HAP emissions from other units, the VOC, CO, and NOx emissions from the entire source are each limited to less than 100 tons/yr and the HAP emissions from the entire source are limited to less than 10 tons/yr for a single HAP and less than 25 tons/yr for total HAPs. Therefore, the requirements of 326 IAC 2-7 (Part 70 Program), 326 IAC 2-2 (PSD) and 326 IAC 2-4.1 (MACT) are not applicable.

D.4.5 VOC Emissions [326 IAC 8-5-6]

Pursuant to 326 IAC 8-5-6, the Permittee shall collect and control the VOC emissions from the denatured ethanol loading racks by the following:

- (a) The VOC emissions from the ethanol loading rack shall be collected and controlled by smokeless enclosed flare EP-14.
- (b) The overall control efficiency for the vapor collection system and smokeless enclosed flare EP-14 (including the capture efficiency and destruction efficiency) shall be at least 98%.
- (c) The VOC emissions from smokeless enclosed flare EP-14 shall not exceed 5.51 tons per 121,000 kgal or 0.9 lb/kgal.

D.4.6 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

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

Compliance Determination Requirements

D.4.7 VOC Control

In order to comply with Conditions D.4.4 and D.4.5, smokeless enclosed flare EP-14 shall be in operation and control emissions from the denatured ethanol loading racks at all times when these units are in operation.

D.4.8 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 8-5-6(d)]

In order to demonstrate compliance with Conditions D.4.4 and D.4.5, the Permittee shall perform VOC (including emission rate, destruction efficiency, and capture efficiency) testing for smokeless

enclosed flare EP-14, within 60 days after achieving the maximum production, but not later than 180 days after initial startup, utilizing methods as approved by the Commissioner. These tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with Section C - Performance Testing.

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

D.4.9 Flare Pilot Flame

In order to comply with Conditions D.4.4 and D.4.5, the Permittee shall monitor the presence of a flare pilot flame for smokeless enclosed flare EP-14 using a thermocouple or any other equivalent device to detect the presence of a flame when ethanol loading rack is in operation.

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

D.4.10 Record Keeping Requirements

- (a) To document compliance with Condition D.4.4(a), the Permittee shall maintain monthly records of the total amount of denatured ethanol loaded out from the loading racks.
- (b) To document compliance with Condition D.4.4(b), the Permittee shall maintain monthly records of the total fuel usage of the smokeless enclosed loadout flare, EP-14.
- (c) To document compliance with Condition D.4.9, the Permittee shall maintain records of temperature or other parameters sufficient to demonstrate the presence of a pilot flame when the loading racks are in operation.
- (d) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.4.11 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.4.4(a) and D.4.4(b) shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).

**SECTION D.5 EMISSIONS UNIT OPERATION CONDITIONS
Natural Gas / Landfill Gas Fired Boilers**

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

- (j) Two (2) natural gas / landfill gas fired boilers, identified as EP-4a and EP-4b, approved for construction in 2007, each with a rated heat input capacity of 145 MMBtu/hr, with emissions venting through stacks S110 and S120, respectively. Under 40 CFR Part 60, Subpart Db, these units are considered affected facilities.

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

THIS SECTION OF THE PERMIT IS BEING ISSUED UNDER THE PROVISIONS OF 326 IAC 2-1 AND 326 IAC 2-8-11.1, WITH CONDITIONS LISTED BELOW.

Construction Conditions

General Construction Conditions

D.5.1 Permit No Defense

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

Effective Date of the Permit

D.5.2 Effective Date of the Permit [IC13-15-5-3]

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

D.5.3 Modification to Construction Conditions [326 IAC 2]

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

Operation Conditions

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

D.5.4 FESOP Limits [326 IAC 2-2] [326 IAC 2-8-4]

Pursuant to 326 IAC 2-8-4 (FESOP) and in order to render the requirements of 326 IAC 2-2 (PSD) not applicable, the Permittee shall comply with the following:

- (a) The total input of landfill gas to natural gas / landfill gas fired boilers EP-4a and EP-4b, shall not exceed 2,989 MMCF per twelve (12) consecutive month period with the compliance determined at the end of each month.
- (b) NO_x emissions from each boiler shall not exceed 22.95 lbs/MMCF for both landfill and natural gas.
- (c) CO emissions from each boiler shall not exceed 20.40 lb/MMCF for both landfill and natural gas.

- (d) The PM/PM10 emissions from each boiler shall not exceed the following:
- (1) 7.60 lb/MMCF while burning natural gas alone.
 - (2) 8.16 lb/MMCF while burning landfill gas alone.
- (e) Total HAP emissions shall not exceed 4.6 lb/MMCF while burning landfill gas and 1.88 lb/MMCF while burning natural gas.

Combined with the PM/PM10, HAP, NO_x, and CO emissions from other emission units, the PM/PM10, NO_x and CO emissions from the entire source are each limited to less than 100 tons/yr and the HAP emissions from the entire source are limited to less than 10 tons/yr and less than 25 tons/yr for total HAPs. Therefore, the requirements of 326 IAC 2-7 (Part 70 Program) and 326 IAC 2-2 (PSD) are not applicable.

D.5.5 Particulate Emissions [326 IAC 6-2-4] [326 IAC 2-8-4]

Pursuant to 326 IAC 6-2-4 (Particulate Emission Limitations for Sources of Indirect Heating: Emission Limitations for facilities specified in 326 IAC 6-2-1(d)), the PM emissions from the boilers shall not exceed 0.25 pounds per million Btu heat input (lb/MMBtu). This limitation was calculated using the following equation:

$$Pt = \frac{1.09}{Q^{0.26}}$$

where Q = total source heat input capacity (MMBtu/hr)

For these units, Q = 290.0 MMBtu/hr.

D.5.6 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

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

Compliance Determination Requirements

D.5.7 Continuous Emissions Monitoring [326 IAC 3-5] [326 IAC 12] [40 CFR 60, Subpart Db] [326 IAC 2-2] [326 IAC 2-8-4]

Pursuant to 326 IAC 3-5 (Continuous Monitoring of Emissions) and 40 CFR 60.48b (Emission Monitoring for Particulate Matter and Nitrogen Oxides) and in order to demonstrate compliance with Condition D.6.5, a continuous monitoring system, which meets the performance specifications of 326 IAC 3-5-2, shall be calibrated, maintained, and operated for each boiler, EP-4a and EP-4b, for measuring NO_x.

D.5.8 NO_x Monitoring System Downtime [326 IAC 2-2] [326 IAC 2-8-4] [326 IAC 12] [40 CFR 60, Subpart Db]

In instances of NO_x continuous emission monitoring system (CEMS) downtime, the Permittee shall obtain NO_x emissions data according to the requirements of 40 CFR 60.48b(f).

D.5.9 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11]

In order to demonstrate compliance with Condition D.5.4, the Permittee shall perform PM, PM10, NO_x, CO and total HAPs testing for one of the two (2) natural gas / landfill gas fired boilers, within sixty (60) days after achieving the maximum capacity, but not later than one hundred eighty (180) days after initial startup, utilizing methods as approved by the Commissioner. HAPs testing shall be conducted while burning landfill gas. These tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with Section C - Performance Testing.

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

D.5.10 Record Keeping Requirements

- (a) In order to demonstrate compliance with Conditions D.5.4(a), the Permittee shall maintain daily records of:
 - (1) the amount of landfill gas combusted in the boilers; and
 - (2) all continuous emissions monitoring data, pursuant to 326 IAC 3-5-6.
- (b) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.5.11 Reporting Requirements

A quarterly summary of the information to document compliance with Conditions D.5.4(a) shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).

**SECTION D.6 EMISSIONS UNIT OPERATION CONDITIONS
Fire Pump and Biomethanator System**

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

Insignificant Activities

- (k) One (1) emergency diesel powered fire pump, identified as EP-16, to be constructed in 2007, with a maximum power output rate of 300 horsepower, and exhausting to stack S100. Under 40 CFR Part 60, Subpart IIII, the emergency diesel powered fire pump is considered an affected facility.
- (l) Other emission units, not regulated by a NESHAP, with PM₁₀, NO_x, and SO₂ emissions less than five (5) pounds per hour or twenty-five (25) pounds per day, CO emissions less than twenty-five (25) pounds per day, VOC emissions less than three (3) pounds per hour or fifteen (15) pounds per day, lead emissions less than six-tenths (0.6) tons per year or three and twenty-nine hundredths (3.29) pounds per day, and emitting greater than one (1) pound per day but less than five (5) pounds per day or one (1) ton per year of a single HAP, or emitting greater than one (1) pound per day but less than twelve and five tenths (12.5) pounds per day or two and five tenths (2.5) ton per year of any combination of HAPs:
 - 1) Four (4) methanators, identified as EP-20, exhausting to the DDGS dryers as supplemental fuel, controlled by a smokeless enclosed flare EP-15, which has a maximum heat input capacity of 6.4 MMBtu/hr and exhausting to stack S60.

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

THIS SECTION OF THE PERMIT IS BEING ISSUED UNDER THE PROVISIONS OF 326 IAC 2-1 AND 326 IAC 2-8-11.1, WITH CONDITIONS LISTED BELOW.

Construction Conditions

General Construction Conditions

D.6.1 Permit No Defense

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

Effective Date of the Permit

D.6.2 Effective Date of the Permit [IC13-15-5-3]

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

D.6.3 Modification to Construction Conditions [326 IAC 2]

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

Operation Conditions

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

D.6.4 FESOP Limits [326 IAC 2-2] [326 IAC 2-8-4]

Pursuant to 326 IAC 2-8-4 (FESOP) and in order to render the requirements of 326 IAC 2-2 (PSD) not applicable, the Permittee shall comply with the following:

- (a) The biomethanator flare (EP-15) shall not operate when any of the DDGS dryers are in operation.
- (b) The fuel usage of the biomethanator flare shall not exceed 34.4 MMCF per twelve (12) consecutive month period with compliance determined at the end of each month.
- (c) The NO_x emissions from the biomethanator flare shall not exceed 68.68 lb NO_x/MMCF.

Combined with the CO and NO_x emissions from other emission units, the CO and NO_x emissions from the entire source are each limited to less than 100 tons/yr. Therefore, the requirements of 326 IAC 2-7 (Part 70 Program) and 326 IAC 2-2 (PSD) are not applicable.

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

D.6.5 Record Keeping Requirements

- (a) To document compliance with Condition D.6.4(b), the Permittee shall maintain monthly records of the operating hours for the enclosed smokeless biomethanator flare, EP-15.
- (b) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.6.6 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.6.4(b) shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).

SECTION D.7 EMISSIONS UNIT OPERATION CONDITIONS
Storage Tanks

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

- (m) Other emission units, not regulated by a NESHAP, with PM₁₀, NO_x, and SO₂ emissions less than five (5) pounds per hour or twenty-five (25) pounds per day, CO emissions less than twenty-five (25) pounds per day, VOC emissions less than three (3) pounds per hour or fifteen (15) pounds per day, lead emissions less than six-tenths (0.6) tons per year or three and twenty-nine hundredths (3.29) pounds per day, and emitting greater than one (1) pound per day but less than five (5) pounds per day or one (1) ton per year of a single HAP, or emitting greater than one (1) pound per day but less than twelve and five tenths (12.5) pounds per day or two and five tenths (2.5) ton per year of any combination of HAPs:
- (1) Two (2) denatured ethanol storage tanks, identified as T61 and T62, to be constructed in 2007, each with a maximum capacity of 1,500,000 gallons and an annual throughput of 60.5 million gallons per year, equipped with an internal floating roof and constructed in accordance with 40 CFR Part 60, Subpart Kb.
 - (2) One (1) 200 proof ethanol storage tank, identified as T63, to be constructed in 2007, with a maximum capacity of 200,000 gallons and an annual throughput of 121 million gallons per year, equipped with an internal floating roof and constructed in accordance with 40 CFR Part 60, Subpart Kb.
 - (3) One (1) denaturant (gasoline) storage tank, identified as T64, to be constructed in 2007, with a maximum capacity of 200,000 gallons and an annual throughput of 6.05 million gallons per year, equipped with an internal floating roof and constructed in accordance with 40 CFR Part 60, Subpart Kb.
 - (4) One (1) 190 proof ethanol storage tank, identified as T65, to be constructed in 2007, with a maximum capacity of 200,000 gallons and an annual throughput of 121 million gallons per year, equipped with an internal floating roof and constructed in accordance with 40 CFR Part 60, Subpart Kb.

Under 40 CFR Part 60, Subpart Kb, storage tanks T61 through T65 are considered to be new volatile organic liquid storage tanks.

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

THIS SECTION OF THE PERMIT IS BEING ISSUED UNDER THE PROVISIONS OF 326 IAC 2-1 AND 326 IAC 2-8-11.1, WITH CONDITIONS LISTED BELOW.

Construction Conditions

General Construction Conditions

D.7.1 Permit No Defense

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

Effective Date of the Permit

D.7.2 Effective Date of the Permit [IC13-15-5-3]

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

D.7.3 Modification to Construction Conditions [326 IAC 2]

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

Operation Conditions

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

D.7.4 Volatile Organic Compounds (VOC) [326 IAC 8-4-3]

- (a) Pursuant to 326 IAC 8-4-3(b)(1)(B), storage tank T64 shall be maintained such that there are no visible holes, tears, or other openings in the seal or any seal fabric or materials.
- (b) Pursuant to 326 IAC 8-4-3(b)(1)(C), all openings, except stub drains, are equipped with covers, lids, or seals such that:
 - (1) The cover, lid or seal in the closed portion at all times except when in actual use;
 - (2) Automatic bleeder vents are closed at all times except when the roof is floated off or landed on the roof leg supports;
 - (3) Rim vents, if provided, are set to open when the roof is being floated off the roof leg supports or at the manufacturer's recommended setting.
- (c) Pursuant to 326 IAC 8-4-3(d) (Petroleum Liquid Storage Facilities), the Permittee shall maintain the following records for a period of two (2) years for tank T64:
 - (1) The types of volatile petroleum liquid stored;
 - (2) The maximum true vapor pressure of the liquids as stored; and
 - (3) The results of the inspections performed on the storage vessels.

The above records shall be made available to the IDEM, OAQ upon written request.

D.7.5 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

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

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

D.7.6 Record Keeping Requirements

- (a) To document compliance with Condition D.7.4, the Permittee shall maintain the following records for tank T61 to T65:
 - (1) The types of volatile petroleum liquid stored;
 - (2) The maximum true vapor pressure of the liquids as stored; and
 - (3) The results of the inspections performed on the storage vessels.
- (b) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

SECTION E.1

**FACILITY OPERATION CONDITIONS
NSPS 40 CFR PART 60, SUBPART VVa**

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

Ethanol Production Plant:

(a) Ethanol Production Plant, identified as EP-5, approved for construction in 2007, with a maximum production rate of 121,000,000 gallons of ethanol per year, and consisting of the following:

(1) One (1) distillation process, identified as EP-5B, approved for construction in 2007, with a maximum throughput of 13,813 gallons per hour, controlled by either one of two regenerative thermal oxidizer (RTO) systems C-10 and C-11, with a maximum heat input capacity of 10 MMBtu/hr, using natural gas for fuel, with emissions exhausting through stack S10. This process consists of the following:

- (A) One (1) mixer (blend) tank.
- (B) Two (2) slurry tanks.
- (C) One (1) cook tube.
- (D) One (1) flash tank.
- (E) Two (2) yeast tanks.
- (F) One (1) beer column.
- (G) One (1) side stripper.
- (H) One (1) rectifier column.
- (I) Two (2) condensers.
- (J) One (1) molecular sieve.

Under 40 CFR Part 60, Subpart VVa, the pumps, compressors, pressure relief devices in gas/vapor service, sampling connection systems, open-ended valves or lines, and valves of this process are considered to be affected facilities.

(2) One (1) fermentation process, identified as EP-5A, with a maximum capacity of 13,813 gallons per hour, controlled by wet scrubber S40, which exhausts to stack S40 and includes the following:

- (A) Seven (7) fermentation tanks.
- (B) One (1) beer well.

Under 40 CFR Part 60, Subpart VVa, the pumps, compressors, pressure relief devices in gas/vapor service, sampling connection systems, open-ended valves or lines, and valves of this process are considered to be affected facilities.

(3) One (1) Dried Distillers Grain and Solubles (DDGS) drying process with a maximum throughput of 44.8 tons per hour, controlled by two (2) regenerative thermal oxidizers (RTOs), identified as C-10 and C-11, with a maximum heat input capacity of 10 MMBtu/hr, using natural gas for fuel. This process consists of the following:

- (A) Four (4) DDGS dryers, identified as dryers EP-9A to EP-9D, each with a heat input capacity of 40 MMBtu/hr or a total heat input capacity of 160 MMBtu/hr, with a total drying rate of 392,568 tons of DDGS per year, using natural gas and methanator offgas for combustion. Dryers EP-9A and EP-9B are controlled by RTO C-10. Dryers EP-9C and EP-9D are controlled by RTO C-11. Under 40 CFR Part 60, Subpart VVa, this process is considered to be an affected facility.

- (B) Six (6) DDGS centrifuges, with a maximum throughput of 392,568 tons of DDGS per year or 44.8 tons per hour. Under 40 CFR Part 60, Subpart VVa, this process is considered to be an affected facility.
- (C) One (1) DDGS evaporator, with a maximum throughput of 392,568 tons of DDGS per year or 44.8 tons per hour. Under 40 CFR Part 60, Subpart VVa, this process is considered to be an affected facility.
- (D) One (1) DDGS cooling drum, identified as S70, with a maximum throughput of 392,568 tons of DDGS per year, controlled by a baghouse, identified as S70 and exhausting to stack S70. Under 40 CFR Part 60, Subpart VVa, this process is considered to be an affected facility.
- (4) Ethanol loading racks, identified as EP-8, with a maximum loading capacity of 121 million gallons per year, controlled by enclosed flare EP-14, with a heat input capacity of 12.4 MMBtu/hr and consisting of the following:
 - (A) One (1) ethanol truck loading rack, utilizing submerged loading, with a maximum loading capacity of 121 million gallons per year.
 - (B) One (1) ethanol railcar loading rack, utilizing submerged loading, with a maximum loading capacity of 121 million gallons per year.

Under 40 CFR Part 60, Subpart VVa, the pumps, compressors, pressure relief devices in gas/vapor service, sampling connection systems, open-ended valves or lines, and valves of this process are considered to be affected facilities..

(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 2-7-5(1)]

E.1.1 General Provisions Relating to New Source Performance Standards [326 IAC 12-1] [40 CFR Part 60, Subpart A]

- (a) Pursuant to 40 CFR 60.1, the Permittee shall comply with the provisions of 40 CFR Part 60 Subpart A – General Provisions, which are incorporated by reference as 326 IAC 12-1, except as otherwise specified in 40 CFR Part 60, Subpart VVa.
- (b) Pursuant to 40 CFR 60.19, the Permittee shall submit all required notifications and reports to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue, MC61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

E.1.2 Standard of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006 [40 CFR Part 60, Subpart VVa]

Pursuant to 40 CFR Part 60, Subpart VVa, the Permittee shall comply with the provisions of the Standard of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for Which Construction, Reconstruction, or Modification Commenced After

November 7, 2006. The provisions are incorporated by reference as 326 IAC 12, as specified as follows:

Title 40: Protection of Environment

Subpart VVa — Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006

Source: 72 FR 64883, Nov. 16, 2007, unless otherwise noted.

§ 60.480a Applicability and designation of affected facility.

- (a) (1) The provisions of this subpart apply to affected facilities in the synthetic organic chemicals manufacturing industry.
- (2) The group of all equipment (defined in §60.481a) within a process unit is an affected facility.
- (b) Any affected facility under paragraph (a) of this section that commences construction, reconstruction, or modification after November 7, 2006, shall be subject to the requirements of this subpart.
- (c) Addition or replacement of equipment for the purpose of process improvement which is accomplished without a capital expenditure shall not by itself be considered a modification under this subpart.
- (d) (1) If an owner or operator applies for one or more of the exemptions in this paragraph, then the owner or operator shall maintain records as required in §60.486a(i).
- (2) Any affected facility that has the design capacity to produce less than 1,000 Mg/yr (1,102 ton/yr) of a chemical listed in §60.489 is exempt from §§60.482–1a through 60.482–11a.
- (3) If an affected facility produces heavy liquid chemicals only from heavy liquid feed or raw materials, then it is exempt from §§60.482–1a through 60.482–11a.
- (4) Any affected facility that produces beverage alcohol is exempt from §§60.482–1a through 60.482–11a.
- (5) Any affected facility that has no equipment in volatile organic compounds (VOC) service is exempt from §§60.482–1a through 60.482–11a.

§ 60.481a Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Clean Air Act (CAA) or in subpart A of part 60, and the following terms shall have the specific meanings given them.

Capital expenditure means, in addition to the definition in 40 CFR 60.2, an expenditure for a physical or operational change to an existing facility that:

- (a) Exceeds P, the product of the facility's replacement cost, R, and an adjusted annual asset guideline repair allowance, A, as reflected by the following equation: $P = R \times A$, where:
 - (1) The adjusted annual asset guideline repair allowance, A, is the product of the percent of the replacement cost, Y, and the applicable basic annual asset guideline repair allowance, B, divided by 100 as reflected by the following

equation:

$$A = Y \times (B \div 100);$$

- (2) The percent Y is determined from the following equation: $Y = 1.0 - 0.575 \log X$, where X is 2006 minus the year of construction; and
- (3) The applicable basic annual asset guideline repair allowance, B, is selected from the following table consistent with the applicable subpart:

Table for Determining Applicable Value for B

Subpart applicable to facility	Value of B to be used in equation
VVa	12.5
GGGa	7.0

Closed-loop system means an enclosed system that returns process fluid to the process.

Closed-purge system means a system or combination of systems and portable containers to capture purged liquids. Containers for purged liquids must be covered or closed when not being filled or emptied.

Closed vent system means a system that is not open to the atmosphere and that is composed of hard-piping, ductwork, connections, and, if necessary, flow-inducing devices that transport gas or vapor from a piece or pieces of equipment to a control device or back to a process.

Connector means flanged, screwed, or other joined fittings used to connect two pipe lines or a pipe line and a piece of process equipment or that close an opening in a pipe that could be connected to another pipe. Joined fittings welded completely around the circumference of the interface are not considered connectors for the purpose of this regulation.

Control device means an enclosed combustion device, vapor recovery system, or flare.

Distance piece means an open or enclosed casing through which the piston rod travels, separating the compressor cylinder from the crankcase.

Double block and bleed system means two block valves connected in series with a bleed valve or line that can vent the line between the two block valves.

Duct work means a conveyance system such as those commonly used for heating and ventilation systems. It is often made of sheet metal and often has sections connected by screws or crimping. Hard-piping is not ductwork.

Equipment means each pump, compressor, pressure relief device, sampling connection system, open-ended valve or line, valve, and flange or other connector in VOC service and any devices or systems required by this subpart.

First attempt at repair means to take action for the purpose of stopping or reducing leakage of organic material to the atmosphere using best practices.

Fuel gas means gases that are combusted to derive useful work or heat.

Fuel gas system means the offsite and onsite piping and flow and pressure control system that gathers gaseous stream(s) generated by onsite operations, may blend them with other sources of gas, and transports the gaseous stream for use as fuel gas in combustion devices or in-process combustion equipment, such as furnaces and gas turbines, either singly or in combination.

Hard-piping means pipe or tubing that is manufactured and properly installed using good engineering judgment and standards such as ASME B31.3, Process Piping (available from the American Society of Mechanical Engineers, P.O. Box 2300, Fairfield, NJ 07007–2300).

In gas/vapor service means that the piece of equipment contains process fluid that is in the gaseous state at operating conditions.

In heavy liquid service means that the piece of equipment is not in gas/vapor service or in light liquid service.

In light liquid service means that the piece of equipment contains a liquid that meets the conditions specified in §60.485a(e).

In-situ sampling systems means nonextractive samplers or in-line samplers.

In vacuum service means that equipment is operating at an internal pressure which is at least 5 kilopascals (kPa) (0.7 psia) below ambient pressure.

In VOC service means that the piece of equipment contains or contacts a process fluid that is at least 10 percent VOC by weight. (The provisions of §60.485a(d) specify how to determine that a piece of equipment is not in VOC service.)

Initial calibration value means the concentration measured during the initial calibration at the beginning of each day required in §60.485a(b)(1), or the most recent calibration if the instrument is recalibrated during the day (i.e., the calibration is adjusted) after a calibration drift assessment.

Liquids dripping means any visible leakage from the seal including spraying, misting, clouding, and ice formation.

Open-ended valve or line means any valve, except safety relief valves, having one side of the valve seat in contact with process fluid and one side open to the atmosphere, either directly or through open piping.

Pressure release means the emission of materials resulting from system pressure being greater than set pressure of the pressure relief device.

Process improvement means routine changes made for safety and occupational health requirements, for energy savings, for better utility, for ease of maintenance and operation, for correction of design deficiencies, for bottleneck removal, for changing product requirements, or for environmental control.

Process unit means the components assembled and connected by pipes or ducts to process raw materials and to produce, as intermediate or final products, one or more of the chemicals listed in §60.489. A process unit can operate independently if supplied with sufficient feed or raw materials and sufficient storage facilities for the product. For the purpose of this subpart, process unit includes any feed, intermediate and final product storage vessels (except as specified in §60.482–1a(g)), product transfer racks, and connected ducts and piping. A process unit includes all equipment as defined in this subpart.

Process unit shutdown means a work practice or operational procedure that stops production from a process unit or part of a process unit during which it is technically feasible to clear process material from a process unit or part of a process unit consistent with safety constraints and during which repairs can be accomplished. The following are not considered process unit shutdowns:

- (1) An unscheduled work practice or operational procedure that stops production from a process unit or part of a process unit for less than 24 hours.

- (2) An unscheduled work practice or operational procedure that would stop production from a process unit or part of a process unit for a shorter period of time than would be required to clear the process unit or part of the process unit of materials and start up the unit, and would result in greater emissions than delay of repair of leaking components until the next scheduled process unit shutdown.
- (3) The use of spare equipment and technically feasible bypassing of equipment without stopping production.

Quarter means a 3-month period; the first quarter concludes on the last day of the last full month during the 180 days following initial startup.

Repaired means that equipment is adjusted, or otherwise altered, in order to eliminate a leak as defined in the applicable sections of this subpart and, except for leaks identified in accordance with §§60.482–2a(b)(2)(ii) and (d)(6)(ii) and (d)(6)(iii), 60.482–3a(f), and 60.482–10a(f)(1)(ii), is re-monitored as specified in §60.485a(b) to verify that emissions from the equipment are below the applicable leak definition.

Replacement cost means the capital needed to purchase all the depreciable components in a facility.

Sampling connection system means an assembly of equipment within a process unit used during periods of representative operation to take samples of the process fluid. Equipment used to take nonroutine grab samples is not considered a sampling connection system.

Sensor means a device that measures a physical quantity or the change in a physical quantity such as temperature, pressure, flow rate, pH, or liquid level.

Storage vessel means a tank or other vessel that is used to store organic liquids that are used in the process as raw material feedstocks, produced as intermediates or final products, or generated as wastes. Storage vessel does not include vessels permanently attached to motor vehicles, such as trucks, railcars, barges or ships.

Synthetic organic chemicals manufacturing industry means the industry that produces, as intermediates or final products, one or more of the chemicals listed in §60.489.

Transfer rack means the collection of loading arms and loading hoses, at a single loading rack, that are used to fill tank trucks and/or railcars with organic liquids.

Volatile organic compounds or VOC means, for the purposes of this subpart, any reactive organic compounds as defined in §60.2 Definitions.

§ 60.482-1a Standards: General.

- (a) Each owner or operator subject to the provisions of this subpart shall demonstrate compliance with the requirements of §§60.482–1a through 60.482–10a or §60.480a(e) for all equipment within 180 days of initial startup.
- (b) Compliance with §§60.482–1a to 60.482–10a will be determined by review of records and reports, review of performance test results, and inspection using the methods and procedures specified in §60.485a.
- (c)
 - (1) An owner or operator may request a determination of equivalence of a means of emission limitation to the requirements of §§60.482–2a, 60.482–3a, 60.482–5a, 60.482–6a, 60.482–7a, 60.482–8a, and 60.482–10a as provided in §60.484a.
 - (2) If the Administrator makes a determination that a means of emission limitation is at least equivalent to the requirements of §§60.482–2a, 60.482–3a, 60.482–5a, 60.482–6a,

60.482–7a, 60.482–8a, or 60.482–10a, an owner or operator shall comply with the requirements of that determination.

- (d) Equipment that is in vacuum service is excluded from the requirements of §§60.482–2a through 60.482–10a if it is identified as required in §60.486a(e)(5).
- (e) Equipment that an owner or operator designates as being in VOC service less than 300 hr/yr is excluded from the requirements of §§60.482–2a through 60.482–11a if it is identified as required in §60.486a(e)(6) and it meets any of the conditions specified in paragraphs (e)(1) through (3) of this section.
 - (1) The equipment is in VOC service only during startup and shutdown, excluding startup and shutdown between batches of the same campaign for a batch process.
 - (2) The equipment is in VOC service only during process malfunctions or other emergencies.
 - (3) The equipment is backup equipment that is in VOC service only when the primary equipment is out of service.
- (f) (1) If a dedicated batch process unit operates less than 365 days during a year, an owner or operator may monitor to detect leaks from pumps, valves, and open-ended valves or lines at the frequency specified in the following table instead of monitoring as specified in §§60.482–2a, 60.482–7a, and 60.483.2a:

Operating time (percent of hours during year)	Equivalent monitoring frequency time in use		
	Monthly	Quarterly	Semiannually
0 to <25	Quarterly	Annually	Annually.
25 to <50	Quarterly	Semiannually	Annually.
50 to <75	Bimonthly	Three quarters	Semiannually.
75 to 100	Monthly	Quarterly	Semiannually.

- (2) Pumps and valves that are shared among two or more batch process units that are subject to this subpart may be monitored at the frequencies specified in paragraph (f)(1) of this section, provided the operating time of all such process units is considered.
- (3) The monitoring frequencies specified in paragraph (f)(1) of this section are not requirements for monitoring at specific intervals and can be adjusted to accommodate process operations. An owner or operator may monitor at any time during the specified monitoring period (e.g., month, quarter, year), provided the monitoring is conducted at a reasonable interval after completion of the last monitoring campaign. Reasonable intervals are defined in paragraphs (f)(3)(i) through (iv) of this section.
 - (i) When monitoring is conducted quarterly, monitoring events must be separated by at least 30 calendar days.
 - (ii) When monitoring is conducted semiannually (i.e. , once every 2 quarters), monitoring events must be separated by at least 60 calendar days.
 - (iii) When monitoring is conducted in 3 quarters per year, monitoring events must be separated by at least 90 calendar days.

- (iv) When monitoring is conducted annually, monitoring events must be separated by at least 120 calendar days.
- (g) If the storage vessel is shared with multiple process units, the process unit with the greatest annual amount of stored materials (predominant use) is the process unit the storage vessel is assigned to. If the storage vessel is shared equally among process units, and one of the process units has equipment subject to this subpart, the storage vessel is assigned to that process unit. If the storage vessel is shared equally among process units, none of which have equipment subject to this subpart of this part, the storage vessel is assigned to any process unit subject to subpart VV of this part. If the predominant use of the storage vessel varies from year to year, then the owner or operator must estimate the predominant use initially and reassess every 3 years. The owner or operator must keep records of the information and supporting calculations that show how predominant use is determined. All equipment on the storage vessel must be monitored when in VOC service.

§ 60.482-2a Standards: Pumps in light liquid service.

- (a)
 - (1) Each pump in light liquid service shall be monitored monthly to detect leaks by the methods specified in §60.485a(b), except as provided in §60.482–1a(c) and (f) and paragraphs (d), (e), and (f) of this section. A pump that begins operation in light liquid service after the initial startup date for the process unit must be monitored for the first time within 30 days after the end of its startup period, except for a pump that replaces a leaking pump and except as provided in §60.482–1a(c) and paragraphs (d), (e), and (f) of this section.
 - (2) Each pump in light liquid service shall be checked by visual inspection each calendar week for indications of liquids dripping from the pump seal, except as provided in §60.482–1a(f).
- (b)
 - (1) The instrument reading that defines a leak is specified in paragraphs (b)(1)(i) and (ii) of this section.
 - (i) 5,000 parts per million (ppm) or greater for pumps handling polymerizing monomers;
 - (ii) 2,000 ppm or greater for all other pumps.
 - (2) If there are indications of liquids dripping from the pump seal, the owner or operator shall follow the procedure specified in either paragraph (b)(2)(i) or (ii) of this section. This requirement does not apply to a pump that was monitored after a previous weekly inspection and the instrument reading was less than the concentration specified in paragraph (b)(1)(i) or (ii) of this section, whichever is applicable.
 - (i) Monitor the pump within 5 days as specified in §60.485a(b). A leak is detected if the instrument reading measured during monitoring indicates a leak as specified in paragraph (b)(1)(i) or (ii) of this section, whichever is applicable. The leak shall be repaired using the procedures in paragraph (c) of this section.
 - (ii) Designate the visual indications of liquids dripping as a leak, and repair the leak using either the procedures in paragraph (c) of this section or by eliminating the visual indications of liquids dripping.
- (c)
 - (1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in §60.482–9a.

- (2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected. First attempts at repair include, but are not limited to, the practices described in paragraphs (c)(2)(i) and (ii) of this section, where practicable.
 - (i) Tightening the packing gland nuts;
 - (ii) Ensuring that the seal flush is operating at design pressure and temperature.

§ 60.482-4a Standards: Pressure relief devices in gas/vapor service.

- (a) Except during pressure releases, each pressure relief device in gas/vapor service shall be operated with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as determined by the methods specified in §60.485a(c).
- (b)
 - (1) After each pressure release, the pressure relief device shall be returned to a condition of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as soon as practicable, but no later than 5 calendar days after the pressure release, except as provided in §60.482–9a.
 - (2) No later than 5 calendar days after the pressure release, the pressure relief device shall be monitored to confirm the conditions of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, by the methods specified in §60.485a(c).
- (c) Any pressure relief device that is routed to a process or fuel gas system or equipped with a closed vent system capable of capturing and transporting leakage through the pressure relief device to a control device as described in §60.482–10a is exempted from the requirements of paragraphs (a) and (b) of this section.
- (d)
 - (1) Any pressure relief device that is equipped with a rupture disk upstream of the pressure relief device is exempt from the requirements of paragraphs (a) and (b) of this section, provided the owner or operator complies with the requirements in paragraph (d)(2) of this section.
 - (2) After each pressure release, a new rupture disk shall be installed upstream of the pressure relief device as soon as practicable, but no later than 5 calendar days after each pressure release, except as provided in §60.482–9a.

§ 60.482-6a Standards: Open-ended valves or lines.

- (a)
 - (1) Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve, except as provided in §60.482–1a(c) and paragraphs (d) and (e) of this section.
 - (2) The cap, blind flange, plug, or second valve shall seal the open end at all times except during operations requiring process fluid flow through the open-ended valve or line.
- (b) Each open-ended valve or line equipped with a second valve shall be operated in a manner such that the valve on the process fluid end is closed before the second valve is closed.
- (c) When a double block-and-bleed system is being used, the bleed valve or line may remain open during operations that require venting the line between the block valves but shall comply with paragraph (a) of this section at all other times.
- (d) Open-ended valves or lines in an emergency shutdown system which are designed to open automatically in the event of a process upset are exempt from the requirements of paragraphs (a), (b), and (c) of this section.

- (e) Open-ended valves or lines containing materials which would autocatalytically polymerize or would present an explosion, serious overpressure, or other safety hazard if capped or equipped with a double block and bleed system as specified in paragraphs (a) through (c) of this section are exempt from the requirements of paragraphs (a) through (c) of this section.

§ 60.482-7a Standards: Valves in gas/vapor service and in light liquid service.

- (a) (1) Each valve shall be monitored monthly to detect leaks by the methods specified in §60.485a(b) and shall comply with paragraphs (b) through (e) of this section, except as provided in paragraphs (f), (g), and (h) of this section, §60.482-1a(c) and (f), and §§60.483-1a and 60.483-2a.
- (2) A valve that begins operation in gas/vapor service or light liquid service after the initial startup date for the process unit must be monitored according to paragraphs (a)(2)(i) or (ii), except for a valve that replaces a leaking valve and except as provided in paragraphs (f), (g), and (h) of this section, §60.482-1a(c), and §§60.483-1a and 60.483-2a.
- (i) Monitor the valve as in paragraph (a)(1) of this section. The valve must be monitored for the first time within 30 days after the end of its startup period to ensure proper installation.
- (ii) If the existing valves in the process unit are monitored in accordance with §60.483-1a or §60.483-2a, count the new valve as leaking when calculating the percentage of valves leaking as described in §60.483-2a(b)(5). If less than 2.0 percent of the valves are leaking for that process unit, the valve must be monitored for the first time during the next scheduled monitoring event for existing valves in the process unit or within 90 days, whichever comes first.
- (b) If an instrument reading of 500 ppm or greater is measured, a leak is detected.
- (c) (1) (i) Any valve for which a leak is not detected for 2 successive months may be monitored the first month of every quarter, beginning with the next quarter, until a leak is detected.
- (ii) As an alternative to monitoring all of the valves in the first month of a quarter, an owner or operator may elect to subdivide the process unit into two or three subgroups of valves and monitor each subgroup in a different month during the quarter, provided each subgroup is monitored every 3 months. The owner or operator must keep records of the valves assigned to each subgroup.
- (2) If a leak is detected, the valve shall be monitored monthly until a leak is not detected for 2 successive months.
- (d) (1) When a leak is detected, it shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in §60.482-9a.
- (2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.
- (e) First attempts at repair include, but are not limited to, the following best practices where practicable:
- (1) Tightening of bonnet bolts;
- (2) Replacement of bonnet bolts;

- (3) Tightening of packing gland nuts;
- (4) Injection of lubricant into lubricated packing.

§ 60.482-8a Standards: Pumps, valves, and connectors in heavy liquid service and pressure relief devices in light liquid or heavy liquid service.

- (a) If evidence of a potential leak is found by visual, audible, olfactory, or any other detection method at pumps, valves, and connectors in heavy liquid service and pressure relief devices in light liquid or heavy liquid service, the owner or operator shall follow either one of the following procedures:
 - (1) The owner or operator shall monitor the equipment within 5 days by the method specified in §60.485a(b) and shall comply with the requirements of paragraphs (b) through (d) of this section.
 - (2) The owner or operator shall eliminate the visual, audible, olfactory, or other indication of a potential leak within 5 calendar days of detection.
- (b) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.
- (c)
 - (1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in §60.482–9a.
 - (2) The first attempt at repair shall be made no later than 5 calendar days after each leak is detected.
- (d) First attempts at repair include, but are not limited to, the best practices described under §§60.482–2a(c)(2) and 60.482–7a(e).

§ 60.482-9a Standards: Delay of repair.

- (a) Delay of repair of equipment for which leaks have been detected will be allowed if repair within 15 days is technically infeasible without a process unit shutdown. Repair of this equipment shall occur before the end of the next process unit shutdown. Monitoring to verify repair must occur within 15 days after startup of the process unit.
- (b) Delay of repair of equipment will be allowed for equipment which is isolated from the process and which does not remain in VOC service.
- (c) Delay of repair for valves and connectors will be allowed if:
 - (1) The owner or operator demonstrates that emissions of purged material resulting from immediate repair are greater than the fugitive emissions likely to result from delay of repair, and
 - (2) When repair procedures are effected, the purged material is collected and destroyed or recovered in a control device complying with §60.482–10a.
- (d) Delay of repair for pumps will be allowed if:
 - (1) Repair requires the use of a dual mechanical seal system that includes a barrier fluid system, and
 - (2) Repair is completed as soon as practicable, but not later than 6 months after the leak was detected.

- (e) Delay of repair beyond a process unit shutdown will be allowed for a valve, if valve assembly replacement is necessary during the process unit shutdown, valve assembly supplies have been depleted, and valve assembly supplies had been sufficiently stocked before the supplies were depleted. Delay of repair beyond the next process unit shutdown will not be allowed unless the next process unit shutdown occurs sooner than 6 months after the first process unit shutdown.
- (f) When delay of repair is allowed for a leaking pump, valve, or connector that remains in service, the pump, valve, or connector may be considered to be repaired and no longer subject to delay of repair requirements if two consecutive monthly monitoring instrument readings are below the leak definition.

§ 60.482-10a Standards: Closed vent systems and control devices.

- (a) Owners or operators of closed vent systems and control devices used to comply with provisions of this subpart shall comply with the provisions of this section.
- (b) Vapor recovery systems (for example, condensers and absorbers) shall be designed and operated to recover the VOC emissions vented to them with an efficiency of 95 percent or greater, or to an exit concentration of 20 parts per million by volume (ppmv), whichever is less stringent.
- (c) Enclosed combustion devices shall be designed and operated to reduce the VOC emissions vented to them with an efficiency of 95 percent or greater, or to an exit concentration of 20 ppmv, on a dry basis, corrected to 3 percent oxygen, whichever is less stringent or to provide a minimum residence time of 0.75 seconds at a minimum temperature of 816 °C.
- (d) Flares used to comply with this subpart shall comply with the requirements of §60.18.
- (e) Owners or operators of control devices used to comply with the provisions of this subpart shall monitor these control devices to ensure that they are operated and maintained in conformance with their designs.
- (f) Except as provided in paragraphs (i) through (k) of this section, each closed vent system shall be inspected according to the procedures and schedule specified in paragraphs (f)(1) and (2) of this section.
 - (1) If the vapor collection system or closed vent system is constructed of hard-piping, the owner or operator shall comply with the requirements specified in paragraphs (f)(1)(i) and (ii) of this section:
 - (i) Conduct an initial inspection according to the procedures in §60.485a(b); and
 - (ii) Conduct annual visual inspections for visible, audible, or olfactory indications of leaks.
 - (2) If the vapor collection system or closed vent system is constructed of ductwork, the owner or operator shall:
 - (i) Conduct an initial inspection according to the procedures in §60.485a(b); and
 - (ii) Conduct annual inspections according to the procedures in §60.485a(b).
- (g) Leaks, as indicated by an instrument reading greater than 500 ppmv above background or by visual inspections, shall be repaired as soon as practicable except as provided in paragraph (h) of this section.

- (1) A first attempt at repair shall be made no later than 5 calendar days after the leak is detected.
 - (2) Repair shall be completed no later than 15 calendar days after the leak is detected.
- (h) Delay of repair of a closed vent system for which leaks have been detected is allowed if the repair is technically infeasible without a process unit shutdown or if the owner or operator determines that emissions resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair. Repair of such equipment shall be complete by the end of the next process unit shutdown.
- (i) If a vapor collection system or closed vent system is operated under a vacuum, it is exempt from the inspection requirements of paragraphs (f)(1)(i) and (f)(2) of this section.
- (j) Any parts of the closed vent system that are designated, as described in paragraph (l)(1) of this section, as unsafe to inspect are exempt from the inspection requirements of paragraphs (f)(1)(i) and (f)(2) of this section if they comply with the requirements specified in paragraphs (j)(1) and (2) of this section:
- (1) The owner or operator determines that the equipment is unsafe to inspect because inspecting personnel would be exposed to an imminent or potential danger as a consequence of complying with paragraphs (f)(1)(i) or (f)(2) of this section; and
 - (2) The owner or operator has a written plan that requires inspection of the equipment as frequently as practicable during safe-to-inspect times.
- (k) Any parts of the closed vent system that are designated, as described in paragraph (l)(2) of this section, as difficult to inspect are exempt from the inspection requirements of paragraphs (f)(1)(i) and (f)(2) of this section if they comply with the requirements specified in paragraphs (k)(1) through (3) of this section:
- (1) The owner or operator determines that the equipment cannot be inspected without elevating the inspecting personnel more than 2 meters above a support surface; and
 - (2) The process unit within which the closed vent system is located becomes an affected facility through §§60.14 or 60.15, or the owner or operator designates less than 3.0 percent of the total number of closed vent system equipment as difficult to inspect; and
 - (3) The owner or operator has a written plan that requires inspection of the equipment at least once every 5 years. A closed vent system is exempt from inspection if it is operated under a vacuum.
- (l) The owner or operator shall record the information specified in paragraphs (l)(1) through (5) of this section.
- (1) Identification of all parts of the closed vent system that are designated as unsafe to inspect, an explanation of why the equipment is unsafe to inspect, and the plan for inspecting the equipment.
 - (2) Identification of all parts of the closed vent system that are designated as difficult to inspect, an explanation of why the equipment is difficult to inspect, and the plan for inspecting the equipment.
 - (3) For each inspection during which a leak is detected, a record of the information specified in §60.486a(c).

- (4) For each inspection conducted in accordance with §60.485a(b) during which no leaks are detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected.
- (5) For each visual inspection conducted in accordance with paragraph (f)(1)(ii) of this section during which no leaks are detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected.
- (m) Closed vent systems and control devices used to comply with provisions of this subpart shall be operated at all times when emissions may be vented to them.

§ 60.482-11a Standards: Connectors in gas/vapor service and in light liquid service.

- (a) The owner or operator shall initially monitor all connectors in the process unit for leaks by the later of either 12 months after the compliance date or 12 months after initial startup. If all connectors in the process unit have been monitored for leaks prior to the compliance date, no initial monitoring is required provided either no process changes have been made since the monitoring or the owner or operator can determine that the results of the monitoring, with or without adjustments, reliably demonstrate compliance despite process changes. If required to monitor because of a process change, the owner or operator is required to monitor only those connectors involved in the process change.
- (b) Except as allowed in §60.482-1a(c), §60.482-10a, or as specified in paragraph (e) of this section, the owner or operator shall monitor all connectors in gas and vapor and light liquid service as specified in paragraphs (a) and (b)(3) of this section.
 - (1) The connectors shall be monitored to detect leaks by the method specified in §60.485a(b) and, as applicable, §60.485a(c).
 - (2) If an instrument reading greater than or equal to 500 ppm is measured, a leak is detected.
 - (3) The owner or operator shall perform monitoring, subsequent to the initial monitoring required in paragraph (a) of this section, as specified in paragraphs (b)(3)(i) through (iii) of this section, and shall comply with the requirements of paragraphs (b)(3)(iv) and (v) of this section. The required period in which monitoring must be conducted shall be determined from paragraphs (b)(3)(i) through (iii) of this section using the monitoring results from the preceding monitoring period. The percent leaking connectors shall be calculated as specified in paragraph (c) of this section.
 - (i) If the percent leaking connectors in the process unit was greater than or equal to 0.5 percent, then monitor within 12 months (1 year).
 - (ii) If the percent leaking connectors in the process unit was greater than or equal to 0.25 percent but less than 0.5 percent, then monitor within 4 years. An owner or operator may comply with the requirements of this paragraph by monitoring at least 40 percent of the connectors within 2 years of the start of the monitoring period, provided all connectors have been monitored by the end of the 4-year monitoring period.
 - (iii) If the percent leaking connectors in the process unit was less than 0.25 percent, then monitor as provided in paragraph (b)(3)(iii)(A) of this section and either paragraph (b)(3)(iii)(B) or (b)(3)(iii)(C) of this section, as appropriate.
 - (A) An owner or operator shall monitor at least 50 percent of the connectors within 4 years of the start of the monitoring period.

- (B) If the percent of leaking connectors calculated from the monitoring results in paragraph (b)(3)(iii)(A) of this section is greater than or equal to 0.35 percent of the monitored connectors, the owner or operator shall monitor as soon as practical, but within the next 6 months, all connectors that have not yet been monitored during the monitoring period. At the conclusion of monitoring, a new monitoring period shall be started pursuant to paragraph (b)(3) of this section, based on the percent of leaking connectors within the total monitored connectors.
 - (C) If the percent of leaking connectors calculated from the monitoring results in paragraph (b)(3)(iii)(A) of this section is less than 0.35 percent of the monitored connectors, the owner or operator shall monitor all connectors that have not yet been monitored within 8 years of the start of the monitoring period.
 - (iv) If, during the monitoring conducted pursuant to paragraphs (b)(3)(i) through (iii) of this section, a connector is found to be leaking, it shall be re-monitored once within 90 days after repair to confirm that it is not leaking.
 - (v) The owner or operator shall keep a record of the start date and end date of each monitoring period under this section for each process unit.
- (c) For use in determining the monitoring frequency, as specified in paragraphs (a) and (b)(3) of this section, the percent leaking connectors as used in paragraphs (a) and (b)(3) of this section shall be calculated by using the following equation:

$$\%C_L = C_L / C_t * 100$$

Where:

$\%C_L$ = Percent of leaking connectors as determined through periodic monitoring required in paragraphs (a) and (b)(3)(i) through (iii) of this section.

C_L = Number of connectors measured at 500 ppm or greater, by the method specified in §60.485a(b).

C_t = Total number of monitored connectors in the process unit or affected facility.

- (d) When a leak is detected pursuant to paragraphs (a) and (b) of this section, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in §60.482–9a. A first attempt at repair as defined in this subpart shall be made no later than 5 calendar days after the leak is detected.
- (e) Any connector that is designated, as described in §60.486a(f)(1), as an unsafe-to-monitor connector is exempt from the requirements of paragraphs (a) and (b) of this section if:
 - (1) The owner or operator of the connector demonstrates that the connector is unsafe-to-monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with paragraphs (a) and (b) of this section; and
 - (2) The owner or operator of the connector has a written plan that requires monitoring of the connector as frequently as practicable during safe-to-monitor times but not more frequently than the periodic monitoring schedule otherwise applicable, and repair of the equipment according to the procedures in paragraph (d) of this section if a leak is detected.

- (f) Inaccessible, ceramic, or ceramic-lined connectors .
- (1) Any connector that is inaccessible or that is ceramic or ceramic-lined (e.g., porcelain, glass, or glass-lined), is exempt from the monitoring requirements of paragraphs (a) and (b) of this section, from the leak repair requirements of paragraph (d) of this section, and from the recordkeeping and reporting requirements of §§63.1038 and 63.1039. An inaccessible connector is one that meets any of the provisions specified in paragraphs (f)(1)(i) through (vi) of this section, as applicable:
- (i) Buried;
 - (ii) Insulated in a manner that prevents access to the connector by a monitor probe;
 - (iii) Obstructed by equipment or piping that prevents access to the connector by a monitor probe;
 - (iv) Unable to be reached from a wheeled scissor-lift or hydraulic-type scaffold that would allow access to connectors up to 7.6 meters (25 feet) above the ground;
 - (v) Inaccessible because it would require elevating the monitoring personnel more than 2 meters (7 feet) above a permanent support surface or would require the erection of scaffold; or
 - (vi) Not able to be accessed at any time in a safe manner to perform monitoring. Unsafe access includes, but is not limited to, the use of a wheeled scissor-lift on unstable or uneven terrain, the use of a motorized man-lift basket in areas where an ignition potential exists, or access would require near proximity to hazards such as electrical lines, or would risk damage to equipment.
- (2) If any inaccessible, ceramic, or ceramic-lined connector is observed by visual, audible, olfactory, or other means to be leaking, the visual, audible, olfactory, or other indications of a leak to the atmosphere shall be eliminated as soon as practical.
- (g) Except for instrumentation systems and inaccessible, ceramic, or ceramic-lined connectors meeting the provisions of paragraph (f) of this section, identify the connectors subject to the requirements of this subpart. Connectors need not be individually identified if all connectors in a designated area or length of pipe subject to the provisions of this subpart are identified as a group, and the number of connectors subject is indicated.

§ 60.483-1a Alternative standards for valves—allowable percentage of valves leaking.

- (a) An owner or operator may elect to comply with an allowable percentage of valves leaking of equal to or less than 2.0 percent.
- (b) The following requirements shall be met if an owner or operator wishes to comply with an allowable percentage of valves leaking:
- (1) An owner or operator must notify the Administrator that the owner or operator has elected to comply with the allowable percentage of valves leaking before implementing this alternative standard, as specified in §60.487a(d).
 - (2) A performance test as specified in paragraph (c) of this section shall be conducted initially upon designation, annually, and at other times requested by the Administrator.
 - (3) If a valve leak is detected, it shall be repaired in accordance with §60.482–7a(d) and (e).

- (c) Performance tests shall be conducted in the following manner:
- (1) All valves in gas/vapor and light liquid service within the affected facility shall be monitored within 1 week by the methods specified in §60.485a(b).
 - (2) If an instrument reading of 500 ppm or greater is measured, a leak is detected.
 - (3) The leak percentage shall be determined by dividing the number of valves for which leaks are detected by the number of valves in gas/vapor and light liquid service within the affected facility.
- (d) Owners and operators who elect to comply with this alternative standard shall not have an affected facility with a leak percentage greater than 2.0 percent, determined as described in §60.485a(h).

§ 60.483-2a Alternative standards for valves—skip period leak detection and repair.

- (a) (1) An owner or operator may elect to comply with one of the alternative work practices specified in paragraphs (b)(2) and (3) of this section.
- (2) An owner or operator must notify the Administrator before implementing one of the alternative work practices, as specified in §60.487(d)a.
- (b) (1) An owner or operator shall comply initially with the requirements for valves in gas/vapor service and valves in light liquid service, as described in §60.482–7a.
- (2) After 2 consecutive quarterly leak detection periods with the percent of valves leaking equal to or less than 2.0, an owner or operator may begin to skip 1 of the quarterly leak detection periods for the valves in gas/vapor and light liquid service.
- (3) After 5 consecutive quarterly leak detection periods with the percent of valves leaking equal to or less than 2.0, an owner or operator may begin to skip 3 of the quarterly leak detection periods for the valves in gas/vapor and light liquid service.
- (4) If the percent of valves leaking is greater than 2.0, the owner or operator shall comply with the requirements as described in §60.482–7a but can again elect to use this section.
- (5) The percent of valves leaking shall be determined as described in §60.485a(h).
- (6) An owner or operator must keep a record of the percent of valves found leaking during each leak detection period.
- (7) A valve that begins operation in gas/vapor service or light liquid service after the initial startup date for a process unit following one of the alternative standards in this section must be monitored in accordance with §60.482–7a(a)(2)(i) or (ii) before the provisions of this section can be applied to that valve.

§ 60.484a Equivalence of means of emission limitation.

- (a) Each owner or operator subject to the provisions of this subpart may apply to the Administrator for determination of equivalence for any means of emission limitation that achieves a reduction in emissions of VOC at least equivalent to the reduction in emissions of VOC achieved by the controls required in this subpart.
- (b) Determination of equivalence to the equipment, design, and operational requirements of this subpart will be evaluated by the following guidelines:

- (1) Each owner or operator applying for an equivalence determination shall be responsible for collecting and verifying test data to demonstrate equivalence of means of emission limitation.
 - (2) The Administrator will compare test data for demonstrating equivalence of the means of emission limitation to test data for the equipment, design, and operational requirements.
 - (3) The Administrator may condition the approval of equivalence on requirements that may be necessary to assure operation and maintenance to achieve the same emission reduction as the equipment, design, and operational requirements.
- (c) Determination of equivalence to the required work practices in this subpart will be evaluated by the following guidelines:
- (1) Each owner or operator applying for a determination of equivalence shall be responsible for collecting and verifying test data to demonstrate equivalence of an equivalent means of emission limitation.
 - (2) For each affected facility for which a determination of equivalence is requested, the emission reduction achieved by the required work practice shall be demonstrated.
 - (3) For each affected facility, for which a determination of equivalence is requested, the emission reduction achieved by the equivalent means of emission limitation shall be demonstrated.
 - (4) Each owner or operator applying for a determination of equivalence shall commit in writing to work practice(s) that provide for emission reductions equal to or greater than the emission reductions achieved by the required work practice.
 - (5) The Administrator will compare the demonstrated emission reduction for the equivalent means of emission limitation to the demonstrated emission reduction for the required work practices and will consider the commitment in paragraph (c)(4) of this section.
 - (6) The Administrator may condition the approval of equivalence on requirements that may be necessary to assure operation and maintenance to achieve the same emission reduction as the required work practice.
- (d) An owner or operator may offer a unique approach to demonstrate the equivalence of any equivalent means of emission limitation.
- (e)
- (1) After a request for determination of equivalence is received, the Administrator will publish a notice in the Federal Register and provide the opportunity for public hearing if the Administrator judges that the request may be approved.
 - (2) After notice and opportunity for public hearing, the Administrator will determine the equivalence of a means of emission limitation and will publish the determination in the Federal Register.
 - (3) Any equivalent means of emission limitations approved under this section shall constitute a required work practice, equipment, design, or operational standard within the meaning of section 111(h)(1) of the CAA.
- (f)
- (1) Manufacturers of equipment used to control equipment leaks of VOC may apply to the Administrator for determination of equivalence for any equivalent means of emission limitation that achieves a reduction in emissions of VOC achieved by the equipment, design, and operational requirements of this subpart.

- (2) The Administrator will make an equivalence determination according to the provisions of paragraphs (b), (c), (d), and (e) of this section.

§ 60.485a 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 standards in §§60.482–1a through 60.482–11a, 60.483a, and 60.484a as follows:
 - (1) Method 21 shall be used to determine the presence of leaking sources. The instrument shall be calibrated before use each day of its use by the procedures specified in Method 21 of appendix A–7 of this part. The following calibration gases shall be used:
 - (i) Zero air (less than 10 ppm of hydrocarbon in air); and
 - (ii) A mixture of methane or n-hexane and air at a concentration no more than 2,000 ppm greater than the leak definition concentration of the equipment monitored. If the monitoring instrument's design allows for multiple calibration scales, then the lower scale shall be calibrated with a calibration gas that is no higher than 2,000 ppm above the concentration specified as a leak, and the highest scale shall be calibrated with a calibration gas that is approximately equal to 10,000 ppm. If only one scale on an instrument will be used during monitoring, the owner or operator need not calibrate the scales that will not be used during that day's monitoring.
 - (2) A calibration drift assessment shall be performed, at a minimum, at the end of each monitoring day. Check the instrument using the same calibration gas(es) that were used to calibrate the instrument before use. Follow the procedures specified in Method 21 of appendix A–7 of this part, Section 10.1, except do not adjust the meter readout to correspond to the calibration gas value. Record the instrument reading for each scale used as specified in §60.486a(e)(7). Calculate the average algebraic difference between the three meter readings and the most recent calibration value. Divide this algebraic difference by the initial calibration value and multiply by 100 to express the calibration drift as a percentage. If any calibration drift assessment shows a negative drift of more than 10 percent from the initial calibration value, then all equipment monitored since the last calibration with instrument readings below the appropriate leak definition and above the leak definition multiplied by (100 minus the percent of negative drift/divided by 100) must be re-monitored. If any calibration drift assessment shows a positive drift of more than 10 percent from the initial calibration value, then, at the owner/operator's discretion, all equipment since the last calibration with instrument readings above the appropriate leak definition and below the leak definition multiplied by (100 plus the percent of positive drift/divided by 100) may be re-monitored.
- (c) The owner or operator shall determine compliance with the no-detectable-emission standards in §§60.482–2a(e), 60.482–3a(i), 60.482–4a, 60.482–7a(f), and 60.482–10a(e) as follows:
 - (1) The requirements of paragraph (b) shall apply.
 - (2) Method 21 of appendix A–7 of this part shall be used to determine the background level. All potential leak interfaces shall be traversed as close to the interface as possible. The arithmetic difference between the maximum concentration indicated by the instrument and the background level is compared with 500 ppm for determining compliance.

- (d) The owner or operator shall test each piece of equipment unless he demonstrates that a process unit is not in VOC service, i.e., that the VOC content would never be reasonably expected to exceed 10 percent by weight. For purposes of this demonstration, the following methods and procedures shall be used:
- (1) Procedures that conform to the general methods in ASTM E260–73, 91, or 96, E168–67, 77, or 92, E169–63, 77, or 93 (incorporated by reference—see §60.17) shall be used to determine the percent VOC content in the process fluid that is contained in or contacts a piece of equipment.
 - (2) Organic compounds that are considered by the Administrator to have negligible photochemical reactivity may be excluded from the total quantity of organic compounds in determining the VOC content of the process fluid.
 - (3) Engineering judgment may be used to estimate the VOC content, if a piece of equipment had not been shown previously to be in service. If the Administrator disagrees with the judgment, paragraphs
- (d) (1) and (2) of this section shall be used to resolve the disagreement.
- (e) The owner or operator shall demonstrate that a piece of equipment is in light liquid service by showing that all the following conditions apply:
- (1) The vapor pressure of one or more of the organic components is greater than 0.3 kPa at 20 °C (1.2 in. H₂O at 68 °F). Standard reference texts or ASTM D2879–83, 96, or 97 (incorporated by reference—see §60.17) shall be used to determine the vapor pressures.
 - (2) The total concentration of the pure organic components having a vapor pressure greater than 0.3 kPa at 20 °C (1.2 in. H₂O at 68 °F) is equal to or greater than 20 percent by weight.
 - (3) The fluid is a liquid at operating conditions.
- (f) Samples used in conjunction with paragraphs (d), (e), and (g) of this section shall be representative of the process fluid that is contained in or contacts the equipment or the gas being combusted in the flare.
- (g) The owner or operator shall determine compliance with the standards of flares as follows:
- (1) Method 22 of appendix A–7 of this part shall be used to determine visible emissions.
 - (2) A thermocouple or any other equivalent device shall be used to monitor the presence of a pilot flame in the flare.
 - (3) The maximum permitted velocity for air assisted flares shall be computed using the following equation:

$$V_{\max} = K_1 + K_2 H_T$$

Where:

V_{\max} = Maximum permitted velocity, m/sec (ft/sec).

H_T = Net heating value of the gas being combusted, MJ/scm (Btu/scf).

K_1 = 8.706 m/sec (metric units) = 28.56 ft/sec (English units).

K_2 = 0.7084 m⁴/(MJ-sec) (metric units) = 0.087 ft⁴/(Btu-sec) (English units).

- (4) The net heating value (HT) of the gas being combusted in a flare shall be computed using the following equation:

$$H_I = K \sum_{i=1}^n C_i H_i$$

Where:

K = Conversion constant, 1.740×10^{-7} (g-mole)(MJ)/(ppm-scm-kcal) (metric units) = 4.674×10^{-6} [(g-mole)(Btu)/(ppm-scf-kcal)] (English units).

C_i = Concentration of sample component "i," ppm

H_i = net heat of combustion of sample component "i" at 25 °C and 760 mm Hg (77 °F and 14.7 psi), kcal/g-mole.

- (5) Method 18 of appendix A-6 of this part or ASTM D6420-99 (2004) (where the target compound(s) are those listed in Section 1.1 of ASTM D6420-99, and the target concentration is between 150 parts per billion by volume and 100 ppmv) and ASTM D2504-67, 77, or 88 (Reapproved 1993) (incorporated by reference-see §60.17) shall be used to determine the concentration of sample component "i."
- (6) ASTM D2382-76 or 88 or D4809-95 (incorporated by reference-see §60.17) shall be used to determine the net heat of combustion of component "i" if published values are not available or cannot be calculated.
- (7) Method 2, 2A, 2C, or 2D of appendix A-7 of this part, as appropriate, shall be used to determine the actual exit velocity of a flare. If needed, the unobstructed (free) cross-sectional area of the flare tip shall be used.
- (h) The owner or operator shall determine compliance with §60.483-1a or §60.483-2a as follows:

- (1) The percent of valves leaking shall be determined using the following equation:

$$\%V_L = (V_L / V_T) * 100$$

Where:

%V_L = Percent leaking valves.

V_L = Number of valves found leaking.

V_T = The sum of the total number of valves monitored.

- (2) The total number of valves monitored shall include difficult-to-monitor and unsafe-to-monitor valves only during the monitoring period in which those valves are monitored.
- (3) The number of valves leaking shall include valves for which repair has been delayed.
- (4) Any new valve that is not monitored within 30 days of being placed in service shall be included in the number of valves leaking and the total number of valves monitored for the monitoring period in which the valve is placed in service.
- (5) If the process unit has been subdivided in accordance with §60.482-7a(c)(1)(ii), the sum of valves found leaking during a monitoring period includes all subgroups.
- (6) The total number of valves monitored does not include a valve monitored to verify repair.

§ 60.486a Recordkeeping requirements.

- (a) (1) Each owner or operator subject to the provisions of this subpart shall comply with the recordkeeping requirements of this section.

- (2) An owner or operator of more than one affected facility subject to the provisions of this subpart may comply with the recordkeeping requirements for these facilities in one recordkeeping system if the system identifies each record by each facility.
- (3) The owner or operator shall record the information specified in paragraphs (a)(3)(i) through (v) of this section for each monitoring event required by §§60.482–2a, 60.482–3a, 60.482–7a, 60.482–8a, 60.482–11a, and 60.483–2a.
 - (i) Monitoring instrument identification.
 - (ii) Operator identification.
 - (iii) Equipment identification.
 - (iv) Date of monitoring.
 - (v) Instrument reading.
- (b) When each leak is detected as specified in §§60.482–2a, 60.482–3a, 60.482–7a, 60.482–8a, 60.482–11a, and 60.483–2a, the following requirements apply:
 - (1) A weatherproof and readily visible identification, marked with the equipment identification number, shall be attached to the leaking equipment.
 - (2) The identification on a valve may be removed after it has been monitored for 2 successive months as specified in §60.482–7a(c) and no leak has been detected during those 2 months.
 - (3) The identification on a connector may be removed after it has been monitored as specified in §60.482–11a(b)(3)(iv) and no leak has been detected during that monitoring.
 - (4) The identification on equipment, except on a valve or connector, may be removed after it has been repaired.
- (c) When each leak is detected as specified in §§60.482–2a, 60.482–3a, 60.482–7a, 60.482–8a, 60.482–11a, and 60.483–2a, the following information shall be recorded in a log and shall be kept for 2 years in a readily accessible location:
 - (1) The instrument and operator identification numbers and the equipment identification number, except when indications of liquids dripping from a pump are designated as a leak.
 - (2) The date the leak was detected and the dates of each attempt to repair the leak.
 - (3) Repair methods applied in each attempt to repair the leak.
 - (4) Maximum instrument reading measured by Method 21 of appendix A–7 of this part at the time the leak is successfully repaired or determined to be nonrepairable, except when a pump is repaired by eliminating indications of liquids dripping.
 - (5) “Repair delayed” and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak.
 - (6) The signature of the owner or operator (or designate) whose decision it was that repair could not be effected without a process shutdown.

- (7) The expected date of successful repair of the leak if a leak is not repaired within 15 days.
 - (8) Dates of process unit shutdowns that occur while the equipment is unrepaired.
 - (9) The date of successful repair of the leak.
- (d) The following information pertaining to the design requirements for closed vent systems and control devices described in §60.482–10a shall be recorded and kept in a readily accessible location:
- (1) Detailed schematics, design specifications, and piping and instrumentation diagrams.
 - (2) The dates and descriptions of any changes in the design specifications.
 - (3) A description of the parameter or parameters monitored, as required in §60.482–10a(e), to ensure that control devices are operated and maintained in conformance with their design and an explanation of why that parameter (or parameters) was selected for the monitoring.
 - (4) Periods when the closed vent systems and control devices required in §§60.482–2a, 60.482–3a, 60.482–4a, and 60.482–5a are not operated as designed, including periods when a flare pilot light does not have a flame.
 - (5) Dates of startups and shutdowns of the closed vent systems and control devices required in §§60.482–2a, 60.482–3a, 60.482–4a, and 60.482–5a.
- (e) The following information pertaining to all equipment subject to the requirements in §§60.482–1a to 60.482–11a shall be recorded in a log that is kept in a readily accessible location:
- (1) A list of identification numbers for equipment subject to the requirements of this subpart.
 - (2)
 - (i) A list of identification numbers for equipment that are designated for no detectable emissions under the provisions of §§60.482–2a(e), 60.482–3a(i), and 60.482–7a(f).
 - (ii) The designation of equipment as subject to the requirements of §60.482–2a(e), §60.482–3a(i), or §60.482–7a(f) shall be signed by the owner or operator. Alternatively, the owner or operator may establish a mechanism with their permitting authority that satisfies this requirement.
 - (3) A list of equipment identification numbers for pressure relief devices required to comply with §60.482–4a.
 - (4)
 - (i) The dates of each compliance test as required in §§60.482–2a(e), 60.482–3a(i), 60.482–4a, and 60.482–7a(f).
 - (ii) The background level measured during each compliance test.
 - (iii) The maximum instrument reading measured at the equipment during each compliance test.
 - (5) A list of identification numbers for equipment in vacuum service.
 - (6) A list of identification numbers for equipment that the owner or operator designates as operating in VOC service less than 300 hr/yr in accordance with §60.482–1a(e), a description of the conditions under which the equipment is in VOC service, and rationale supporting the designation that it is in VOC service less than 300 hr/yr.

- (7) The date and results of the weekly visual inspection for indications of liquids dripping from pumps in light liquid service.
- (8) Records of the information specified in paragraphs (e)(8)(i) through (vi) of this section for monitoring instrument calibrations conducted according to sections 8.1.2 and 10 of Method 21 of appendix A-7 of this part and §60.485a(b).
 - (i) Date of calibration and initials of operator performing the calibration.
 - (ii) Calibration gas cylinder identification, certification date, and certified concentration.
 - (iii) Instrument scale(s) used.
 - (iv) A description of any corrective action taken if the meter readout could not be adjusted to correspond to the calibration gas value in accordance with section 10.1 of Method 21 of appendix A-7 of this part.
 - (v) Results of each calibration drift assessment required by §60.485a(b)(2) (i.e., instrument reading for calibration at end of monitoring day and the calculated percent difference from the initial calibration value).
 - (vi) If an owner or operator makes their own calibration gas, a description of the procedure used.
- (9) The connector monitoring schedule for each process unit as specified in §60.482-11a(b)(3)(v).
- (10) Records of each release from a pressure relief device subject to §60.482-4a.
- (g) The following information shall be recorded for valves complying with §60.483-2a:
 - (1) A schedule of monitoring.
 - (2) The percent of valves found leaking during each monitoring period.
- (h) The following information shall be recorded in a log that is kept in a readily accessible location:
 - (1) Design criterion required in §§60.482-2a(d)(5) and 60.482-3a(e)(2) and explanation of the design criterion; and
 - (2) Any changes to this criterion and the reasons for the changes.
- (i) The following information shall be recorded in a log that is kept in a readily accessible location for use in determining exemptions as provided in §60.480a(d):
 - (1) An analysis demonstrating the design capacity of the affected facility,
 - (2) A statement listing the feed or raw materials and products from the affected facilities and an analysis demonstrating whether these chemicals are heavy liquids or beverage alcohol, and
 - (3) An analysis demonstrating that equipment is not in VOC service.
- (j) Information and data used to demonstrate that a piece of equipment is not in VOC service shall be recorded in a log that is kept in a readily accessible location.

(k) The provisions of §60.7(b) and (d) do not apply to affected facilities subject to this subpart.

§ 60.487a Reporting requirements.

- (a) Each owner or operator subject to the provisions of this subpart shall submit semiannual reports to the Administrator beginning 6 months after the initial startup date.
- (b) The initial semiannual report to the Administrator shall include the following information:
- (1) Process unit identification.
 - (2) Number of valves subject to the requirements of §60.482–7a, excluding those valves designated for no detectable emissions under the provisions of §60.482–7a(f).
 - (3) Number of pumps subject to the requirements of §60.482–2a, excluding those pumps designated for no detectable emissions under the provisions of §60.482–2a(e) and those pumps complying with §60.482–2a(f).
 - (4) Number of compressors subject to the requirements of §60.482–3a, excluding those compressors designated for no detectable emissions under the provisions of §60.482–3a(i) and those compressors complying with §60.482–3a(h).
 - (5) Number of connectors subject to the requirements of §60.482–11a.
- (c) All semiannual reports to the Administrator shall include the following information, summarized from the information in §60.486a:
- (1) Process unit identification.
 - (2) For each month during the semiannual reporting period,
 - (i) Number of valves for which leaks were detected as described in §60.482–7a(b) or §60.483–2a,
 - (ii) Number of valves for which leaks were not repaired as required in §60.482–7a(d)(1),
 - (iii) Number of pumps for which leaks were detected as described in §60.482–2a(b), (d)(4)(ii)(A) or (B), or (d)(5)(iii),
 - (iv) Number of pumps for which leaks were not repaired as required in §60.482–2a(c)(1) and (d)(6),
 - (v) Number of compressors for which leaks were detected as described in §60.482–3a(f),
 - (vi) Number of compressors for which leaks were not repaired as required in §60.482–3a(g)(1),
 - (vii) Number of connectors for which leaks were detected as described in §60.482–11a(b)
 - (viii) Number of connectors for which leaks were not repaired as required in §60.482–11a(d), and

- (xi) The facts that explain each delay of repair and, where appropriate, why a process unit shutdown was technically infeasible.
- (3) Dates of process unit shutdowns which occurred within the semiannual reporting period.
- (4) Revisions to items reported according to paragraph (b) of this section if changes have occurred since the initial report or subsequent revisions to the initial report.
- (d) An owner or operator electing to comply with the provisions of §§60.483–1a or 60.483–2a shall notify the Administrator of the alternative standard selected 90 days before implementing either of the provisions.
- (e) An owner or operator shall report the results of all performance tests in accordance with §60.8 of the General Provisions. The provisions of §60.8(d) do not apply to affected facilities subject to the provisions of this subpart except that an owner or operator must notify the Administrator of the schedule for the initial performance tests at least 30 days before the initial performance tests.
- (f) The requirements of paragraphs (a) through (c) of this section remain in force until and unless EPA, in delegating enforcement authority to a state under section 111(c) of the CAA, approves reporting requirements or an alternative means of compliance surveillance adopted by such state. In that event, affected sources within the state will be relieved of the obligation to comply with the requirements of paragraphs (a) through (c) of this section, provided that they comply with the requirements established by the state.

§ 60.488a Reconstruction.

For the purposes of this subpart:

- (a) The cost of the following frequently replaced components of the facility shall not be considered in calculating either the “fixed capital cost of the new components” or the “fixed capital costs that would be required to construct a comparable new facility” under §60.15: Pump seals, nuts and bolts, rupture disks, and packings.
- (b) Under §60.15, the “fixed capital cost of new components” includes the fixed capital cost of all depreciable components (except components specified in §60.488a(a)) which are or will be replaced pursuant to all continuous programs of component replacement which are commenced within any 2-year period following the applicability date for the appropriate subpart. (See the “Applicability and designation of affected facility” section of the appropriate subpart.) For purposes of this paragraph, “commenced” means that an owner or operator has undertaken a continuous program of component replacement or that an owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of component replacement.

§ 60.489a List of chemicals produced by affected facilities.

Process units that produce, as intermediates or final products, chemicals listed in §60.489 are covered under this subpart. The applicability date for process units producing one or more of these chemicals is November 8, 2006.

SECTION E.2

**FACILITY OPERATION CONDITIONS
NSPS 40 CFR PART 60, SUBPART Db**

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

- (b) Two (2) natural gas / landfill gas fired boilers, identified as EP-4a and EP-4b, approved for construction in 2007, each with a rated heat input capacity of 145 MMBtu/hr, with emissions venting through stacks S110 and S120, respectively. Under 40 CFR Part 60, Subpart Db, these units are considered affected facilities.

(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 2-7-5(1)]

**E.2.1 General Provisions Relating to New Source Performance Standards [326 IAC 12-1]
[40 CFR Part 60, Subpart A]**

- (a) Pursuant to 40 CFR 60.1, the Permittee shall comply with the provisions of 40 CFR Part 60 Subpart A – General Provisions, which are incorporated by reference as 326 IAC 12-1 for natural gas fired boiler EP-4a and natural gas fired boiler EP-4b, except as otherwise specified in 40 CFR Part 60, Subpart Db.

- (b) Pursuant to 40 CFR 60.19, the Permittee shall submit all required notifications and reports to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue, MC61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

**E.2.2 Standard of Performance for Industrial-Commercial-Institutional Steam Generating Units
Requirements [40 CFR Part 60, Subpart Db] [326 IAC 12]**

Pursuant to 40 CFR Part 60, Subpart Db, the Permittee shall comply with the provisions of Standard of Performance for Industrial-Commercial-Institutional Steam Generating Units, which are incorporated by reference as 326 IAC 12, for two (2) natural gas / landfill gas fired boilers, identified as EP-4a and EP-4b, as specified as follows:

Title 40: Protection of Environment

**Subpart Db— Standards of Performance for Industrial-Commercial-Institutional Steam
Generating Units**

[Source: 72 FR 32742, June 13, 2007, unless otherwise noted.]

§ 60.40b Applicability and delegation of authority.

- (a) The affected facility to which this subpart applies is each steam generating unit that commences construction, modification, or reconstruction after June 19, 1984, and that has a heat input capacity from fuels combusted in the steam generating unit of greater than 29 megawatts (MW) (100 million British thermal units per hour (MMBtu/hr)).

- (g) In delegating implementation and enforcement authority to a State under section 111(c) of the Clean Air Act, the following authorities shall be retained by the Administrator and not transferred to a State.
- (1) Section 60.44b(f).
 - (2) Section 60.44b(g).
 - (3) Section 60.49b(a)(4).

§ 60.41b Definitions.

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

Annual capacity factor means the ratio between the actual heat input to a steam generating unit from the fuels listed in §60.42b(a), §60.43b(a), or §60.44b(a), as applicable, during a calendar year and the potential heat input to the steam generating unit had it been operated for 8,760 hours during a calendar year at the maximum steady state design heat input capacity. In the case of steam generating units that are rented or leased, the actual heat input shall be determined based on the combined heat input from all operations of the affected facility in a calendar year.

Byproduct/waste means any liquid or gaseous substance produced at chemical manufacturing plants, petroleum refineries, or pulp and paper mills (except natural gas, distillate oil, or residual oil) and combusted in a steam generating unit for heat recovery or for disposal. Gaseous substances with carbon dioxide (CO₂) levels greater than 50 percent or carbon monoxide levels greater than 10 percent are not byproduct/waste for the purpose of this subpart.

Chemical manufacturing plants mean industrial plants that are classified by the Department of Commerce under Standard Industrial Classification (SIC) Code 28.

Coal means all solid fuels classified as anthracite, bituminous, subbituminous, or lignite by the American Society of Testing and Materials in ASTM D388 (incorporated by reference, see §60.17), coal refuse, and petroleum coke. Coal-derived synthetic fuels, including but not limited to solvent refined coal, gasified coal, coal-oil mixtures, coke oven gas, and coal-water mixtures, are also included in this definition for the purposes of this subpart.

Coal refuse means any byproduct of coal mining or coal cleaning operations with an ash content greater than 50 percent, by weight, and a heating value less than 13,900 kJ/kg (6,000 Btu/lb) on a dry basis.

Cogeneration, also known as combined heat and power, means a facility that simultaneously produces both electric (or mechanical) and useful thermal energy from the same primary energy source.

Coke oven gas means the volatile constituents generated in the gaseous exhaust during the carbonization of bituminous coal to form coke.

Combined cycle system means a system in which a separate source, such as a gas turbine, internal combustion engine, kiln, etc., provides exhaust gas to a steam generating unit.

Conventional technology means wet flue gas desulfurization (FGD) technology, dry FGD technology, atmospheric fluidized bed combustion technology, and oil hydrodesulfurization technology.

Distillate oil means fuel oils that contain 0.05 weight percent nitrogen or less and comply with the specifications for fuel oil numbers 1 and 2, as defined by the American Society of Testing and Materials in ASTM D396 (incorporated by reference, see §60.17).

Dry flue gas desulfurization technology means a SO₂ control system that is located downstream of the steam generating unit and removes sulfur oxides from the combustion gases of the steam generating unit by contacting the combustion gases with an alkaline reagent and water, whether introduced separately or as a premixed slurry or solution and forming a dry powder material. This definition includes devices where the dry powder material is subsequently converted to another form. Alkaline slurries or solutions used in dry flue gas desulfurization technology include but are not limited to lime and sodium.

Duct burner means a device that combusts fuel and that is placed in the exhaust duct from another source, such as a stationary gas turbine, internal combustion engine, kiln, etc., to allow the firing of additional fuel to heat the exhaust gases before the exhaust gases enter a steam generating unit.

Emerging technology means any SO₂ control system that is not defined as a conventional technology under this section, and for which the owner or operator of the facility has applied to the Administrator and received approval to operate as an emerging technology under §60.49b(a)(4).

Federally enforceable means all limitations and conditions that are enforceable by the Administrator, including the requirements of 40 CFR parts 60 and 61, requirements within any applicable State Implementation Plan, and any permit requirements established under 40 CFR 52.21 or under 40 CFR 51.18 and 51.24.

Fluidized bed combustion technology means combustion of fuel in a bed or series of beds (including but not limited to bubbling bed units and circulating bed units) of limestone aggregate (or other sorbent materials) in which these materials are forced upward by the flow of combustion air and the gaseous products of combustion.

Fuel pretreatment means a process that removes a portion of the sulfur in a fuel before combustion of the fuel in a steam generating unit.

Full capacity means operation of the steam generating unit at 90 percent or more of the maximum steady-state design heat input capacity.

Gaseous fuel means any fuel that is present as a gas at ISO conditions.

Gross output means the gross useful work performed by the steam generated. For units generating only electricity, the gross useful work performed is the gross electrical output from the turbine/generator set. For cogeneration units, the gross useful work performed is the gross electrical or mechanical output plus 75 percent of the useful thermal output measured relative to ISO conditions that is not used to generate additional electrical or mechanical output (i.e., steam delivered to an industrial process).

Heat input means heat derived from combustion of fuel in a steam generating unit and does not include the heat derived from preheated combustion air, recirculated flue gases, or exhaust gases from other sources, such as gas turbines, internal combustion engines, kilns, etc.

Heat release rate means the steam generating unit design heat input capacity (in MW or Btu/hr) divided by the furnace volume (in cubic meters or cubic feet); the furnace volume is that volume bounded by the front furnace wall where the burner is located, the furnace side waterwall, and extending to the level just below or in front of the first row of convection pass tubes.

Heat transfer medium means any material that is used to transfer heat from one point to another point.

High heat release rate means a heat release rate greater than 730,000 J/sec-m³ (70,000 Btu/hr-ft³).

ISO Conditions means a temperature of 288 Kelvin, a relative humidity of 60 percent, and a pressure of 101.3 kilopascals.

Lignite means a type of coal classified as lignite A or lignite B by the American Society of Testing and Materials in ASTM D388 (incorporated by reference, see §60.17).

Low heat release rate means a heat release rate of $730,000 \text{ J/sec-m}^3$ (70,000 Btu/hr-ft³) or less.

Mass-feed stoker steam generating unit means a steam generating unit where solid fuel is introduced directly into a retort or is fed directly onto a grate where it is combusted.

Maximum heat input capacity means the ability of a steam generating unit to combust a stated maximum amount of fuel on a steady state basis, as determined by the physical design and characteristics of the steam generating unit.

Municipal-type solid waste means refuse, more than 50 percent of which is waste consisting of a mixture of paper, wood, yard wastes, food wastes, plastics, leather, rubber, and other combustible materials, and noncombustible materials such as glass and rock.

Natural gas means:

- (1) A naturally occurring mixture of hydrocarbon and nonhydrocarbon gases found in geologic formations beneath the earth's surface, of which the principal constituent is methane; or
- (2) liquefied petroleum gas, as defined by the American Society for Testing and Materials in ASTM D1835 (incorporated by reference, see §60.17).

Noncontinental area means the State of Hawaii, the Virgin Islands, Guam, American Samoa, the Commonwealth of Puerto Rico, or the Northern Mariana Islands.

Oil means crude oil or petroleum or a liquid fuel derived from crude oil or petroleum, including distillate and residual oil.

Petroleum refinery means industrial plants as classified by the Department of Commerce under Standard Industrial Classification (SIC) Code 29.

Potential sulfur dioxide emission rate means the theoretical SO₂ emissions (nanograms per joule (ng/J) or lb/MMBtu heat input) that would result from combusting fuel in an uncleaned state and without using emission control systems.

Process heater means a device that is primarily used to heat a material to initiate or promote a chemical reaction in which the material participates as a reactant or catalyst.

Pulp and paper mills means industrial plants that are classified by the Department of Commerce under North American Industry Classification System (NAICS) Code 322 or Standard Industrial Classification (SIC) Code 26.

Pulverized coal-fired steam generating unit means a steam generating unit in which pulverized coal is introduced into an air stream that carries the coal to the combustion chamber of the steam generating unit where it is fired in suspension. This includes both conventional pulverized coal-fired and micropulverized coal-fired steam generating units. Residual oil means crude oil, fuel oil numbers 1 and 2 that have a nitrogen content greater than 0.05 weight percent, and all fuel oil numbers 4, 5 and 6, as defined by the American Society of Testing and Materials in ASTM D396 (incorporated by reference, see §60.17).

Spreader stoker steam generating unit means a steam generating unit in which solid fuel is introduced to the combustion zone by a mechanism that throws the fuel onto a grate from above. Combustion takes place both in suspension and on the grate.

Steam generating unit means a device that combusts any fuel or byproduct/waste and produces steam or heats water or any other heat transfer medium. This term includes any municipal-type solid waste incinerator with a heat recovery steam generating unit or any steam generating unit that combusts fuel and is part of a cogeneration system or a combined cycle system. This term does not include process heaters as they are defined in this subpart.

Steam generating unit operating day means a 24-hour period between 12:00 midnight and the following midnight during which any fuel is combusted at any time in the steam generating unit. It is not necessary for fuel to be combusted continuously for the entire 24-hour period.

Very low sulfur oil means for units constructed, reconstructed, or modified on or before February 28, 2005, an oil that contains no more than 0.5 weight percent sulfur or that, when combusted without SO₂ emission control, has a SO₂ emission rate equal to or less than 215 ng/J (0.5 lb/MMBtu) heat input. For units constructed, reconstructed, or modified after February 28, 2005, very low sulfur oil means an oil that contains no more than 0.3 weight percent sulfur or that, when combusted without SO₂ emission control, has a SO₂ emission rate equal to or less than 140 ng/J (0.32 lb/MMBtu) heat input.

Wet flue gas desulfurization technology means a SO₂ control system that is located downstream of the steam generating unit and removes sulfur oxides from the combustion gases of the steam generating unit by contacting the combustion gas with an alkaline slurry or solution and forming a liquid material. This definition applies to devices where the aqueous liquid material product of this contact is subsequently converted to other forms. Alkaline reagents used in wet flue gas desulfurization technology include, but are not limited to, lime, limestone, and sodium.

Wet scrubber system means any emission control device that mixes an aqueous stream or slurry with the exhaust gases from a steam generating unit to control emissions of PM or SO₂.

Wood means wood, wood residue, bark, or any derivative fuel or residue thereof, in any form, including, but not limited to, sawdust, sanderdust, wood chips, scraps, slabs, millings, shavings, and processed pellets made from wood or other forest residues.

§ 60.44b Standard for nitrogen oxides (NO_x).

- (a) Except as provided under paragraphs (k) and (l) of this section, on and after the date on which the initial performance test is completed or is required to be completed under §60.8, whichever date comes first, no owner or operator of an affected facility that is subject to the provisions of this section and that combusts only coal, oil, or natural gas shall cause to be discharged into the atmosphere from that affected facility any gases that contain NO_x (expressed as NO₂) in excess of the following emission limits:

Fuel/steam generating unit type	Nitrogen oxide emission limits (expressed as NO ₂) heat input	
	ng/J	lb/MMBtu
(1) Natural gas and distillate oil, except (4):		
(i) Low heat release rate	43	0.10
(ii) High heat release rate	86	0.20

- (h) For purposes of paragraph (i) of this section, the NO_x standards under this section apply at all times including periods of startup, shutdown, or malfunction.
- (i) Except as provided under paragraph (j) of this section, compliance with the emission limits under this section is determined on a 30-day rolling average basis.

§ 60.46b Compliance and performance test methods and procedures for particulate matter and nitrogen oxides.

- (a) The PM emission standards and opacity limits under §60.43b apply at all times except during periods of startup, shutdown, or malfunction. The NO_x emission standards under §60.44b apply at all times.
- (c) Compliance with the NO_x emission standards under §60.44b shall be determined through performance testing under paragraph (e) or (f), or under paragraphs (g) and (h) of this section, as applicable.
- (e) To determine compliance with the emission limits for NO_x required under §60.44b, the owner or operator of an affected facility shall conduct the performance test as required under §60.8 using the continuous system for monitoring NO_x under §60.48(b).
 - (1) For the initial compliance test, NO_x from the steam generating unit are monitored for 30 successive steam generating unit operating days and the 30-day average emission rate is used to determine compliance with the NO_x emission standards under §60.44b. The 30-day average emission rate is calculated as the average of all hourly emissions data recorded by the monitoring system during the 30-day test period.

§ 60.48b Emission monitoring for particulate matter and nitrogen oxides.

- (b) Except as provided under paragraphs (g), (h), and (i) of this section, the owner or operator of an affected facility subject to a NO_x standard under §60.44b shall comply with either paragraphs (b)(1) or (b)(2) of this section.
 - (1) Install, calibrate, maintain, and operate CEMS for measuring NO_x and O₂ (or CO₂) emissions discharged to the atmosphere, and shall record the output of the system; or
- (c) The CEMS required under paragraph (b) of this section shall be operated and data recorded during all periods of operation of the affected facility except for CEMS breakdowns and repairs. Data is recorded during calibration checks, and zero and span adjustments.
- (d) The 1-hour average NO_x emission rates measured by the continuous NO_x monitor required by paragraph (b) of this section and required under §60.13(h) shall be expressed in ng/J or lb/MMBtu heat input and shall be used to calculate the average emission rates under §60.44b. The 1-hour averages shall be calculated using the data points required under §60.13(h)(2).
- (e) The procedures under §60.13 shall be followed for installation, evaluation, and operation of the continuous monitoring systems.
 - (2) For affected facilities combusting coal, oil, or natural gas, the span value for NO_x is determined using one of the following procedures:
 - (i) Except as provided under paragraph (e)(2)(ii) of this section, NO_x span values shall be determined as follows:

Fuel	Span values for NO _x (ppm)
Natural gas	500
Oil	500
Coal	1,000
Mixtures	$500(x + y) + 1,000z$

Where:

x = Fraction of total heat input derived from natural gas;

y = Fraction of total heat input derived from oil; and

z = Fraction of total heat input derived from coal.

- (ii) As an alternative to meeting the requirements of paragraph (e)(2)(i) of this section, the owner or operator of an affected facility may elect to use the NO_x span values determined according to section 2.1.2 in appendix A to part 75 of this chapter.
- (3) All span values computed under paragraph (e)(2)(i) of this section for combusting mixtures of regulated fuels are rounded to the nearest 500 ppm. Span values computed under paragraph (e)(2)(ii) of this section shall be rounded off according to section 2.1.2 in appendix A to part 75 of this chapter.
- (f) When NO_x emission data are not obtained because of CEMS breakdowns, repairs, calibration checks and zero and span adjustments, emission data will be obtained by using standby monitoring systems, Method 7 of appendix A of this part, Method 7A of appendix A of this part, or other approved reference methods to provide emission data for a minimum of 75 percent of the operating hours in each steam generating unit operating day, in at least 22 out of 30 successive steam generating unit operating days.

§ 60.49b Reporting and recordkeeping requirements.

- (a) The owner or operator of each affected facility shall submit notification of the date of initial startup, as provided by §60.7. This notification shall include:
 - (1) The design heat input capacity of the affected facility and identification of the fuels to be combusted in the affected facility;
- (b) The owner or operator of each affected facility subject to the SO₂, PM, and/or NO_x emission limits under §§60.42b, 60.43b, and 60.44b shall submit to the Administrator the performance test data from the initial performance test and the performance evaluation of the CEMS using the applicable performance specifications in appendix B of this part. The owner or operator of each affected facility described in §60.44b(j) or §60.44b(k) shall submit to the Administrator the maximum heat input capacity data from the demonstration of the maximum heat input capacity of the affected facility.
- (c) The owner or operator of each affected facility subject to the NO_x standard of §60.44b who seeks to demonstrate compliance with those standards through the monitoring of steam generating unit operating conditions under the provisions of §60.48b(g)(2) shall submit to the Administrator for approval a plan that identifies the operating conditions to be monitored under §60.48b(g)(2) and the records to be maintained under §60.49b(j). This plan shall be submitted to the Administrator for approval within 360 days of the initial startup of the affected facility. If the plan is approved, the owner or operator shall maintain records of predicted nitrogen oxide emission rates and the monitored operating conditions, including steam generating unit load, identified in the plan. The

plan shall:

- (1) Identify the specific operating conditions to be monitored and the relationship between these operating conditions and NO_x emission rates (i.e., ng/J or lbs/MMBtu heat input). Steam generating unit operating conditions include, but are not limited to, the degree of staged combustion (i.e., the ratio of primary air to secondary and/or tertiary air) and the level of excess air (i.e., flue gas O₂ level);
 - (2) Include the data and information that the owner or operator used to identify the relationship between NO_x emission rates and these operating conditions; and
 - (3) Identify how these operating conditions, including steam generating unit load, will be monitored under §60.48b(g) on an hourly basis by the owner or operator during the period of operation of the affected facility; the quality assurance procedures or practices that will be employed to ensure that the data generated by monitoring these operating conditions will be representative and accurate; and the type and format of the records of these operating conditions, including steam generating unit load, that will be maintained by the owner or operator under §60.49b(j).
- (d) The owner or operator of an affected facility shall record and maintain records of the amounts of each fuel combusted during each day and calculate the annual capacity factor individually for coal, distillate oil, residual oil, natural gas, wood, and municipal-type solid waste for the reporting period. The annual capacity factor is determined on a 12-month rolling average basis with a new annual capacity factor calculated at the end of each calendar month.
- (f) For facilities subject to the opacity standard under §60.43b, the owner or operator shall maintain records of opacity.
- (g) Except as provided under paragraph (p) of this section, the owner or operator of an affected facility subject to the NO_x standards under §60.44b shall maintain records of the following information for each steam generating unit operating day:
- (1) Calendar date;
 - (2) The average hourly NO_x emission rates (expressed as NO₂) (ng/J or lb/MMBtu heat input) measured or predicted;
 - (3) The 30-day average NO_x emission rates (ng/J or lb/MMBtu heat input) calculated at the end of each steam generating unit operating day from the measured or predicted hourly nitrogen oxide emission rates for the preceding 30 steam generating unit operating days;
 - (4) Identification of the steam generating unit operating days when the calculated 30-day average NO_x emission rates are in excess of the NO_x emissions standards under §60.44b, with the reasons for such excess emissions as well as a description of corrective actions taken;
 - (5) Identification of the steam generating unit operating days for which pollutant data have not been obtained, including reasons for not obtaining sufficient data and a description of corrective actions taken;
 - (6) Identification of the times when emission data have been excluded from the calculation of average emission rates and the reasons for excluding data;
 - (7) Identification of "F" factor used for calculations, method of determination, and type of fuel combusted;

- (8) Identification of the times when the pollutant concentration exceeded full span of the CEMS;
 - (9) Description of any modifications to the CEMS that could affect the ability of the CEMS to comply with Performance Specification 2 or 3; and
 - (10) Results of daily CEMS drift tests and quarterly accuracy assessments as required under appendix F, Procedure 1 of this part.
- (i) The owner or operator of any affected facility subject to the continuous monitoring requirements for NO_x under §60.48(b) shall submit reports containing the information recorded under paragraph (g) of this section.
- (o) All records required under this section shall be maintained by the owner or operator of the affected facility for a period of 2 years following the date of such record.

**SECTION E.3 FACILITY OPERATION CONDITIONS
NSPS 40 CFR 60, SUBPART Kb**

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

- (c) Other emission units, not regulated by a NESHAP, with PM₁₀, NO_x, and SO₂ emissions less than five (5) pounds per hour or twenty-five (25) pounds per day, CO emissions less than twenty-five (25) pounds per day, VOC emissions less than three (3) pounds per hour or fifteen (15) pounds per day, lead emissions less than six-tenths (0.6) tons per year or three and twenty-nine hundredths (3.29) pounds per day, and emitting greater than one (1) pound per day but less than five (5) pounds per day or one (1) ton per year of a single HAP, or emitting greater than one (1) pound per day but less than twelve and five tenths (12.5) pounds per day or two and five tenths (2.5) ton per year of any combination of HAPs:
- (1) Two (2) denatured ethanol storage tanks, identified as T61 and T62, to be constructed in 2007, each with a maximum capacity of 1,500,000 gallons and an annual throughput of 60.5 million gallons per year, equipped with an internal floating roof and constructed in accordance with 40 CFR Part 60, Subpart Kb.
 - (2) One (1) 200 proof ethanol storage tank, identified as T63, to be constructed in 2007, with a maximum capacity of 200,000 gallons and an annual throughput of 121 million gallons per year, equipped with an internal floating roof and constructed in accordance with 40 CFR Part 60, Subpart Kb.
 - (3) One (1) denaturant (gasoline) storage tank, identified as T64, to be constructed in 2007, with a maximum capacity of 200,000 gallons and an annual throughput of 6.05 million gallons per year, equipped with an internal floating roof and constructed in accordance with 40 CFR Part 60, Subpart Kb.
 - (4) One (1) 190 proof ethanol storage tank, identified as T65, to be constructed in 2007, with a maximum capacity of 200,000 gallons and an annual throughput of 121 million gallons per year, equipped with an internal floating roof and constructed in accordance with 40 CFR Part 60, Subpart Kb.

(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 2-7-5(1)]

**E.3.1 General Provisions Relating to New Source Performance Standards [326 IAC 12-1]
[40 CFR Part 60, Subpart A]**

- (a) Pursuant to 40 CFR 60.1, the Permittee shall comply with the provisions of 40 CFR Part 60 Subpart A – General Provisions, which are incorporated by reference as 326 IAC 12-1 for tanks T61, T62, T63, T64, and T65, except as otherwise specified in 40 CFR Part 60, Subpart Kb.
- (b) Pursuant to 40 CFR 60.19, the Permittee shall submit all required notifications and reports to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue, MC61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

E.3.2 Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) [40 CFR Part 60, Subpart Kb] [326 IAC 12]

Pursuant to 40 CFR Part 60, Subpart Kb, the Permittee shall comply with the provisions of Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels), which are incorporated by reference as 326 IAC 12, for tanks T61, T62, T63, T64, and T65 as follows:

Subpart Kb— Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984

[Source: 52 FR 11429, Apr. 8, 1987, unless otherwise noted.]

§ 60.110b Applicability and designation of affected facility.

- (a) Except as provided in paragraph (b) of this section, the affected facility to which this subpart applies is each storage vessel with a capacity greater than or equal to 75 cubic meters (m^3) that is used to store volatile organic liquids (VOL) for which construction, reconstruction, or modification is commenced after July 23, 1984.
- (b) This subpart does not apply to storage vessels with a capacity greater than or equal to 151 m^3 storing a liquid with a maximum true vapor pressure less than 3.5 kilopascals (kPa) or with a capacity greater than or equal to 75 m^3 but less than 151 m^3 storing a liquid with a maximum true vapor pressure less than 15.0 kPa.
- (c) [Reserved]

[52 FR 11429, Apr. 8, 1987, as amended at 54 FR 32973, Aug. 11, 1989; 65 FR 78275, Dec. 14, 2000; 68 FR 59332, Oct. 15, 2003]

§ 60.111b Definitions.

Terms used in this subpart are defined in the Act, in subpart A of this part, or in this subpart as follows:

Bulk gasoline plant means any gasoline distribution facility that has a gasoline throughput less than or equal to 75,700 liters per day. Gasoline throughput shall be the maximum calculated design throughput as may be limited by compliance with an enforceable condition under Federal requirement or Federal, State or local law, and discoverable by the Administrator and any other person.

Condensate means hydrocarbon liquid separated from natural gas that condenses due to changes in the temperature or pressure, or both, and remains liquid at standard conditions.

Custody transfer means the transfer of produced petroleum and/or condensate, after processing and/or treatment in the producing operations, from storage vessels or automatic transfer facilities to pipelines or any other forms of transportation.

Fill means the introduction of VOL into a storage vessel but not necessarily to complete capacity.

Gasoline service station means any site where gasoline is dispensed to motor vehicle fuel tanks from stationary storage tanks.

Maximum true vapor pressure means the equilibrium partial pressure exerted by the volatile organic compounds (as defined in 40 CFR 51.100) in the stored VOL at the temperature equal to the highest calendar-month average of the VOL storage temperature for VOL's stored above or below the ambient temperature or at the local maximum monthly average temperature as reported by the National Weather Service for VOL's stored at the ambient temperature, as determined:

- (1) In accordance with methods described in American Petroleum institute Bulletin 2517, Evaporation Loss From External Floating Roof Tanks, (incorporated by reference—see §60.17); or
- (2) As obtained from standard reference texts; or
- (3) As determined by ASTM D2879–83, 96, or 97 (incorporated by reference—see §60.17);
- (4) Any other method approved by the Administrator.

Petroleum means the crude oil removed from the earth and the oils derived from tar sands, shale, and coal.

Petroleum liquids means petroleum, condensate, and any finished or intermediate products manufactured in a petroleum refinery.

Process tank means a tank that is used within a process (including a solvent or raw material recovery process) to collect material discharged from a feedstock storage vessel or equipment within the process before the material is transferred to other equipment within the process, to a product or by-product storage vessel, or to a vessel used to store recovered solvent or raw material. In many process tanks, unit operations such as reactions and blending are conducted. Other process tanks, such as surge control vessels and bottoms receivers, however, may not involve unit operations.

Reid vapor pressure means the absolute vapor pressure of volatile crude oil and volatile nonviscous petroleum liquids except liquified petroleum gases, as determined by ASTM D323–82 or 94 (incorporated by reference—see §60.17).

Storage vessel means each tank, reservoir, or container used for the storage of volatile organic liquids but does not include:

- (1) Frames, housing, auxiliary supports, or other components that are not directly involved in the containment of liquids or vapors;
- (2) Subsurface caverns or porous rock reservoirs; or
- (3) Process tanks.

Volatile organic liquid (VOL) means any organic liquid which can emit volatile organic compounds (as defined in 40 CFR 51.100) into the atmosphere.

Waste means any liquid resulting from industrial, commercial, mining or agricultural operations, or from community activities that is discarded or is being accumulated, stored, or physically, chemically, or biologically treated prior to being discarded or recycled.

[52 FR 11429, Apr. 8, 1987, as amended at 54 FR 32973, Aug. 11, 1989; 65 FR 61756, Oct. 17, 2000; 68 FR 59333, Oct. 15, 2003]

§ 60.112b Standard for volatile organic compounds (VOC).

- (a) The owner or operator of each storage vessel either with a design capacity greater than or equal to 151 m³ containing a VOL that, as stored, has a maximum true vapor pressure equal to or greater than 5.2 kPa but less than 76.6 kPa or with a design capacity greater than or equal to 75 m³ but less than 151 m³ containing a VOL that, as stored, has a maximum true vapor pressure equal to or greater than 27.6 kPa but less than 76.6 kPa, shall equip each storage vessel with one of the following:

- (1) A fixed roof in combination with an internal floating roof meeting the following specifications:
 - (i) The internal floating roof shall rest or float on the liquid surface (but not necessarily in complete contact with it) inside a storage vessel that has a fixed roof. The internal floating roof shall be floating on the liquid surface at all times, except during initial fill and during those intervals when the storage vessel is completely emptied or subsequently emptied and refilled. When the roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be accomplished as rapidly as possible.
 - (ii) Each internal floating roof shall be equipped with one of the following closure devices between the wall of the storage vessel and the edge of the internal floating roof:
 - (A) A foam or liquid-filled seal mounted in contact with the liquid (liquid-mounted seal). A liquid-mounted seal means a foam- or liquid-filled seal mounted in contact with the liquid between the wall of the storage vessel and the floating roof continuously around the circumference of the tank.
 - (B) Two seals mounted one above the other so that each forms a continuous closure that completely covers the space between the wall of the storage vessel and the edge of the internal floating roof. The lower seal may be vapor-mounted, but both must be continuous.
 - (C) A mechanical shoe seal. A mechanical shoe seal is a metal sheet held vertically against the wall of the storage vessel by springs or weighted levers and is connected by braces to the floating roof. A flexible coated fabric (envelope) spans the annular space between the metal sheet and the floating roof.
 - (iii) Each opening in a noncontact internal floating roof except for automatic bleeder vents (vacuum breaker vents) and the rim space vents is to provide a projection below the liquid surface.
 - (iv) Each opening in the internal floating roof except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains is to be equipped with a cover or lid which is to be maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use. The cover or lid shall be equipped with a gasket. Covers on each access hatch and automatic gauge float well shall be bolted except when they are in use.
 - (v) Automatic bleeder vents shall be equipped with a gasket and are to be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports.
 - (vi) Rim space vents shall be equipped with a gasket and are to be set to open only when the internal floating roof is not floating or at the manufacturer's recommended setting.
 - (vii) Each penetration of the internal floating roof for the purpose of sampling shall be a sample well. The sample well shall have a slit fabric cover that covers at least 90 percent of the opening.
 - (viii) Each penetration of the internal floating roof that allows for passage of a column supporting the fixed roof shall have a flexible fabric sleeve seal or a gasketed

sliding cover.

- (ix) Each penetration of the internal floating roof that allows for passage of a ladder shall have a gasketed sliding cover.

[52 FR 11429, Apr. 8, 1987, as amended at 62 FR 52641, Oct. 8, 1997]

§ 60.113b Testing and procedures.

The owner or operator of each storage vessel as specified in §60.112b(a) shall meet the requirements of paragraph (a), (b), or (c) of this section. The applicable paragraph for a particular storage vessel depends on the control equipment installed to meet the requirements of §60.112b.

- (a) After installing the control equipment required to meet §60.112b(a)(1) (permanently affixed roof and internal floating roof), each owner or operator shall:
 - (1) Visually inspect the internal floating roof, the primary seal, and the secondary seal (if one is in service), prior to filling the storage vessel with VOL. If there are holes, tears, or other openings in the primary seal, the secondary seal, or the seal fabric or defects in the internal floating roof, or both, the owner or operator shall repair the items before filling the storage vessel.
 - (2) For Vessels equipped with a liquid-mounted or mechanical shoe primary seal, visually inspect the internal floating roof and the primary seal or the secondary seal (if one is in service) through manholes and roof hatches on the fixed roof at least once every 12 months after initial fill. If the internal floating roof is not resting on the surface of the VOL inside the storage vessel, or there is liquid accumulated on the roof, or the seal is detached, or there are holes or tears in the seal fabric, the owner or operator shall repair the items or empty and remove the storage vessel from service within 45 days. If a failure that is detected during inspections required in this paragraph cannot be repaired within 45 days and if the vessel cannot be emptied within 45 days, a 30-day extension may be requested from the Administrator in the inspection report required in §60.115b(a)(3). Such a request for an extension must document that alternate storage capacity is unavailable and specify a schedule of actions the company will take that will assure that the control equipment will be repaired or the vessel will be emptied as soon as possible.
 - (3) For vessels equipped with a double-seal system as specified in §60.112b(a)(1)(ii)(B):
 - (i) Visually inspect the vessel as specified in paragraph (a)(4) of this section at least every 5 years; or
 - (ii) Visually inspect the vessel as specified in paragraph (a)(2) of this section.
 - (4) Visually inspect the internal floating roof, the primary seal, the secondary seal (if one is in service), gaskets, slotted membranes and sleeve seals (if any) each time the storage vessel is emptied and degassed. If the internal floating roof has defects, the primary seal has holes, tears, or other openings in the seal or the seal fabric, or the secondary seal has holes, tears, or other openings in the seal or the seal fabric, or the gaskets no longer close off the liquid surfaces from the atmosphere, or the slotted membrane has more than 10 percent open area, the owner or operator shall repair the items as necessary so that none of the conditions specified in this paragraph exist before refilling the storage vessel with VOL. In no event shall inspections conducted in accordance with this provision occur at intervals greater than 10 years in the case of vessels conducting the annual visual inspection as specified in paragraphs (a)(2) and (a)(3)(ii) of this section and at intervals no greater than 5 years in the case of vessels specified in paragraph (a)(3)(i) of this section.

- (5) Notify the Administrator in writing at least 30 days prior to the filling or refilling of each storage vessel for which an inspection is required by paragraphs (a)(1) and (a)(4) of this section to afford the Administrator the opportunity to have an observer present. If the inspection required by paragraph (a)(4) of this section is not planned and the owner or operator could not have known about the inspection 30 days in advance or refilling the tank, the owner or operator shall notify the Administrator at least 7 days prior to the refilling of the storage vessel. Notification shall be made by telephone immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be made in writing and sent by express mail so that it is received by the Administrator at least 7 days prior to the refilling.

[52 FR 11429, Apr. 8, 1987, as amended at 54 FR 32973, Aug. 11, 1989]

§ 60.115b Reporting and recordkeeping requirements.

The owner or operator of each storage vessel as specified in §60.112b(a) shall keep records and furnish reports as required by paragraphs (a), (b), or (c) of this section depending upon the control equipment installed to meet the requirements of §60.112b. The owner or operator shall keep copies of all reports and records required by this section, except for the record required by (c)(1), for at least 2 years. The record required by (c)(1) will be kept for the life of the control equipment.

- (a) After installing control equipment in accordance with §60.112b(a)(1) (fixed roof and internal floating roof), the owner or operator shall meet the following requirements.
 - (1) Furnish the Administrator with a report that describes the control equipment and certifies that the control equipment meets the specifications of §60.112b(a)(1) and §60.113b(a)(1). This report shall be an attachment to the notification required by §60.7(a)(3).
 - (2) Keep a record of each inspection performed as required by §60.113b (a)(1), (a)(2), (a)(3), and (a)(4). Each record shall identify the storage vessel on which the inspection was performed and shall contain the date the vessel was inspected and the observed condition of each component of the control equipment (seals, internal floating roof, and fittings).
 - (3) If any of the conditions described in §60.113b(a)(2) are detected during the annual visual inspection required by §60.113b(a)(2), a report shall be furnished to the Administrator within 30 days of the inspection. Each report shall identify the storage vessel, the nature of the defects, and the date the storage vessel was emptied or the nature of and date the repair was made.
 - (4) After each inspection required by §60.113b(a)(3) that finds holes or tears in the seal or seal fabric, or defects in the internal floating roof, or other control equipment defects listed in §60.113b(a)(3)(ii), a report shall be furnished to the Administrator within 30 days of the inspection. The report shall identify the storage vessel and the reason it did not meet the specifications of §61.112b(a)(1) or §60.113b(a)(3) and list each repair made.

§ 60.116b Monitoring of operations.

- (a) The owner or operator shall keep copies of all records required by this section, except for the record required by paragraph (b) of this section, for at least 2 years. The record required by paragraph (b) of this section will be kept for the life of the source.

- (b) The owner or operator of each storage vessel as specified in §60.110b(a) shall keep readily accessible records showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel.
- (c) Except as provided in paragraphs (f) and (g) of this section, the owner or operator of each storage vessel either with a design capacity greater than or equal to 151 m³ storing a liquid with a maximum true vapor pressure greater than or equal to 3.5 kPa or with a design capacity greater than or equal to 75 m³ but less than 151 m³ storing a liquid with a maximum true vapor pressure greater than or equal to 15.0 kPa shall maintain a record of the VOL stored, the period of storage, and the maximum true vapor pressure of that VOL during the respective storage period.
- (d) Except as provided in paragraph (g) of this section, the owner or operator of each storage vessel either with a design capacity greater than or equal to 151 m³ storing a liquid with a maximum true vapor pressure that is normally less than 5.2 kPa or with a design capacity greater than or equal to 75 m³ but less than 151 m³ storing a liquid with a maximum true vapor pressure that is normally less than 27.6 kPa shall notify the Administrator within 30 days when the maximum true vapor pressure of the liquid exceeds the respective maximum true vapor pressure values for each volume range.
- (e) Available data on the storage temperature may be used to determine the maximum true vapor pressure as determined below.
 - (1) For vessels operated above or below ambient temperatures, the maximum true vapor pressure is calculated based upon the highest expected calendar-month average of the storage temperature. For vessels operated at ambient temperatures, the maximum true vapor pressure is calculated based upon the maximum local monthly average ambient temperature as reported by the National Weather Service.
 - (2) For crude oil or refined petroleum products the vapor pressure may be obtained by the following:
 - (i) Available data on the Reid vapor pressure and the maximum expected storage temperature based on the highest expected calendar-month average temperature of the stored product may be used to determine the maximum true vapor pressure from nomographs contained in API Bulletin 2517 (incorporated by reference—see §60.17), unless the Administrator specifically requests that the liquid be sampled, the actual storage temperature determined, and the Reid vapor pressure determined from the sample(s).
 - (ii) The true vapor pressure of each type of crude oil with a Reid vapor pressure less than 13.8 kPa or with physical properties that preclude determination by the recommended method is to be determined from available data and recorded if the estimated maximum true vapor pressure is greater than 3.5 kPa.
 - (3) For other liquids, the vapor pressure:
 - (i) May be obtained from standard reference texts, or
 - (ii) Determined by ASTM D2879–83, 96, or 97 (incorporated by reference—see §60.17); or
 - (iii) Measured by an appropriate method approved by the Administrator; or
 - (iv) Calculated by an appropriate method approved by the Administrator.

§ 60.117b Delegation of authority.

- (a) In delegating implementation and enforcement authority to a State under section 111(c) of the Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.
- (b) Authorities which will not be delegated to States: §§60.111b(f)(4), 60.114b, 60.116b(e)(3)(iii), 60.116b(e)(3)(iv), and 60.116b(f)(2)(iii).

[52 FR 11429, Apr. 8, 1987, as amended at 52 FR 22780, June 16, 1987]

**SECTION E.4 FACILITY OPERATION CONDITIONS
NSPS 40 CFR PART 60, SUBPART IIII**

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

- (d) One (1) emergency diesel powered fire pump, identified as EP-16, to be constructed in 2007, with a maximum power rating of 300 HP, with uncontrolled emissions, and exhausting to stack S100. Under 40 CFR Part 60, Subpart IIII, the emergency diesel powered fire pump is considered to be an effected unit.

(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 2-7-5(1)]

**E.4.1 General Provisions Relating to New Source Performance Standards [326 IAC 12-1]
[40 CFR Part 60, Subpart A]**

- (a) Pursuant to 40 CFR 60.1, the Permittee shall comply with the provisions of 40 CFR Part 60 Subpart A – General Provisions, which are incorporated by reference as 326 IAC 12-1 for the emergency diesel powered fire pump EP-16, except as otherwise specified in 40 CFR Part 60, Subpart IIII.

- (b) Pursuant to 40 CFR 60.19, the Permittee shall submit all required notifications and reports to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue, MC61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

**E.4.2 Standards of Performance for Stationary Compression Ignition Internal Combustion Engines
[40 CFR Part 60, Subpart IIII] [326 IAC 12]**

Pursuant to 40 CFR Part 60, Subpart IIII, the Permittee shall comply with the provisions of Standards of Performance for Stationary Compression Ignition Internal Combustion Engines, which are incorporated by reference as 326 IAC 12, for the emergency diesel powered fire pump (EP-16) as follows:

Title 40: Protection of Environment

Subpart IIII— Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

[Source: 71 FR 39172, July 11, 2006, unless otherwise noted.]

What This Subpart Covers

§ 60.4200 Am I subject to this subpart?

- (a) The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary compression ignition (CI) internal combustion engines (ICE) as specified in paragraphs (a)(1) through (3) of this section. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator.

- (2) Owners and operators of stationary CI ICE that commence construction after July 11, 2005 where the stationary CI ICE are:
 - (ii) Manufactured as a certified National Fire Protection Association (NFPA) fire pump engine after July 1, 2006.
- (3) Owners and operators of stationary CI ICE that modify or reconstruct their stationary CI ICE after July 1, 2006.
- (b) The provisions of this subpart are not applicable to stationary CI ICE being tested at a stationary CI ICE test cell/stand.

Emission Standards for Owners and Operators

§ 60.4205 What emission standards must I meet for emergency engines if I am an owner or operator of a stationary CI internal combustion engine?

- (c) Owners and operators of fire pump engines with a displacement of less than 30 liters per cylinder must comply with the emission standards in table 4 to this subpart, for all pollutants.

§ 60.4206 How long must I meet the emission standards if I am an owner or operator of a stationary CI internal combustion engine?

Owners and operators of stationary CI ICE must operate and maintain stationary CI ICE that achieve the emission standards as required in §§60.4204 and 60.4205 according to the manufacturer's written instructions or procedures developed by the owner or operator that are approved by the engine manufacturer, over the entire life of the engine.

Fuel Requirements for Owners and Operators

§ 60.4207 What fuel requirements must I meet if I am an owner or operator of a stationary CI internal combustion engine subject to this subpart?

- (a) Beginning October 1, 2007, owners and operators of stationary CI ICE subject to this subpart that use diesel fuel must use diesel fuel that meets the requirements of 40 CFR 80.510(a).
- (b) Beginning October 1, 2010, owners and operators of stationary CI ICE subject to this subpart with a displacement of less than 30 liters per cylinder that use diesel fuel must use diesel fuel that meets the requirements of 40 CFR 80.510(b) for nonroad diesel fuel.
- (c) Owners and operators of pre-2011 model year stationary CI ICE subject to this subpart may petition the Administrator for approval to use remaining non-compliant fuel that does not meet the fuel requirements of paragraphs (a) and (b) of this section beyond the dates required for the purpose of using up existing fuel inventories. If approved, the petition will be valid for a period of up to 6 months. If additional time is needed, the owner or operator is required to submit a new petition to the Administrator.

Other Requirements for Owners and Operators

§ 60.4208 What is the deadline for importing or installing stationary CI ICE produced in the previous model year?

- (a) After December 31, 2008, owners and operators may not install stationary CI ICE (excluding fire pump engines) that do not meet the applicable requirements for 2007 model year engines.

- (b) After December 31, 2009, owners and operators may not install stationary CI ICE with a maximum engine power of less than 19 KW (25 HP) (excluding fire pump engines) that do not meet the applicable requirements for 2008 model year engines.
- (c) After December 31, 2014, owners and operators may not install non-emergency stationary CI ICE with a maximum engine power of greater than or equal to 19 KW (25 HP) and less than 56 KW (75 HP) that do not meet the applicable requirements for 2013 model year non-emergency engines.
- (d) After December 31, 2013, owners and operators may not install non-emergency stationary CI ICE with a maximum engine power of greater than or equal to 56 KW (75 HP) and less than 130 KW (175 HP) that do not meet the applicable requirements for 2012 model year non-emergency engines.
- (e) After December 31, 2012, owners and operators may not install non-emergency stationary CI ICE with a maximum engine power of greater than or equal to 130 KW (175 HP), including those above 560 KW (750 HP), that do not meet the applicable requirements for 2011 model year non-emergency engines.
- (f) After December 31, 2016, owners and operators may not install non-emergency stationary CI ICE with a maximum engine power of greater than or equal to 560 KW (750 HP) that do not meet the applicable requirements for 2015 model year non-emergency engines.
- (g) In addition to the requirements specified in §§60.4201, 60.4202, 60.4204, and 60.4205, it is prohibited to import stationary CI ICE with a displacement of less than 30 liters per cylinder that do not meet the applicable requirements specified in paragraphs (a) through (f) of this section after the dates specified in paragraphs (a) through (f) of this section.
- (h) The requirements of this section do not apply to owners or operators of stationary CI ICE that have been modified, reconstructed, and do not apply to engines that were removed from one existing location and reinstalled at a new location.

§ 60.4209 What are the monitoring requirements if I am an owner or operator of a stationary CI internal combustion engine?

If you are an owner or operator, you must meet the monitoring requirements of this section. In addition, you must also meet the monitoring requirements specified in §60.4211.

- (a) If you are an owner or operator of an emergency stationary CI internal combustion engine, you must install a non-resettable hour meter prior to startup of the engine.

Compliance Requirements

§ 60.4211 What are my compliance requirements if I am an owner or operator of a stationary CI internal combustion engine?

- (a) If you are an owner or operator and must comply with the emission standards specified in this subpart, you must operate and maintain the stationary CI internal combustion engine and control device according to the manufacturer's written instructions or procedures developed by the owner or operator that are approved by the engine manufacturer. In addition, owners and operators may only change those settings that are permitted by the manufacturer. You must also meet the requirements of 40 CFR parts 89, 94 and/or 1068, as they apply to you.
- (c) If you are an owner or operator of a 2007 model year and later stationary CI internal combustion engine and must comply with the emission standards specified in §60.4204(b) or §60.4205(b), or if you are an owner or operator of a CI fire pump engine that is manufactured during or after the model year that applies to your fire pump engine power rating in table 3 to this subpart and must

comply with the emission standards specified in §60.4205(c), you must comply by purchasing an engine certified to the emission standards in §60.4204(b), or §60.4205(b) or (c), as applicable, for the same model year and maximum (or in the case of fire pumps, NFPA nameplate) engine power. The engine must be installed and configured according to the manufacturer's specifications.

- (e) Emergency stationary ICE may be operated for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by Federal, State, or local government, the manufacturer, the vendor, or the insurance company associated with the engine. Maintenance checks and readiness testing of such units is limited to 100 hours per year. There is no time limit on the use of emergency stationary ICE in emergency situations. Anyone 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 ICE beyond 100 hours per year. For owners and operators of emergency engines meeting standards under §60.4205 but not §60.4204, any operation other than emergency operation, and maintenance and testing as permitted in this section, is prohibited.

Testing Requirements for Owners and Operators

§ 60.4212 What test methods and other procedures must I use if I am an owner or operator of a stationary CI internal combustion engine with a displacement of less than 30 liters per cylinder?

Owners and operators of stationary CI ICE with a displacement of less than 30 liters per cylinder who conduct performance tests pursuant to this subpart must do so according to paragraphs (a) through (d) of this section.

- (a) The performance test must be conducted according to the in-use testing procedures in 40 CFR part 1039, subpart F.
- (b) Exhaust emissions from stationary CI ICE that are complying with the emission standards for new CI engines in 40 CFR part 1039 must not exceed the not-to-exceed (NTE) standards for the same model year and maximum engine power as required in 40 CFR 1039.101(e) and 40 CFR 1039.102(g)(1), except as specified in 40 CFR 1039.104(d). This requirement starts when NTE requirements take effect for nonroad diesel engines under 40 CFR part 1039.
- (c) Exhaust emissions from stationary CI ICE that are complying with the emission standards for new CI engines in 40 CFR 89.112 or 40 CFR 94.8, as applicable, must not exceed the NTE numerical requirements, rounded to the same number of decimal places as the applicable standard in 40 CFR 89.112 or 40 CFR 94.8, as applicable, determined from the following equation:

$$\text{NTE requirement for each pollutant} = (1.25) \times (\text{STD}) \quad (\text{Eq.1})$$

Where:

STD = The standard specified for that pollutant in 40 CFR 89.112 or 40 CFR 94.8, as applicable.

Alternatively, stationary CI ICE that are complying with the emission standards for new CI engines in 40 CFR 89.112 or 40 CFR 94.8 may follow the testing procedures specified in §60.4213 of this subpart, as appropriate.

- (d) Exhaust emissions from stationary CI ICE that are complying with the emission standards for pre-2007 model year engines in §60.4204(a), §60.4205(a), or §60.4205(c) must not exceed the NTE numerical requirements, rounded to the same number of decimal places as the applicable standard in §60.4204(a), §60.4205(a), or §60.4205(c), determined from the equation in paragraph (c) of this section.

Where:

STD = The standard specified for that pollutant in §60.4204(a), §60.4205(a), or §60.4205(c).

Alternatively, stationary CI ICE that are complying with the emission standards for pre-2007 model year engines in §60.4204(a), §60.4205(a), or §60.4205(c) may follow the testing procedures specified in §60.4213, as appropriate.

Notification, Reports, and Records for Owners and Operators

§ 60.4214 What are my notification, reporting, and recordkeeping requirements if I am an owner or operator of a stationary CI internal combustion engine?

- (b) If the stationary CI internal combustion engine is an emergency stationary internal combustion engine, the owner or operator is not required to submit an initial notification. Starting with the model years in table 5 to this subpart, if the emergency engine does not meet the standards applicable to non-emergency engines in the applicable model year, the owner or operator must keep records of the operation of the engine in emergency and non-emergency service that are recorded through the non-resettable hour meter. The owner must record the time of operation of the engine and the reason the engine was in operation during that time.

General Provisions

§ 60.4218 What parts of the General Provisions apply to me?

Table 8 to this subpart shows which parts of the General Provisions in §§60.1 through 60.19 apply to you.
Definitions

§ 60.4219 What definitions apply to this subpart?

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

Combustion turbine means all equipment, including but not limited to the turbine, the fuel, air, lubrication and exhaust gas systems, control systems (except emissions control equipment), and any ancillary components and sub-components comprising any simple cycle combustion turbine, any regenerative/recuperative cycle combustion turbine, the combustion turbine portion of any cogeneration cycle combustion system, or the combustion turbine portion of any combined cycle steam/electric generating system.

Compression ignition means relating to a type of stationary internal combustion engine that is not a spark ignition engine.

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 number 2 distillate oil.

Diesel particulate filter means an emission control technology that reduces PM emissions by trapping the particles in a flow filter substrate and periodically removes the collected particles by either physical action or by oxidizing (burning off) the particles in a process called regeneration.

Emergency stationary internal combustion engine means any stationary internal combustion engine whose operation is limited to emergency situations and required testing and maintenance. Examples include stationary ICE 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 ICE used to pump water in the case of fire or flood, etc. Stationary CI ICE used to supply power to an electric grid or that supply power as part of a financial arrangement with another entity are not considered to be emergency engines.

Engine manufacturer means the manufacturer of the engine. See the definition of “manufacturer” in this section.

Fire pump engine means an emergency stationary internal combustion engine certified to NFPA requirements that is used to provide power to pump water for fire suppression or protection.

Manufacturer has the meaning given in section 216(1) of the Act. In general, this term includes any person who manufactures a stationary engine for sale in the United States or otherwise introduces a new stationary engine into commerce in the United States. This includes importers who import stationary engines for sale or resale.

Maximum engine power means maximum engine power as defined in 40 CFR 1039.801.

Model year means either:

- (1) The calendar year in which the engine was originally produced, or
- (2) The annual new model production period of the engine manufacturer if it is different than the calendar year. This must include January 1 of the calendar year for which the model year is named. It may not begin before January 2 of the previous calendar year and it must end by December 31 of the named calendar year. For an engine that is converted to a stationary engine after being placed into service as a nonroad or other non-stationary engine, model year means the calendar year or new model production period in which the engine was originally produced.

Other internal combustion engine means any internal combustion engine, except combustion turbines, which is not a reciprocating internal combustion engine or rotary internal combustion engine.

Reciprocating internal combustion engine means any internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work.

Rotary internal combustion engine means any internal combustion engine which uses rotary motion to convert heat energy into mechanical work.

Spark ignition means relating to a gasoline, natural gas, or liquefied petroleum gas 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 internal combustion engine 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 internal combustion engine 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.

Subpart means 40 CFR part 60, subpart IIII.

Useful life means the period during which the engine is designed to properly function in terms of reliability and fuel consumption, without being remanufactured, specified as a number of hours of operation or calendar years, whichever comes first. The values for useful life for stationary CI ICE with a displacement of less than 10 liters per cylinder are given in 40 CFR 1039.101(g). The values for useful

life for stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder are given in 40 CFR 94.9(a).

Tables to Subpart IIII of Part 60

Table 3 to Subpart IIII of Part 60.—Certification Requirements for Stationary Fire Pump Engines

[As stated in §60.4202(d), you must certify new stationary fire pump engines beginning with the following model years:]

Engine power	Starting model year engine manufacturers must certify new stationary fire pump engines according to §60.4202(d)
KW < 75 (HP < 100)	2011
75 ≤ KW < 130 (100 ≤ HP < 175)	2010
130 ≤ KW ≤ 560 (175 ≤ HP ≤ 750)	2009
KW > 560 (HP > 750)	2008

Table 4 to Subpart IIII of Part 60.—Emission Standards for Stationary Fire Pump Engines

[As stated in §§60.4202(d) and 60.4205(c), you must comply with the following emission standards for stationary fire pump engines]

Maximum engine power	Model year(s)	NMHC + NOX	CO	PM
KW < 8 (HP < 11)	2010 and earlier	10.5 (7.8)	8.0 (6.0)	1.0 (0.75)
	2011+	7.5 (5.6)		0.40 (0.30)
8 ≤ KW < 19 (11 ≤ HP < 25)	2010 and earlier	9.5 (7.1)	6.6 (4.9)	0.80 (0.60)
	2011+	7.5 (5.6)		0.40 (0.30)
19 ≤ KW < 37 (25 ≤ HP < 50)	2010 and earlier	9.5 (7.1)	5.5 (4.1)	0.80 (0.60)
	2011+	7.5 (5.6)		0.30 (0.22)
37 ≤ KW < 56 (50 ≤ HP < 75)	2010 and earlier	10.5 (7.8)	5.0 (3.7)	0.80 (0.60)
	2011+ ¹	4.7 (3.5)		0.40 (0.30)
56 ≤ KW < 75 (75 ≤ HP < 100)	2010 and earlier	10.5 (7.8)	5.0 (3.7)	0.80 (0.60)
	2011+ ¹	4.7 (3.5)		0.40 (0.30)
75 ≤ KW < 130	2009 and earlier	10.5 (7.8)	5.0 (3.7)	0.80 (0.60)

Maximum engine power	Model year(s)	NMHC + NOX	CO	PM
(100 ≤ HP < 175)				
	2010+ ²	4.0 (3.0)		0.30 (0.22)
130 ≤ KW < 225 (175 ≤ HP < 300)	2008 and earlier	10.5 (7.8)	3.5 (2.6)	0.54 (0.40)
	2009+ ³	4.0 (3.0)		0.20 (0.15)
225 ≤ KW < 450 (300 ≤ HP < 600)	2008 and earlier	10.5 (7.8)	3.5 (2.6)	0.54 (0.40)
	2009+ ³	4.0 (3.0)		0.20 (0.15)
450 ≤ KW ≤ 560 (600 ≤ HP ≤ 750)	2008 and earlier	10.5 (7.8)	3.5 (2.6)	0.54 (0.40)
	2009+	4.0 (3.0)		0.20 (0.15)
KW > 560 (HP > 750)	2007 and earlier	10.5 (7.8)	3.5 (2.6)	0.54 (0.40)
	2008+	6.4 (4.8)		0.20 (0.15)

¹ For model years 2011–2013, manufacturers, owners and operators of fire pump stationary CI ICE in this engine power category with a rated speed of greater than 2,650 revolutions per minute (rpm) may comply with the emission limitations for 2010 model year engines.

² For model years 2010–2012, manufacturers, owners and operators of fire pump stationary CI ICE in this engine power category with a rated speed of greater than 2,650 rpm may comply with the emission limitations for 2009 model year engines.

³ In model years 2009–2011, manufacturers of fire pump stationary CI ICE in this engine power category with a rated speed of greater than 2,650 rpm may comply with the emission limitations for 2008 model year engines.

Table 5 to Subpart IIII of Part 60.—Labeling and Recordkeeping Requirements for New Stationary Emergency Engines

[You must comply with the labeling requirements in §60.4210(f) and the recordkeeping requirements in §60.4214(b) for new emergency stationary CI ICE beginning in the following model years:]

Engine power	Starting model year
19 ≤ KW < 56 (25 ≤ HP < 75)	2013
56 ≤ KW < 130 (75 ≤ HP < 175)	2012
KW ≥ 130 (HP ≥ 175)	2011

Table 8 to Subpart IIII of Part 60.—Applicability of General Provisions to Subpart IIII

[As stated in §60.4218, you must comply with the following applicable General Provisions:]

General Provisions Citation	Subject of citation	Applies To Subpart	Explanation
§60.1	General applicability of the General Provisions	Yes	
§60.2	Definitions	Yes	Additional terms defined in §60.4219.
§60.3	Units and abbreviations	Yes	
§60.4	Address	Yes	
§60.5	Determination of construction or modification	Yes	
§60.6	Review of plans	Yes	
§60.7	Notification and Recordkeeping	Yes	Except that §60.7 only applies as specified in §60.4214(a).
§60.8	Performance tests	Yes	Except that §60.8 only applies to stationary CI ICE with a displacement of (≥30 liters per cylinder and engines that are not certified.
§60.9	Availability of information	Yes	
§60.10	State Authority	Yes	
§60.11	Compliance with standards and maintenance requirements	No	Requirements are specified in subpart IIII.
§60.12	Circumvention	Yes	
§60.13	Monitoring requirements	Yes	Except that §60.13 only applies to stationary CI ICE with a displacement of (≥30 liters per cylinder.
§60.14	Modification	Yes	
§60.15	Reconstruction	Yes	
§60.16	Priority list	Yes	
§60.17	Incorporations by reference	Yes	
§60.18	General control device requirements	No	
§60.19	General notification and reporting requirements	Yes	

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

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

Source Name: Indiana Renewable Fuels, LLC
Source Address: Section 18, Township 32 North, Range 3 East
Argos, Indiana 46501
Mailing Address: 1007 West Third Street, Rochester, Indiana 46975
FESOP Permit No.: F099-24648-00103

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 BRANCH
100 North Senate Avenue, MC61-53 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: Indiana Renewable Fuels, LLC
Source Address: Section 18, Township 32 North, Range 3 East
Argos, Indiana 46501
Mailing Address: 1007 West Third Street, Rochester, Indiana 46975
FESOP Permit No.: F099-24648-00103

This form consists of 2 pages

Page 1 of 2

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

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

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

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

Page 2 of 2

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

Form Completed by: _____

Title / Position: _____

Date: _____

Phone: _____

A certification is not required for this report.

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

FESOP Quarterly Report

Source Name: Indiana Renewable Fuels, LLC
Source Address: Section 18, Township 32 North, Range 3 East
Argos, Indiana 46501
Mailing Address: 1007 West Third Street, Rochester, Indiana 46975
FESOP Permit No.: F099-24648-00103
Facility: Denatured Ethanol Loadout
Parameter: Denatured Ethanol Loadout
Limit: Less than 121,000,000 gallons per twelve (12) consecutive month period.

YEAR: _____

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

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

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

Attach a signed certification to complete this report.

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

FESOP Quarterly Report

Source Name: Indiana Renewable Fuels, LLC
 Source Address: Section 18, Township 32 North, Range 3 East
 Argos, Indiana 46501
 Mailing Address: 1007 West Third Street, Rochester, Indiana 46975
 FESOP Permit No.: F099-24648-00103
 Facility: Ethanol Loadout Flare
 Parameter: Fuel Usage
 Limit: Less than 34.4 MMCF per twelve (12) consecutive month period.

YEAR: _____

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

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

Submitted by: _____

Title / Position: _____

Signature: _____

Date: _____

Phone: _____

Attach a signed certification to complete this report.

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

FESOP Quarterly Report

Source Name: Indiana Renewable Fuels, LLC
 Source Address: Section 18, Township 32 North, Range 3 East
 Argos, Indiana 46501
 Mailing Address: 1007 West Third Street, Rochester, Indiana 46975
 FESOP Permit No.: F099-24648-00103
 Facility: Biomethanator Flare
 Parameter: Fuel Usage
 Limit: Less than 13.7 MMCF per twelve (12) consecutive month period.

YEAR: _____

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

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

Submitted by: _____

Title / Position: _____

Signature: _____

Date: _____

Phone: _____

Attach a signed certification to complete this report.

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

FESOP Quarterly Report

Source Name: Indiana Renewable Fuels, LLC
Source Address: Section 18, Township 32 North, Range 3 East
Argos, Indiana 46501
Mailing Address: 1007 West Third Street, Rochester, Indiana 46975
FESOP Permit No.: F099-24648-00103
Facility: Natural Gas / Landfill Gas Fired Boilers, EP-4a and EP-4b
Parameter: Landfill Gas Usage
Limit: Less than 2,989 MMCF/yr per twelve (12) consecutive month period.

YEAR: _____

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

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

Submitted by: _____

Title / Position: _____

Signature: _____

Date: _____

Phone: _____

Attach a signed certification to complete this report.

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

Source Name: Indiana Renewable Fuels, LLC
Source Address: Section 18, Township 32 North, Range 3 East
Argos, Indiana 46501
Mailing Address: 1007 West Third Street, Rochester, Indiana 46975
FESOP Permit No.: F099-24648-00103

Months: _____ to _____ Year: _____

Page 1 of 2

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

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

Form Completed by: _____

Title / Position: _____

Date: _____

Phone: _____

Attach a signed certification to complete this report.

Mail to: Permit Administration & Development Section
Office of Air Quality
MC61-53 IGCN 1003
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

Indiana Renewable Fuels, LLC
1007 West Third Street
Rochester, Indiana 46975

Affidavit of Construction

I, _____, being duly sworn upon my oath, depose and say:
(Name of the Authorized Representative)

1. I live in _____ County, Indiana and being of sound mind and over twenty-one (21) years of age, I am competent to give this affidavit.
2. I hold the position of _____ for _____.
(Title) (Company Name)
3. By virtue of my position with _____, I have personal
(Company Name)
knowledge of the representations contained in this affidavit and am authorized to make
these representations on behalf of _____.
(Company Name)
4. I hereby certify that Indiana Renewable Fuels, LLC located in Section 18, Township 32 North, Range 3 East in Argos, Marshall County, Indiana, completed construction of the an ethanol production plant on _____ in conformity with the requirements and intent of the construction permit application received by the Office of Air Quality on _____, and as permitted pursuant to New Source Construction Permit and Federally Enforceable State Operating Permit No. F099-24648-00103, Plant ID No. 099-00103 issued on _____.

Further Affiant said not.

I affirm under penalties of perjury that the representations contained in this affidavit are true, to the best of my information and belief.

Signature _____

Date _____

STATE OF INDIANA)
)SS

COUNTY OF _____)

Subscribed and sworn to me, a notary public in and for _____ County and State of
Indiana on this _____ day of _____, 20 _____.

My Commission expires:

Signature _____

Name (typed or printed)

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

Addendum to the Technical Support Document (ATSD)
for New Source Construction
and
Federally Enforceable State Operating Permit

Source Background and Description
--

Source Name:	Indiana Renewable Fuels, LLC
Source Location:	Section 18, Township 32, Range 3 West Argos, Indiana 46501
County:	Marshall County
SIC Code:	2869
Operation Permit No.:	F 099-24648-00103
Permit Reviewer:	David J. Matousek

On February 4, 2008, the Office of Air Quality (OAQ) had a notice published in the Plymouth Pilot News, Marshall County, Indiana, stating that Indiana Renewable Fuels, LLC had applied for a New Source Construction and Federally Enforceable State Operating Permit to construct and operate a new ethanol production plant. The notice also stated that the OAQ proposed to issue a Federally Enforceable State Operating Permit for this operation and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

Comments and Responses

On February 12, 2008, Timothy and Pamela Repp submitted comments to IDEM, OAQ on the draft Federally Enforceable State Operating Permit. A summary of the comments and IDEM's response follows:

Comment 1:

Tim and Pamela Repp do not agree with the location of the proposed ethanol facility. They believe it should be located closer to the landfill on the Marshall and Fulton County lines where the air is already polluted and suffers from odor problems.

Response to Comment 1:

The location selected by Indiana Renewable Fuels, LLC is a business decision based on local zoning regulations and the cost and availability of land. IDEM does not have the regulatory authority to control the location of this facility. No change to the draft permit has been made as a result of this comment.

Comment 2:

Tim and Pamela Repp are concerned about odor problems and the impact on the health of local children due to the introduction of new air contaminants in the area.

Response to Comment 2:

The federal Clean Air Act requires the United States Environmental Protection Agency (U.S. EPA) to set National Ambient Air Quality Standards (NAAQS) for six criteria pollutants. These criteria pollutants are carbon monoxide (CO), lead, sulfur dioxide (SO₂), particulate matter to a diameter of 2.5 microns (PM_{2.5}), nitrogen oxides (NO_x) and ground level ozone. The U.S. EPA sets these standards at levels that protect human health, which is why the NAAQS are often referred to as the federal health standards for outdoor air. The NAAQS limit for each criteria pollutant is set low enough to protect human health, including the

health of sensitive persons, such as asthmatics, children, and the elderly. More information about each of these pollutants is available at <http://www.epa.gov/air/airpollutants.html> on U.S. EPA's website. The complete table of the NAAQS for all six criteria pollutants can be found at the <http://www.epa.gov/air/criteria.html> website. EPA's website <http://www.epa.gov/air/urbanair/6poll.html> provides more detailed information about the health effects of these six common air pollutants and why they are regulated.

The air pollution control permit for Indiana Renewable Fuels, LLC requires the construction and operation of all equipment at the facility to comply with state and federal air quality rules and regulations. The NAAQS, as described above, are put in place to protect everyone, including those persons living closest to a source of air pollution. IDEM has no authority to consider or regulate odor. To address these issues, please contact your local officials.

No change to the draft permit has been made as a result of this comment.

Comment 3:

Tim and Pamela Repp are concerned about air pollution due to the increased truck traffic and the safety of children traveling to school.

Response to Comment 3:

IDEM has no authority to regulate noise, truck or rail traffic, or to regulate the dust or engine emissions from trucks as they travel on public roads. The vehicles and railcars coming onto the site are defined as mobile sources. The engine emissions from mobile sources are regulated directly by the United States Environmental Protection Agency (U.S. EPA) and IDEM does not have the authority to regulate such emissions. Mobile sources are specifically excluded from the definition of "source" in 326 IAC 1-2-73. Additional information about the regulation of mobile sources by the U.S. EPA can be found at <http://www.epa.gov/otaq> on the internet web site of the Office of Transportation and Air Quality. The responsibility for public safety on state, town, city and county roadways remains with the Indiana Department of Transportation and local officials.

No change to the draft permit has been made as a result of this comment.

On July 11, 2007 and February 25, 2008, Donald L. and Nancy L. Mahoney submitted comments to IDEM, OAQ on the draft Federally Enforceable State Operating Permit. A summary of the comments and IDEM's response follows:

Comment 1:

Donald and Nancy Mahoney requested a public hearing because the facility will emit pollutants in excess of established standards. They are concerned about the large amount of pollutants emitted into the air.

Response to Comment 1:

Public hearings on these types of permits are discretionary under Indiana Law. During the public comment period, the Indiana Department of Environmental Management received only two written comments. Therefore, the OAQ has elected not to hold a public hearing to address these comments.

In regards to the increase in air pollution, the federal Clean Air Act requires the United States Environmental Protection Agency (U.S. EPA) to set National Ambient Air Quality Standards (NAAQS) for six criteria pollutants. These criteria pollutants are carbon monoxide (CO), lead, sulfur dioxide (SO₂), particulate matter to a diameter of 2.5 microns (PM_{2.5}), nitrogen oxides (NO_x) and ground level ozone. The U.S. EPA sets these standards at levels that protect human health, which is why the NAAQS are often referred to as the federal health standards for outdoor air. The NAAQS limit for each criteria pollutant is set low enough to protect human health, including the health of sensitive persons, such as asthmatics, children, and the elderly. More information about each of these pollutants is available at <http://www.epa.gov/air/airpollutants.html> on U.S. EPA's website. The complete table of the NAAQS for all six criteria pollutants can be found at the <http://www.epa.gov/air/criteria.html> website. EPA's website

<http://www.epa.gov/air/urbanair/6poll.html> provides more detailed information about the health effects of these six common air pollutants and why they are regulated.

The air pollution control permit for Indiana Renewable Fuels, LLC requires the construction and operation of all equipment at the facility to comply with state and federal air quality rules and regulations. The NAAQS, as described above, are put in place to protect everyone, including those persons living closest to a source of air pollution. IDEM has no authority to consider or regulate odor. To address these issues, please contact your local officials.

No change to the draft permit has been made as a result of this comment.

Comment 2:

Donald and Nancy Mahoney are concerned about the increased air pollution due to truck traffic and the danger it poses to children walking to school.

Response to Comment 2:

IDEM has no authority to regulate noise, truck or rail traffic, or to regulate the dust or engine emissions from trucks as they travel on public roads. The vehicles and railcars coming onto the site are defined as mobile sources. The engine emissions from mobile sources are regulated directly by the United States Environmental Protection Agency (U.S. EPA) and IDEM does not have the authority to regulate such emissions. Mobile sources are specifically excluded from the definition of "source" in 326 IAC 1-2-73. Additional information about the regulation of mobile sources by the U.S. EPA can be found at <http://www.epa.gov/otaq> on the internet web site of the Office of Transportation and Air Quality. The responsibility for public safety on state, town, city and county roadways remains with the Indiana Department of Transportation and local officials.

No change to the draft permit has been made as a result of this comment.

Comment 3:

Donald and Nancy Mahoney believe the air permit should be denied because Indiana Renewable Fuels did not follow local land use ordinances and does not have enough experience in running an ethanol plant.

Response to Comment 3:

The enforcement of local zoning or land use ordinances is the responsibility of local officials. The Indiana Department of Environmental Management can not consider zoning or land use ordinances in permitting decisions. In making a decision to issue a permit, IDEM requires that the facility be constructed and operated in accordance with the final permit.

No change to the draft permit has been made as a result of this comment.

Additional Changes:

IDEM, OAQ has decided to make additional revisions to the permit. The Technical Support Document (TSD) is used by IDEM, OAQ for historical purposes and will not be updated, 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**. The proposed changes follow:

- (a) Effective November 16, 2007, Indiana Renewable Fuels, LLC is no longer subject to the applicable conditions of 40 CFR 60, Subpart VV, Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry. However, Indiana Renewable Fuels, LLC is now subject to 40 CFR 60, Subpart VVa, Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for Which Construction,

Reconstruction, or Modification Commenced After November 7, 2006. Therefore, all references to 40 CFR 60, Subpart VV have been removed from the permit and replaced by 40 CFR 60, Subpart VVa. The proposed changes to the permit follow:

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:

...

Ethanol Production Plant:

- (a) Ethanol Production Plant, identified as EP-5, approved for construction in 2007, with a maximum production rate of 121,000,000 gallons of ethanol per year, and consisting of the following:
- (1) One (1) distillation process, identified as EP-5B, approved for construction in 2007, with a maximum throughput of 13,813 gallons per hour, controlled by either one of two regenerative thermal oxidizer (RTO) systems C-10 and C-11, with a maximum heat input capacity of 10 MMBtu/hr, using natural gas for fuel, with emissions exhausting through stack S10. This process consists of the following:
 - (A) One (1) mixer (blend) tank.
 - (B) Two (2) slurry tanks.
 - (C) One (1) cook tube.
 - (D) One (1) flash tank.
 - (E) Two (2) yeast tanks.
 - (F) One (1) beer column.
 - (G) One (1) side stripper.
 - (H) One (1) rectifier column.
 - (I) Two (2) condensers.
 - (J) One (1) molecular sieve.

Under 40 CFR Part 60, Subpart VVa, the pumps, compressors, pressure relief devices in gas/vapor service, sampling connection systems, open-ended valves or lines, and valves of this process are considered to be affected facilities.
 - (2) One (1) fermentation process, identified as EP-5A, with a maximum capacity of 13,813 gallons per hour, controlled by wet scrubber S40, which exhausts to stack S40 and includes the following:
 - (A) Seven (7) fermentation tanks.
 - (B) One (1) beer well.

Under 40 CFR Part 60, Subpart VVa, the pumps, compressors, pressure relief devices in gas/vapor service, sampling connection systems, open-ended valves or lines, and valves of this process are considered to be affected facilities.
 - (3) One (1) Dried Distillers Grain and Solubles (DDGS) drying process with a maximum throughput of 44.8 tons per hour, controlled by two (2) regenerative thermal oxidizers (RTOs), identified as C-10 and C-11, with a maximum heat input capacity of 10 MMBtu/hr, using natural gas for fuel. This process consists of the following:
 - (A) Four (4) DDGS dryers, identified as dryers EP-9A to EP-9D, each with a heat input capacity of 40 MMBtu/hr or a total heat input capacity of 160 MMBtu/hr, with a total drying rate of 392,568 tons of DDGS per year, using natural gas and methanator offgas for combustion. Dryers EP-9A and EP-9B are controlled by RTO C-10. Dryers EP-9C and EP-9D are

controlled by RTO C-11. Under 40 CFR Part 60, Subpart VVa, this process is considered to be an affected facility.

- (B) Six (6) DDGS centrifuges, with a maximum throughput of 392,568 tons of DDGS per year or 44.8 tons per hour. Under 40 CFR Part 60, Subpart VVa, this process is considered to be an affected facility.
- (C) One (1) DDGS evaporator, with a maximum throughput of 392,568 tons of DDGS per year or 44.8 tons per hour. Under 40 CFR Part 60, Subpart VVa, this process is considered to be an affected facility.
- (D) DDGS storage facilities:
 - (i) Two (2) storage bins, each with a maximum capacity of 4,000 tons.
 - (ii) One (1) flat storage pad with a maximum capacity of 20,000 bushels per hour.
 - (iii) One (1) wet storage pad.
- (E) One (1) DDGS cooling drum, identified as S70, with a maximum throughput of 392,568 tons of DDGS per year, controlled by a baghouse, identified as S70 and exhausting to stack S70. Under 40 CFR Part 60, Subpart VVa, this process is considered to be an affected facility.
- (F) One DDGS loadout operation, known as EP-10, with a maximum capacity of 44.8 tons per hour, controlled by baghouse S90.
- (4) Ethanol loading racks, identified as EP-8, with a maximum loading capacity of 121 million gallons per year, controlled by a smokeless enclosed flare EP-14, with a heat input capacity of 12.4 MMBtu/hr and consisting of the following:
 - (A) One (1) ethanol truck loading rack, utilizing submerged loading, with a maximum loading capacity of 121 million gallons per year.
 - (B) One (1) ethanol railcar loading rack, utilizing submerged loading, with a maximum loading capacity of 121 million gallons per year.

Under 40 CFR Part 60, Subpart VVa, the pumps, compressors, pressure relief devices in gas/vapor service, sampling connection systems, open-ended valves or lines, and valves of this process are considered to be affected facilities.

- (5) Two (2) natural gas / landfill gas fired boilers, identified as EP-4a and EP-4b, approved for construction in 2007, each with a rated heat input capacity of 145 MMBtu/hr, with emissions venting through stacks S110 and S120, respectively. Under 40 CFR Part 60, Subpart Db, these units are considered affected facilities.

SECTION D.2 EMISSIONS UNIT OPERATION CONDITIONS - Fermentation

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

(d) One (1) fermentation process, identified as EP-5A, with a maximum capacity of 13,813 gallons per hour, controlled by wet scrubber S40, which exhausts to stack S40 and includes the following:

- (1) Seven (7) fermentation tanks.
- (2) One (1) beer well.

Under 40 CFR Part 60, Subpart VVa, the pumps, compressors, pressure relief devices in gas/vapor service, sampling connection systems, open-ended valves or lines, and valves of this process are considered to be affected facilities.

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

D.2.6 General Provisions Relating to NSPS [326 IAC 12-1][40 CFR Part 60, Subpart A]

The provisions of 40 CFR 60, Subpart A - General Provisions, which are incorporated by reference in 326 IAC 12-1, apply to the facility described in Condition D.2.8 except when otherwise specified in 40 CFR 60, Subpart VVa.

D.2.7 Equipment Leaks of VOC [326 IAC 12][40 CFR 60, Subpart VVa]

Pursuant to 40 CFR 60, Subpart VVa, the Permittee shall comply with the requirement of Section E.1 for pumps; pressure relief devices in gas/vapor service; sampling connection systems; open-ended valves or lines; and valves.

SECTION D.3 EMISSIONS UNIT OPERATION CONDITIONS Distillation, DDGS Dryers and RTO System

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

(e) One (1) distillation process, identified as EP-5B, approved for construction in 2007, with a maximum throughput of 13,813 gallons per hour, controlled by either one of two regenerative thermal oxidizer (RTO) systems C-10 and C-11, with a maximum heat input capacity of 10 MMBtu/hr, using natural gas for fuel, with emissions exhausting through stack S10. This process consists of the following:

- (1) One (1) mixer (blend) tank.
- (2) Two (2) slurry tanks.
- (3) One (1) cook tube.
- (4) One (1) flash tank.
- (5) Two (2) yeast tanks.
- (6) One (1) beer column.

- (7) One (1) side stripper.
- (8) One (1) rectifier column.
- (9) Two (2) condensers.
- (10) One (1) molecular sieve.

Under 40 CFR Part 60, Subpart VVa, the pumps, compressors, pressure relief devices in gas/vapor service, sampling connection systems, open-ended valves or lines, and valves of this process are considered to be affected facilities.

- (f) One (1) Dried Distillers Grain and Solubles (DDGS) drying process with a maximum throughput of 44.8 tons per hour, controlled by two (2) regenerative thermal oxidizers (RTOs), identified as C-10 and C-11, with a maximum heat input capacity of 10 MMBtu/hr, using natural gas for fuel. This process consists of the following:
- (1) Four (4) DDGS dryers, identified as dryers EP-9A to EP-9D, each with a heat input capacity of 40 MMBtu/hr or a total heat input capacity of 160 MMBtu/hr, with a total drying rate of 392,568 tons of DDGS per year, using natural gas and methanator offgas for combustion. Dryers EP-9A and EP-9B are controlled by RTO C-10. Dryers EP-9C and EP-9D are controlled by RTO C-11. Under 40 CFR Part 60, Subpart VVa, this process is considered to be an affected facility.
 - (2) Six (6) DDGS centrifuges, with a maximum throughput of 392,568 tons of DDGS per year or 44.8 tons per hour. Under 40 CFR Part 60, Subpart VVa, this process is considered to be an affected facility.
 - (3) One (1) DDGS evaporator, with a maximum throughput of 392,568 tons of DDGS per year or 44.8 tons per hour. Under 40 CFR Part 60, Subpart VVa, this process is considered to be an affected facility.
 - (4) DDGS storage facilities:
 - (A) Two (2) storage bins, each with a maximum capacity of 4,000 tons.
 - (B) One (1) flat storage pad, with a maximum capacity of 20,000 bushels per hour.
 - (C) One (1) wet storage pad.
 - (5) One (1) DDGS cooling drum, identified as S70, with a maximum throughput of 392,568 tons of DDGS per year, controlled by a baghouse, identified as S70 and exhausting to stack S70. Under 40 CFR Part 60, Subpart VVa, this process is considered to be an affected facility.
 - (6) One (1) DDGS loadout operation, known as EP-10, with a maximum capacity of 44.8 tons per hour, controlled by baghouse S90.

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

SECTION D.4 EMISSIONS UNIT OPERATION CONDITIONS
Denatured Ethanol Loading Operations

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

- (i) Ethanol loading racks, identified as EP-8, with a maximum loading capacity of 121 million gallons per year, controlled by a smokeless enclosed flare EP-14, with a heat input capacity of 12.4 MMBtu/hr and consisting of the following:
- (1) One (1) ethanol truck loading rack, utilizing submerged loading, with a maximum loading capacity of 121 million gallons per year.
 - (2) One (1) ethanol railcar loading rack, utilizing submerged loading, with a maximum loading capacity of 121 million gallons per year.

Under 40 CFR Part 60, Subpart VVa, the pumps, compressors, pressure relief devices in gas/vapor service, sampling connection systems, open-ended valves or lines, and valves of this process are considered to be affected facilities.

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

SECTION E.1 FACILITY OPERATION CONDITIONS
NSPS 40 CFR PART 60, SUBPART VV

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

Ethanol Production Plant:

- (a) Ethanol Production Plant, identified as EP-5, approved for construction in 2007, with a maximum production rate of 121,000,000 gallons of ethanol per year, and consisting of the following:
- (1) One (1) distillation process, identified as EP-5B, approved for construction in 2007, with a maximum throughput of 13,813 gallons per hour, controlled by either one of two regenerative thermal oxidizer (RTO) systems C-10 and C-11, with a maximum heat input capacity of 10 MMBtu/hr, using natural gas for fuel, with emissions exhausting through stack S10. This process consists of the following:
 - (A) One (1) mixer (blend) tank.
 - (B) Two (2) slurry tanks.
 - (C) One (1) cook tube.
 - (D) One (1) flash tank.
 - (E) Two (2) yeast tanks.
 - (F) One (1) beer column.
 - (G) One (1) side stripper.
 - (H) One (1) rectifier column.
 - (I) Two (2) condensers.
 - (J) One (1) molecular sieve.

Under 40 CFR Part 60, Subpart VV, the pumps, compressors, pressure relief devices in gas/vapor service, sampling connection systems, open-ended valves or lines, and valves of this process are considered to be affected facilities.

(2) — One (1) fermentation process, identified as EP-5A, with a maximum capacity of 13,813 gallons per hour, controlled by wet scrubber S40, which exhausts to stack S40 and includes the following:

- (A) — Seven (7) fermentation tanks.
- (B) — One (1) beer well.

Under 40 CFR Part 60, Subpart VV, the pumps, compressors, pressure relief devices in gas/vapor service, sampling connection systems, open ended valves or lines, and valves of this process are considered to be affected facilities.

(3) — One (1) Dried Distillers Grain and Solubles (DDGS) drying process with a maximum throughput of 44.8 tons per hour, controlled by two (2) regenerative thermal oxidizers (RTOs), identified as C-10 and C-11, with a maximum heat input capacity of 10 MMBtu/hr, using natural gas for fuel. This process consists of the following:

- (A) — Four (4) DDGS dryers, identified as dryers EP-9A to EP-9D, each with a heat input capacity of 40 MMBtu/hr or a total heat input capacity of 160 MMBtu/hr, with a total drying rate of 392,568 tons of DDGS per year, using natural gas and methanator offgas for combustion. Dryers EP-9A and EP-9B are controlled by RTO C-10. Dryers EP-9C and EP-9D are controlled by RTO C-11. Under 40 CFR Part 60, Subpart VV, this process is considered to be an affected facility.
- (B) — Six (6) DDGS centrifuges, with a maximum throughput of 392,568 tons of DDGS per year or 44.8 tons per hour. Under 40 CFR Part 60, Subpart VV, this process is considered to be an affected facility.
- (C) — One (1) DDGS evaporator, with a maximum throughput of 392,568 tons of DDGS per year or 44.8 tons per hour. Under 40 CFR Part 60, Subpart VV, this process is considered to be an affected facility.
- (D) — One (1) DDGS cooling drum, identified as S70, with a maximum throughput of 392,568 tons of DDGS per year, controlled by a baghouse, identified as S70 and exhausting to stack S70. Under 40 CFR Part 60, Subpart VV, this process is considered to be an affected facility.

(4) — Ethanol loading racks, identified as EP-8, with a maximum loading capacity of 121 million gallons per year, controlled by enclosed flare EP-14, with a heat input capacity of 12.4 MMBtu/hr and consisting of the following:

- (A) — One (1) ethanol truck loading rack, utilizing submerged loading, with a maximum loading capacity of 121 million gallons per year.
- (B) — One (1) ethanol railcar loading rack, utilizing submerged loading, with a maximum loading capacity of 121 million gallons per year.

Under 40 CFR Part 60, Subpart VV, the pumps, compressors, pressure relief devices in gas/vapor service, sampling connection systems, open ended valves or lines, and valves of this process are considered to be affected facilities.

(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 2-7-5(1)]~~

~~E.1.1 General Provisions Relating to New Source Performance Standards [326 IAC 12-1] [40 CFR Part 60, Subpart A]~~

- ~~(a) Pursuant to 40 CFR 60.1, the Permittee shall comply with the provisions of 40 CFR Part 60 Subpart A—General Provisions, which are incorporated by reference as 326 IAC 12-1, except as otherwise specified in 40 CFR Part 60, Subpart VV.~~
- ~~(b) Pursuant to 40 CFR 60.19, the Permittee shall submit all required notifications and reports to:~~

~~Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue, MC61-53-IGCN 1003
Indianapolis, Indiana 46204-2251~~

~~E.1.2 Standard of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry [40 CFR Part 60, Subpart VV] [326 IAC 12]~~

~~Pursuant to 40 CFR Part 60, Subpart VV, the Permittee shall comply with the provisions of Standard of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry. The provisions are incorporated by reference as 326 IAC 12, as specified as follows:~~

Title 40: Protection of Environment

Subpart VV—Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry

[Source: 48 FR 48335, Oct. 18, 1983, unless otherwise noted.]

§ 60.480—Applicability and designation of affected facility.

- (a) (1) The provisions of this subpart apply to affected facilities in the synthetic organic chemicals manufacturing industry.
- (2) The group of all equipment (defined in §60.481) within a process unit is an affected facility.
- (b) Any affected facility under paragraph (a) of this section that commences construction or modification after January 5, 1981, shall be subject to the requirements of this subpart.
- (c) Addition or replacement of equipment for the purpose of process improvement which is accomplished without a capital expenditure shall not by itself be considered a modification under this subpart.
- (d) (1) If an owner or operator applies for one or more of the exemptions in this paragraph, then the owner or operator shall maintain records as required in §60.486(i).
- (2) Any affected facility that has the design capacity to produce less than 1,000 Mg/yr (1,102 ton/yr) is exempt from §60.482.
- (3) If an affected facility produces heavy liquid chemicals only from heavy liquid feed or raw materials, then it is exempt from §60.482.

~~(4) Any affected facility that produces beverage alcohol is exempt from §60.482.~~

~~(5) Any affected facility that has no equipment in VOC service is exempt from §60.482.~~

[48 FR 48335, Oct. 18, 1983, as amended at 49 FR 22607, May 30, 1984; 65 FR 61762, Oct. 17, 2000; 65 FR 78276, Dec. 14, 2000]

§ 60.481—Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act or in subpart A of part 60, and the following terms shall have the specific meanings given them.

Capital expenditure means, in addition to the definition in 40 CFR 60.2, an expenditure for a physical or operational change to an existing facility that:

(a) Exceeds P, the product of the facility's replacement cost, R, and an adjusted annual asset guideline repair allowance, A, as reflected by the following equation: $P = R \times A$, where

(1) The adjusted annual asset guideline repair allowance, A, is the product of the percent of the replacement cost, Y, and the applicable basic annual asset guideline repair allowance, B, divided by 100 as reflected by the following equation:

$$A = Y \times (B \div 100);$$

(2) The percent Y is determined from the following equation: $Y = 1.0 - 0.575 \log X$, where X is 1982 minus the year of construction; and

(3) The applicable basic annual asset guideline repair allowance, B, is selected from the following table consistent with the applicable subpart:

Table for Determining Applicable for B

Subpart applicable to facility	Value of B to be used in equation
VV	12.5
DDD	12.5
GGG	7.0
KKK	4.5

Closed vent system means a system that is not open to the atmosphere and that is composed of hard-piping, ductwork, connections, and, if necessary, flow-inducing devices that transport gas or vapor from a piece or pieces of equipment to a control device or back to a process.

Connector means flanged, screwed, welded, or other joined fittings used to connect two pipe lines or a pipe line and a piece of process equipment.

Control device means an enclosed combustion device, vapor recovery system, or flare.

Distance piece means an open or enclosed casing through which the piston rod travels, separating the compressor cylinder from the crankcase.

Double block and bleed system means two block valves connected in series with a bleed valve or line that can vent the line between the two block valves.

Duct work means a conveyance system such as those commonly used for heating and ventilation systems. It is often made of sheet metal and often has sections connected by screws or crimping. Hard-piping is not ductwork.

Equipment means each pump, compressor, pressure relief device, sampling connection system, open-ended valve or line, valve, and flange or other connector in VOC service and any devices or systems required by this subpart.

First attempt at repair means to take rapid action for the purpose of stopping or reducing leakage of organic material to atmosphere using best practices.

Fuel gas means gases that are combusted to derive useful work or heat.

Fuel gas system means the offsite and onsite piping and flow and pressure control system that gathers gaseous stream(s) generated by onsite operations, may blend them with other sources of gas, and transports the gaseous stream for use as fuel gas in combustion devices or in-process combustion equipment, such as furnaces and gas turbines, either singly or in combination.

Hard-piping means pipe or tubing that is manufactured and properly installed using good engineering judgment and standards such as ASME B31.3, Process Piping (available from the American Society of Mechanical Engineers, PO Box 2900, Fairfield, NJ 07007-2900).

In gas/vapor service means that the piece of equipment contains process fluid that is in the gaseous state at operating conditions.

In heavy liquid service means that the piece of equipment is not in gas/vapor service or in light liquid service.

In light liquid service means that the piece of equipment contains a liquid that meets the conditions specified in §60.485(e).

In-situ sampling systems means nonextractive samplers or in-line samplers.

In vacuum service means that equipment is operating at an internal pressure which is at least 5 kilopascals (kPa)(0.7 psia) below ambient pressure.

In VOC service means that the piece of equipment contains or contacts a process fluid that is at least 10 percent VOC by weight. (The provisions of §60.485(d) specify how to determine that a piece of equipment is not in VOC service.)

Liquids dripping means any visible leakage from the seal including spraying, misting, clouding, and ice formation.

Open-ended valve or line means any valve, except safety relief valves, having one side of the valve seat in contact with process fluid and one side open to the atmosphere, either directly or through open piping.

Pressure release means the emission of materials resulting from system pressure being greater than set pressure of the pressure relief device.

Process improvement means routine changes made for safety and occupational health requirements, for energy savings, for better utility, for ease of maintenance and operation, for correction of design deficiencies, for bottleneck removal, for changing product requirements, or for environmental control.

~~**Process unit** means components assembled to produce, as intermediate or final products, one or more of the chemicals listed in §60.489 of this part. A process unit can operate independently if supplied with sufficient feed or raw materials and sufficient storage facilities for the product.~~

~~**Process unit shutdown** means a work practice or operational procedure that stops production from a process unit or part of a process unit. An unscheduled work practice or operational procedure that stops production from a process unit or part of a process unit for less than 24 hours is not a process unit shutdown. The use of spare equipment and technically feasible bypassing of equipment without stopping production are not process unit shutdowns.~~

~~**Quarter** means a 3-month period; the first quarter concludes on the last day of the last full month during the 180 days following initial startup.~~

~~**Repaired** means that equipment is adjusted, or otherwise altered, in order to eliminate a leak as indicated by one of the following: an instrument reading of 10,000 ppm or greater, indication of liquids dripping, or indication by a sensor that a seal or barrier fluid system has failed.~~

~~**Replacement cost** means the capital needed to purchase all the depreciable components in a facility.~~

~~**Sampling connection system** means an assembly of equipment within a process unit used during periods of representative operation to take samples of the process fluid. Equipment used to take nonroutine grab samples is not considered a sampling connection system.~~

~~**Sensor** means a device that measures a physical quantity or the change in a physical quantity such as temperature, pressure, flow rate, pH, or liquid level.~~

~~**Synthetic organic chemicals manufacturing industry** means the industry that produces, as intermediates or final products, one or more of the chemicals listed in §60.489.~~

~~**Volatile organic compounds or VOC** means, for the purposes of this subpart, any reactive organic compounds as defined in §60.2 Definitions.~~

[48 FR 48335, Oct. 18, 1983, as amended at 49 FR 22607, May 30, 1984; 49 FR 26738, June 29, 1984; 60 FR 43258, Aug. 18, 1995; 65 FR 61762, Oct. 17, 2000; 65 FR 78276, Dec. 14, 2000]

~~**§ 60.482-1 Standards: General.**~~

- ~~(a) Each owner or operator subject to the provisions of this subpart shall demonstrate compliance with the requirements of §§60.482-1 through 60.482-10 or §60.480(e) for all equipment within 180 days of initial startup.~~
- ~~(b) Compliance with §§60.482-1 to 60.482-10 will be determined by review of records and reports, review of performance test results, and inspection using the methods and procedures specified in §60.485.~~
- ~~(c) (1) An owner or operator may request a determination of equivalence of a means of emission limitation to the requirements of §§60.482-2, 60.482-3, 60.482-5, 60.482-6, 60.482-7, 60.482-8, and 60.482-10 as provided in §60.484.~~
 - ~~(2) If the Administrator makes a determination that a means of emission limitation is at least equivalent to the requirements of §§60.482-2, 60.482-3, 60.482-5, 60.482-6, 60.482-7, 60.482-8, or 60.482-10, an owner or operator shall comply with the requirements of that determination.~~

- ~~(d) — Equipment that is in vacuum service is excluded from the requirements of §§60.482-2 to 60.482-10 if it is identified as required in §60.486(e)(5).~~

~~[48 FR 48335, Oct. 18, 1983, as amended at 49 FR 22608, May 30, 1984; 65 FR 78276, Dec. 14, 2000]~~

~~**§ 60.482-2 Standards: Pumps in light liquid service.**~~

- ~~(a) — (1) — Each pump in light liquid service shall be monitored monthly to detect leaks by the methods specified in §60.485(b), except as provided in §60.482-1(c) and paragraphs (d), (e), and (f) of this section.~~
- ~~(2) — Each pump in light liquid service shall be checked by visual inspection each calendar week for indications of liquids dripping from the pump seal.~~
- ~~(b) — (1) — If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.~~
- ~~(2) — If there are indications of liquids dripping from the pump seal, a leak is detected.~~
- ~~(c) — (1) — When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in §60.482-9.~~
- ~~(2) — A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.~~

~~[48 FR 48335, Oct. 18, 1983, as amended at 65 FR 61762, Oct. 17, 2000; 65 FR 78276, Dec. 14, 2000]~~

~~**§ 60.482-4 Standards: Pressure relief devices in gas/vapor service.**~~

- ~~(a) — Except during pressure releases, each pressure relief device in gas/vapor service shall be operated with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as determined by the methods specified in §60.485(c).~~
- ~~(b) — (1) — After each pressure release, the pressure relief device shall be returned to a condition of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as soon as practicable, but no later than 5 calendar days after the pressure release, except as provided in §60.482-9.~~
- ~~(2) — No later than 5 calendar days after the pressure release, the pressure relief device shall be monitored to confirm the conditions of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, by the methods specified in §60.485(c).~~
- ~~(c) — Any pressure relief device that is routed to a process or fuel gas system or equipped with a closed vent system capable of capturing and transporting leakage through the pressure relief device to a control device as described in §60.482-10 is exempted from the requirements of paragraphs (a) and (b) of this section.~~
- ~~(d) — (1) — Any pressure relief device that is equipped with a rupture disk upstream of the pressure relief device is exempt from the requirements of paragraphs (a) and (b) of this section, provided the owner or operator complies with the requirements in paragraph (d)(2) of this section.~~

- ~~(2) After each pressure release, a new rupture disk shall be installed upstream of the pressure relief device as soon as practicable, but no later than 5 calendar days after each pressure release, except as provided in §60.482-9.~~

[48 FR 48335, Oct. 18, 1983, as amended at 65 FR 61762, Oct. 17, 2000; 65 FR 78277, Dec. 14, 2000]

~~§ 60.482-6 Standards: Open-ended valves or lines.~~

- ~~(a) (1) Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve, except as provided in §60.482-1(c).~~
- ~~(2) The cap, blind flange, plug, or second valve shall seal the open end at all times except during operations requiring process fluid flow through the open-ended valve or line.~~
- ~~(b) Each open-ended valve or line equipped with a second valve shall be operated in a manner such that the valve on the process fluid end is closed before the second valve is closed.~~
- ~~(c) When a double block and bleed system is being used, the bleed valve or line may remain open during operations that require venting the line between the block valves but shall comply with paragraph (a) at all other times.~~
- ~~(d) Open-ended valves or lines in an emergency shutdown system which are designed to open automatically in the event of a process upset are exempt from the requirements of paragraphs (a), (b) and (c) of this section.~~
- ~~(e) Open-ended valves or lines containing materials which would autocatalytically polymerize or would present an explosion, serious overpressure, or other safety hazard if capped or equipped with a double block and bleed system as specified in paragraphs (a) through (c) of this section are exempt from the requirements of paragraphs (a) through (c) of this section.~~

[48 FR 48335, Oct. 18, 1983, as amended at 49 FR 22607, May 30, 1984; 65 FR 78277, Dec. 14, 2000]

~~§ 60.482-7 Standards: Valves in gas/vapor service and in light liquid service.~~

- ~~(a) Each valve shall be monitored monthly to detect leaks by the methods specified in §60.485(b) and shall comply with paragraphs (b) through (e), except as provided in paragraphs (f), (g), and (h), §60.483-1, 2, and §60.482-1(c).~~
- ~~(b) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.~~
- ~~(c) (1) Any valve for which a leak is not detected for 2 successive months may be monitored the first month of every quarter, beginning with the next quarter, until a leak is detected.~~
- ~~(2) If a leak is detected, the valve shall be monitored monthly until a leak is not detected for 2 successive months.~~
- ~~(d) (1) When a leak is detected, it shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in §60.482-9.~~
- ~~(2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.~~
- ~~(e) First attempts at repair include, but are not limited to, the following best practices where practicable:~~
- ~~(1) Tightening of bonnet bolts;~~

- (2) — Replacement of bonnet bolts;
- (3) — Tightening of packing gland nuts;
- (4) — Injection of lubricant into lubricated packing.

[48 FR 48335, Oct. 18, 1983, as amended at 49 FR 22608, May 30, 1984; 65 FR 61762, Oct. 17, 2000]

~~§ 60.482-8 Standards: Pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and connectors.~~

- (a) — ~~If evidence of a potential leak is found by visual, audible, olfactory, or any other detection method at pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and connectors, the owner or operator shall follow either one of the following procedures:~~
 - (1) — ~~The owner or operator shall monitor the equipment within 5 days by the method specified in §60.485(b) and shall comply with the requirements of paragraphs (b) through (d) of this section.~~
 - (2) — ~~The owner or operator shall eliminate the visual, audible, olfactory, or other indication of a potential leak.~~
- (b) — ~~If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.~~
- (c) — (1) — ~~When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in §60.482-9.~~
 - (2) — ~~The first attempt at repair shall be made no later than 5 calendar days after each leak is detected.~~
- (d) — ~~First attempts at repair include, but are not limited to, the best practices described under §60.482-7(e).~~

[48 CFR 48335, Oct. 18, 1983, as amended at 65 FR 78277, Dec. 14, 2000]

~~§ 60.482-9 Standards: Delay of repair.~~

- (a) — ~~Delay of repair of equipment for which leaks have been detected will be allowed if repair within 15 days is technically infeasible without a process unit shutdown. Repair of this equipment shall occur before the end of the next process unit shutdown.~~
- (b) — ~~Delay of repair of equipment will be allowed for equipment which is isolated from the process and which does not remain in VOC service.~~
- (c) — ~~Delay of repair for valves will be allowed if:~~
 - (1) — ~~The owner or operator demonstrates that emissions of purged material resulting from immediate repair are greater than the fugitive emissions likely to result from delay of repair, and~~
 - (2) — ~~When repair procedures are effected, the purged material is collected and destroyed or recovered in a control device complying with §60.482-10.~~

- (d) ~~Delay of repair for pumps will be allowed if:~~
- (1) ~~Repair requires the use of a dual mechanical seal system that includes a barrier fluid system, and~~
 - (2) ~~Repair is completed as soon as practicable, but not later than 6 months after the leak was detected.~~
- (e) ~~Delay of repair beyond a process unit shutdown will be allowed for a valve, if valve assembly replacement is necessary during the process unit shutdown, valve assembly supplies have been depleted, and valve assembly supplies had been sufficiently stocked before the supplies were depleted. Delay of repair beyond the next process unit shutdown will not be allowed unless the next process unit shutdown occurs sooner than 6 months after the first process unit shutdown.~~

[48 FR 48335, Oct. 18, 1983, as amended at 65 FR 78277, Dec. 14, 2000]

~~§ 60.482-10 Standards: Closed vent systems and control devices.~~

- (a) ~~Owners or operators of closed vent systems and control devices used to comply with provisions of this subpart shall comply with the provisions of this section.~~
- (b) ~~Vapor recovery systems (for example, condensers and absorbers) shall be designed and operated to recover the VOC emissions vented to them with an efficiency of 95 percent or greater, or to an exit concentration of 20 parts per million by volume, whichever is less stringent.~~
- (c) ~~Enclosed combustion devices shall be designed and operated to reduce the VOC emissions vented to them with an efficiency of 95 percent or greater, or to an exit concentration of 20 parts per million by volume, on a dry basis, corrected to 3 percent oxygen, whichever is less stringent or to provide a minimum residence time of 0.75 seconds at a minimum temperature of 816 °C.~~
- (d) ~~Flares used to comply with this subpart shall comply with the requirements of §60.18.~~
- (e) ~~Owners or operators of control devices used to comply with the provisions of this subpart shall monitor these control devices to ensure that they are operated and maintained in conformance with their designs.~~
- (f) ~~Except as provided in paragraphs (i) through (k) of this section, each closed vent system shall be inspected according to the procedures and schedule specified in paragraphs (f)(1) and (f)(2) of this section.~~
- (1) ~~If the vapor collection system or closed vent system is constructed of hard piping, the owner or operator shall comply with the requirements specified in paragraphs (f)(1)(i) and (f)(1)(ii) of this section:~~
 - (i) ~~Conduct an initial inspection according to the procedures in §60.485(b); and~~
 - (ii) ~~Conduct annual visual inspections for visible, audible, or olfactory indications of leaks.~~
 - (2) ~~If the vapor collection system or closed vent system is constructed of ductwork, the owner or operator shall:~~
 - (i) ~~Conduct an initial inspection according to the procedures in §60.485(b); and~~
 - (ii) ~~Conduct annual inspections according to the procedures in §60.485(b).~~

- ~~(g) — Leaks, as indicated by an instrument reading greater than 500 parts per million by volume above background or by visual inspections, shall be repaired as soon as practicable except as provided in paragraph (h) of this section.~~
- ~~(1) — A first attempt at repair shall be made no later than 5 calendar days after the leak is detected.~~
- ~~(2) — Repair shall be completed no later than 15 calendar days after the leak is detected.~~
- ~~(h) — Delay of repair of a closed vent system for which leaks have been detected is allowed if the repair is technically infeasible without a process unit shutdown or if the owner or operator determines that emissions resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair. Repair of such equipment shall be complete by the end of the next process unit shutdown.~~
- ~~(i) — If a vapor collection system or closed vent system is operated under a vacuum, it is exempt from the inspection requirements of paragraphs (f)(1)(i) and (f)(2) of this section.~~
- ~~(j) — Any parts of the closed vent system that are designated, as described in paragraph (l)(1) of this section, as unsafe to inspect are exempt from the inspection requirements of paragraphs (f)(1)(i) and (f)(2) of this section if they comply with the requirements specified in paragraphs (j)(1) and (j)(2) of this section:~~
- ~~(1) — The owner or operator determines that the equipment is unsafe to inspect because inspecting personnel would be exposed to an imminent or potential danger as a consequence of complying with paragraphs (f)(1)(i) or (f)(2) of this section; and~~
- ~~(2) — The owner or operator has a written plan that requires inspection of the equipment as frequently as practicable during safe-to-inspect times.~~
- ~~(k) — Any parts of the closed vent system that are designated, as described in paragraph (l)(2) of this section, as difficult to inspect are exempt from the inspection requirements of paragraphs (f)(1)(i) and (f)(2) of this section if they comply with the requirements specified in paragraphs (k)(1) through (k)(3) of this section:~~
- ~~(1) — The owner or operator determines that the equipment cannot be inspected without elevating the inspecting personnel more than 2 meters above a support surface; and~~
- ~~(2) — The process unit within which the closed vent system is located becomes an affected facility through §§60.14 or 60.15, or the owner or operator designates less than 3.0 percent of the total number of closed vent system equipment as difficult to inspect; and~~
- ~~(3) — The owner or operator has a written plan that requires inspection of the equipment at least once every 5 years. A closed vent system is exempt from inspection if it is operated under a vacuum.~~
- ~~(l) — The owner or operator shall record the information specified in paragraphs (l)(1) through (l)(5) of this section.~~
- ~~(1) — Identification of all parts of the closed vent system that are designated as unsafe to inspect, an explanation of why the equipment is unsafe to inspect, and the plan for inspecting the equipment.~~
- ~~(2) — Identification of all parts of the closed vent system that are designated as difficult to inspect, an explanation of why the equipment is difficult to inspect, and the plan for inspecting the equipment.~~

- (3) ~~For each inspection during which a leak is detected, a record of the information specified in §60.486(c).~~
- (4) ~~For each inspection conducted in accordance with §60.485(b) during which no leaks are detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected.~~
- (5) ~~For each visual inspection conducted in accordance with paragraph (f)(1)(ii) of this section during which no leaks are detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected.~~
- (m) ~~Closed vent systems and control devices used to comply with provisions of this subpart shall be operated at all times when emissions may be vented to them.~~

[48 FR 48335, Oct. 18, 1983, as amended at 51 FR 2702, Jan. 21, 1986; 60 FR 43258, Aug. 18, 1995; 61 FR 29878, June 12, 1996; 65 FR 78277, Dec. 14, 2000]

§ 60.483-1 Alternative standards for valves—allowable percentage of valves leaking.

- (a) ~~An owner or operator may elect to comply with an allowable percentage of valves leaking of equal to or less than 2.0 percent.~~
- (b) ~~The following requirements shall be met if an owner or operator wishes to comply with an allowable percentage of valves leaking:~~
 - (1) ~~An owner or operator must notify the Administrator that the owner or operator has elected to comply with the allowable percentage of valves leaking before implementing this alternative standard, as specified in §60.487(d).~~
 - (2) ~~A performance test as specified in paragraph (c) of this section shall be conducted initially upon designation, annually, and at other times requested by the Administrator.~~
 - (3) ~~If a valve leak is detected, it shall be repaired in accordance with §60.482-7(d) and (e).~~
- (c) ~~Performance tests shall be conducted in the following manner:~~
 - (1) ~~All valves in gas/vapor and light liquid service within the affected facility shall be monitored within 1 week by the methods specified in §60.485(b).~~
 - (2) ~~If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.~~
 - (3) ~~The leak percentage shall be determined by dividing the number of valves for which leaks are detected by the number of valves in gas/vapor and light liquid service within the affected facility.~~
- (d) ~~Owners and operators who elect to comply with this alternative standard shall not have an affected facility with a leak percentage greater than 2.0 percent.~~

[48 FR 48335, Oct. 18, 1983, as amended at 65 FR 61762, Oct. 17, 2000; 65 FR 78278, Dec. 14, 2000]

§ 60.483-2 Alternative standards for valves—skip period leak detection and repair.

- (a) (1) ~~An owner or operator may elect to comply with one of the alternative work practices specified in paragraphs (b)(2) and (3) of this section.~~

- ~~(2) — An owner or operator must notify the Administrator before implementing one of the alternative work practices, as specified in §60.487(d).~~
- ~~(b) — (1) — An owner or operator shall comply initially with the requirements for valves in gas/vapor service and valves in light liquid service, as described in §60.482–7.~~
 - ~~(2) — After 2 consecutive quarterly leak detection periods with the percent of valves leaking equal to or less than 2.0, an owner or operator may begin to skip 1 of the quarterly leak detection periods for the valves in gas/vapor and light liquid service.~~
 - ~~(3) — After 5 consecutive quarterly leak detection periods with the percent of valves leaking equal to or less than 2.0, an owner or operator may begin to skip 3 of the quarterly leak detection periods for the valves in gas/vapor and light liquid service.~~
 - ~~(4) — If the percent of valves leaking is greater than 2.0, the owner or operator shall comply with the requirements as described in §60.482–7 but can again elect to use this section.~~
 - ~~(5) — The percent of valves leaking shall be determined by dividing the sum of valves found leaking during current monitoring and valves for which repair has been delayed by the total number of valves subject to the requirements of this section.~~
 - ~~(6) — An owner or operator must keep a record of the percent of valves found leaking during each leak detection period.~~

[48 FR 48335, Oct. 18, 1983, as amended at 65 FR 61762, Oct. 17, 2000; 65 FR 78278, Dec. 14, 2000]

~~§ 60.484 — Equivalence of means of emission limitation.~~

- ~~(a) — Each owner or operator subject to the provisions of this subpart may apply to the Administrator for determination of equivalence for any means of emission limitation that achieves a reduction in emissions of VOC at least equivalent to the reduction in emissions of VOC achieved by the controls required in this subpart.~~
- ~~(b) — Determination of equivalence to the equipment, design, and operational requirements of this subpart will be evaluated by the following guidelines:
 - ~~(1) — Each owner or operator applying for an equivalence determination shall be responsible for collecting and verifying test data to demonstrate equivalence of means of emission limitation.~~
 - ~~(2) — The Administrator will compare test data for the means of emission limitation to test data for the equipment, design, and operational requirements.~~
 - ~~(3) — The Administrator may condition the approval of equivalence on requirements that may be necessary to assure operation and maintenance to achieve the same emission reduction as the equipment, design, and operational requirements.~~~~
- ~~(c) — Determination of equivalence to the required work practices in this subpart will be evaluated by the following guidelines:
 - ~~(1) — Each owner or operator applying for a determination of equivalence shall be responsible for collecting and verifying test data to demonstrate equivalence of an equivalent means of emission limitation.~~
 - ~~(2) — For each affected facility for which a determination of equivalence is requested, the emission reduction achieved by the required work practice shall be demonstrated.~~~~

- ~~(3) For each affected facility, for which a determination of equivalence is requested, the emission reduction achieved by the equivalent means of emission limitation shall be demonstrated.~~
- ~~(4) Each owner or operator applying for a determination of equivalence shall commit in writing to work practice(s) that provide for emission reductions equal to or greater than the emission reductions achieved by the required work practice.~~
- ~~(5) The Administrator will compare the demonstrated emission reduction for the equivalent means of emission limitation to the demonstrated emission reduction for the required work practices and will consider the commitment in paragraph (c)(4).~~
- ~~(6) The Administrator may condition the approval of equivalence on requirements that may be necessary to assure operation and maintenance to achieve the same emission reduction as the required work practice.~~
- ~~(d) An owner or operator may offer a unique approach to demonstrate the equivalence of any equivalent means of emission limitation.~~
- ~~(e) (1) After a request for determination of equivalence is received, the Administrator will publish a notice in the Federal Register and provide the opportunity for public hearing if the Administrator judges that the request may be approved.~~
 - ~~(2) After notice and opportunity for public hearing, the Administrator will determine the equivalence of a means of emission limitation and will publish the determination in the Federal Register.~~
 - ~~(3) Any equivalent means of emission limitations approved under this section shall constitute a required work practice, equipment, design, or operational standard within the meaning of section 111(h)(1) of the Clean Air Act.~~
- ~~(f) (1) Manufacturers of equipment used to control equipment leaks of VOC may apply to the Administrator for determination of equivalence for any equivalent means of emission limitation that achieves a reduction in emissions of VOC achieved by the equipment, design, and operational requirements of this subpart.~~
 - ~~(2) The Administrator will make an equivalence determination according to the provisions of paragraphs (b), (c), (d), and (e) of this section.~~

[48 FR 48335, Oct. 18, 1983, as amended at 65 FR 61762, Oct. 17, 2000]

~~§ 60.485 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 standards in §§60.482, 60.483, and 60.484 as follows:
 - ~~(1) Method 21 shall be used to determine the presence of leaking sources. The instrument shall be calibrated before use each day of its use by the procedures specified in Method 21. The following calibration gases shall be used:
 - ~~(i) Zero air (less than 10 ppm of hydrocarbon in air); and~~~~~~

- (ii) ~~A mixture of methane or n-hexane and air at a concentration of about, but less than, 10,000 ppm methane or n-hexane.~~
- (c) ~~The owner or operator shall determine compliance with the no-detectable emission standards in §§60.482-2(e), 60.482-3(i), 60.482-4, 60.482-7(f), and 60.482-10(e) as follows:~~

 - (1) ~~The requirements of paragraph (b) shall apply.~~
 - (2) ~~Method 21 shall be used to determine the background level. All potential leak interfaces shall be traversed as close to the interface as possible. The arithmetic difference between the maximum concentration indicated by the instrument and the background level is compared with 500 ppm for determining compliance.~~
- (d) ~~The owner or operator shall test each piece of equipment unless he demonstrates that a process unit is not in VOC service, i.e., that the VOC content would never be reasonably expected to exceed 10 percent by weight. For purposes of this demonstration, the following methods and procedures shall be used:~~

 - (1) ~~Procedures that conform to the general methods in ASTM E260-73, 91, or 96, E168-67, 77, or 92, E169-63, 77, or 93 (incorporated by reference—see §60.17) shall be used to determine the percent VOC content in the process fluid that is contained in or contacts a piece of equipment.~~
 - (2) ~~Organic compounds that are considered by the Administrator to have negligible photochemical reactivity may be excluded from the total quantity of organic compounds in determining the VOC content of the process fluid.~~
 - (3) ~~Engineering judgment may be used to estimate the VOC content, if a piece of equipment had not been shown previously to be in service. If the Administrator disagrees with the judgment, paragraphs (d) (1) and (2) of this section shall be used to resolve the disagreement.~~
- (e) ~~The owner or operator shall demonstrate that equipment is in light liquid service by showing that all the following conditions apply:~~

 - (1) ~~The vapor pressure of one or more of the components is greater than 0.3 kPa at 20 °C (1.2 in. H₂O at 68 °F). Standard reference texts or ASTM D2879-83, 96, or 97 (incorporated by reference—see §60.17) shall be used to determine the vapor pressures.~~
 - (2) ~~The total concentration of the pure components having a vapor pressure greater than 0.3 kPa at 20 °C (1.2 in. H₂O at 68 °F) is equal to or greater than 20 percent by weight.~~
 - (3) ~~The fluid is a liquid at operating conditions.~~
- (f) ~~Samples used in conjunction with paragraphs (d), (e), and (g) of this section shall be representative of the process fluid that is contained in or contacts the equipment or the gas being combusted in the flare.~~
- (g) ~~The owner or operator shall determine compliance with the standards of flares as follows:~~

 - (1) ~~Method 22 shall be used to determine visible emissions.~~
 - (2) ~~A thermocouple or any other equivalent device shall be used to monitor the presence of a pilot flame in the flare.~~

- (3) ~~The maximum permitted velocity for air assisted flares shall be computed using the following equation:~~

$$V_{\max} = K_1 + K_2 \times H_T$$

Where:

~~V_{max} = Maximum permitted velocity, m/sec (ft/sec)~~

~~H_T = Net heating value of the gas being combusted, MJ/scm (Btu/scf).~~

~~K₁ = 8.706 m/sec (metric units)~~

~~= 28.56 ft/sec (English units)~~

~~K₂ = 0.7084 m⁴/(MJ-sec) (metric units)~~

~~= 0.087 ft⁴/(Btu-sec) (English units)~~

- (4) ~~The net heating value (HT) of the gas being combusted in a flare shall be computed using the following equation:~~

$$H_T = K \sum_{i=1}^n C_i H_i$$

Where:

~~K = Conversion constant, 1.740 × 10⁷ (g-mole)(MJ)/(ppm-scm-kcal) (metric units)~~

~~= 4.674 × 10⁸ [(g-mole)(Btu)/(ppm-scf-kcal)] (English units)~~

~~C_i = Concentration of sample component "i," ppm~~

~~H_i = net heat of combustion of sample component "i" at 25 °C and 760 mm Hg (77 °F and 14.7 psi), kcal/g-mole~~

- (5) ~~Method 18 and ASTM D2504-67, 77, or 88 (Reapproved 1993) (incorporated by reference—see §60.17) shall be used to determine the concentration of sample component "i."~~
- (6) ~~ASTM D2382-76 or 88 or D4809-95 (incorporated by reference—see §60.17) shall be used to determine the net heat of combustion of component "i" if published values are not available or cannot be calculated.~~
- (7) ~~Method 2, 2A, 2C, or 2D, as appropriate, shall be used to determine the actual exit velocity of a flare. If needed, the unobstructed (free) cross-sectional area of the flare tip shall be used.~~

[54 FR 6678, Feb. 14, 1989, as amended at 54 FR 27016, June 27, 1989; 65 FR 61763, Oct. 17, 2000]

§ 60.486 Recordkeeping requirements.

- (a) (1) ~~Each owner or operator subject to the provisions of this subpart shall comply with the recordkeeping requirements of this section.~~
- (2) ~~An owner or operator of more than one affected facility subject to the provisions of this subpart may comply with the recordkeeping requirements for these facilities in one recordkeeping system if the system identifies each record by each facility.~~
- (b) ~~When each leak is detected as specified in §§60.482-2, 60.482-3, 60.482-7, 60.482-8, and 60.483-2, the following requirements apply:~~
- (1) ~~A weatherproof and readily visible identification, marked with the equipment identification number, shall be attached to the leaking equipment.~~

- ~~(2) The identification on a valve may be removed after it has been monitored for 2 successive months as specified in §60.482-7(c) and no leak has been detected during those 2 months.~~
- ~~(3) The identification on equipment except on a valve, may be removed after it has been repaired.~~
- ~~(c) When each leak is detected as specified in §§60.482-2, 60.482-3, 60.482-7, 60.482-8, and 60.483-2, the following information shall be recorded in a log and shall be kept for 2 years in a readily accessible location:
 - ~~(1) The instrument and operator identification numbers and the equipment identification number.~~
 - ~~(2) The date the leak was detected and the dates of each attempt to repair the leak.~~
 - ~~(3) Repair methods applied in each attempt to repair the leak.~~
 - ~~(4) "Above 10,000" if the maximum instrument reading measured by the methods specified in §60.485(a) after each repair attempt is equal to or greater than 10,000 ppm.~~
 - ~~(5) "Repair delayed" and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak.~~
 - ~~(6) The signature of the owner or operator (or designate) whose decision it was that repair could not be effected without a process shutdown.~~
 - ~~(7) The expected date of successful repair of the leak if a leak is not repaired within 15 days.~~
 - ~~(8) Dates of process unit shutdowns that occur while the equipment is unrepaired.~~
 - ~~(9) The date of successful repair of the leak.~~~~
- ~~(d) The following information pertaining to the design requirements for closed vent systems and control devices described in §60.482-10 shall be recorded and kept in a readily accessible location:
 - ~~(1) Detailed schematics, design specifications, and piping and instrumentation diagrams.~~
 - ~~(2) The dates and descriptions of any changes in the design specifications.~~
 - ~~(3) A description of the parameter or parameters monitored, as required in §60.482-10(e), to ensure that control devices are operated and maintained in conformance with their design and an explanation of why that parameter (or parameters) was selected for the monitoring.~~
 - ~~(4) Periods when the closed vent systems and control devices required in §§60.482-2, 60.482-3, 60.482-4, and 60.482-5 are not operated as designed, including periods when a flare pilot light does not have a flame.~~
 - ~~(5) Dates of startups and shutdowns of the closed vent systems and control devices required in §§60.482-2, 60.482-3, 60.482-4, and 60.482-5.~~~~
- ~~(e) The following information pertaining to all equipment subject to the requirements in §§60.482-1 to 60.482-10 shall be recorded in a log that is kept in a readily accessible location:~~

- ~~(1) — A list of identification numbers for equipment subject to the requirements of this subpart.~~
- ~~(2) — (i) — A list of identification numbers for equipment that are designated for no detectable emissions under the provisions of §§60.482-2(e), 60.482-3(i) and 60.482-7(f).~~
 - ~~(ii) — The designation of equipment as subject to the requirements of §60.482-2(e), §60.482-3(i), or §60.482-7(f) shall be signed by the owner or operator.~~
- ~~(3) — A list of equipment identification numbers for pressure relief devices required to comply with §60.482-4.~~
- ~~(4) — (i) — The dates of each compliance test as required in §§60.482-2(e), 60.482-3(i), 60.482-4, and 60.482-7(f).~~
 - ~~(ii) — The background level measured during each compliance test.~~
 - ~~(iii) — The maximum instrument reading measured at the equipment during each compliance test.~~
- ~~(5) — A list of identification numbers for equipment in vacuum service.~~
- ~~(g) — The following information shall be recorded for valves complying with §60.483-2:~~
 - ~~(1) — A schedule of monitoring.~~
 - ~~(2) — The percent of valves found leaking during each monitoring period.~~
- ~~(j) — Information and data used to demonstrate that a piece of equipment is not in VOC service shall be recorded in a log that is kept in a readily accessible location.~~
- ~~(k) — The provisions of §60.7 (b) and (d) do not apply to affected facilities subject to this subpart.~~

[48 FR 48335, Oct. 18, 1983, as amended at 65 FR 61763, Oct. 17, 2000; 65 FR 78278, Dec. 14, 2000]

§ 60.487 — Reporting requirements.

- ~~(a) — Each owner or operator subject to the provisions of this subpart shall submit semiannual reports to the Administrator beginning six months after the initial startup date.~~
- ~~(b) — The initial semiannual report to the Administrator shall include the following information:~~
 - ~~(1) — Process unit identification.~~
 - ~~(2) — Number of valves subject to the requirements of §60.482-7, excluding those valves designated for no detectable emissions under the provisions of §60.482-7(f).~~
 - ~~(3) — Number of pumps subject to the requirements of §60.482-2, excluding those pumps designated for no detectable emissions under the provisions of §60.482-2(e) and those pumps complying with §60.482-2(f).~~
 - ~~(4) — Number of compressors subject to the requirements of §60.482-3, excluding those compressors designated for no detectable emissions under the provisions of §60.482-3(i) and those compressors complying with §60.482-3(h).~~

- (c) ~~All semiannual reports to the Administrator shall include the following information, summarized from the information in §60.486:~~
- (1) ~~Process unit identification.~~
 - (2) ~~For each month during the semiannual reporting period,~~
 - (i) ~~Number of valves for which leaks were detected as described in §60.482(7)(b) or §60.483-2,~~
 - (ii) ~~Number of valves for which leaks were not repaired as required in §60.482-7(d)(1),~~
 - (iii) ~~Number of pumps for which leaks were detected as described in §60.482-2(b) and (d)(6)(i),~~
 - (iv) ~~Number of pumps for which leaks were not repaired as required in §60.482-2(c)(1) and (d)(6)(ii),~~
 - (v) ~~Number of compressors for which leaks were detected as described in §60.482-3(f),~~
 - (vi) ~~Number of compressors for which leaks were not repaired as required in §60.482-3(g)(1), and~~
 - (vii) ~~The facts that explain each delay of repair and, where appropriate, why a process unit shutdown was technically infeasible.~~
 - (3) ~~Dates of process unit shutdowns which occurred within the semiannual reporting period.~~
 - (4) ~~Revisions to items reported according to paragraph (b) if changes have occurred since the initial report or subsequent revisions to the initial report.~~
- (d) ~~An owner or operator electing to comply with the provisions of §§60.483-1 or 60.483-2 shall notify the Administrator of the alternative standard selected 90 days before implementing either of the provisions.~~
- (e) ~~An owner or operator shall report the results of all performance tests in accordance with §60.8 of the General Provisions. The provisions of §60.8(d) do not apply to affected facilities subject to the provisions of this subpart except that an owner or operator must notify the Administrator of the schedule for the initial performance tests at least 30 days before the initial performance tests.~~
- (f) ~~The requirements of paragraphs (a) through (c) of this section remain in force until and unless EPA, 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 State. In that event, affected sources within the State will be relieved of the obligation to comply with the requirements of paragraphs (a) through (c) of this section, provided that they comply with the requirements established by the State.~~

§ 60.488 — Reconstruction.

For the purposes of this subpart:

- (a) — The cost of the following frequently replaced components of the facility shall not be considered in calculating either the “fixed capital cost of the new components” or the “fixed capital costs that would be required to construct a comparable new facility” under §60.15: pump seals, nuts and bolts, rupture disks, and packings.
- (b) — Under §60.15, the “fixed capital cost of new components” includes the fixed capital cost of all depreciable components (except components specified in §60.488 (a)) which are or will be replaced pursuant to all continuous programs of component replacement which are commenced within any 2-year period following the applicability date for the appropriate subpart. (See the “Applicability and designation of affected facility” section of the appropriate subpart). For purposes of this paragraph, “commenced” means that an owner or operator has undertaken a continuous program of component replacement or that an owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of component replacement.

[49 FR 22608, May 30, 1984]

§ 60.489 — List of chemicals produced by affected facilities.

The following chemicals are produced, as intermediates or final products, by process units covered under this subpart. The applicability date for process units producing one or more of these chemicals is January 5, 1981.

CAS No. ^a	Chemical
105-57-7	Acetal.
75-07-0	Acetaldehyde.
107-89-1	Acetaldo.
60-35-5	Acetamide.
103-84-4	Acetanilide.
64-19-7	Acetic acid.
108-24-7	Acetic anhydride.
67-64-1	Acetone.
75-86-5	Acetone cyanohydrin.
75-05-8	Acetonitrile.
98-86-2	Acetophenone.
75-36-5	Acetyl chloride.
74-86-2	Acetylene.
107-02-8	Acrolein.

CAS No. ^a	Chemical
79-06-1	Acrylamide.
79-10-7	Acrylic acid.
107-13-1	Acrylonitrile.
124-04-9	Adipic acid.
111-69-3	Adiponitrile.
(b)	Alkyl naphthalenes.
107-18-6	Allyl alcohol.
107-05-1	Allyl chloride.
1321-11-5	Aminobenzoic acid.
111-41-1	Aminoethylethanolamine.
123-30-8	p-Aminophenol.
628-63-7, 123-92-2	Amyl acetates.
71-41-0 ^e	Amyl alcohols.
110-58-7	Amyl amine.
543-59-9	Amyl chloride.
110-66-7 ^e	Amyl mercaptans.
1322-06-1	Amyl phenol.
62-53-3	Aniline.
142-04-1	Aniline hydrochloride.
29191-52-4	Anisidine.
100-66-3	Anisole.
118-92-3	Anthranilic acid.
84-65-1	Anthraquinone.
100-52-7	Benzaldehyde.
55-21-0	Benzamide.
71-43-2	Benzene.
98-48-6	Benzenedisulfonic acid.
98-11-3	Benzenesulfonic acid.

CAS No. ^a	Chemical
134-81-6	Benzil.
76-93-7	Benzilic acid.
65-85-0	Benzoic acid.
119-53-9	Benzoin.
100-47-0	Benzonitrile.
119-61-9	Benzophenone.
98-07-7	Benzotrichloride.
98-88-4	Benzoyl chloride.
100-51-6	Benzyl alcohol.
100-46-9	Benzylamine.
120-51-4	Benzyl benzoate.
100-44-7	Benzyl chloride.
98-87-3	Benzyl dichloride.
92-52-4	Biphenyl.
80-05-7	Bisphenol A.
10-86-1	Bromobenzene.
27497-51-4	Bromonaphthalene.
106-99-0	Butadiene.
106-98-9	1-butene.
123-86-4	n-butyl acetate.
141-32-2	n-butyl acrylate.
71-36-3	n-butyl alcohol.
78-92-2	s-butyl alcohol.
75-65-0	t-butyl alcohol.
109-73-9	n-butylamine.
13952-84-6	s-butylamine.
75-64-9	t-butylamine.
98-73-7	p-tert-butyl benzoic acid.

CAS No. ^a	Chemical
107-88-0	1,3-butylene glycol.
123-72-8	n-butyraldehyde.
107-92-6	Butyric acid.
106-31-0	Butyric anhydride.
109-74-0	Butyronitrile.
105-60-2	Caprolactam.
75-1-50	Carbon disulfide.
558-13-4	Carbon tetrabromide.
56-23-5	Carbon tetrachloride.
9004-35-7	Cellulose acetate.
79-11-8	Chloroacetic acid.
108-42-9	m-chloroaniline.
95-51-2	o-chloroaniline.
106-47-8	p-chloroaniline.
35913-09-8	Chlorobenzaldehyde.
108-90-7	Chlorobenzene.
118-91-2, 535-80-8, 74-11-3 ^c	Chlorobenzoic acid.
2136-81-4, 2136-89-2, 5216-25-1 ^e	Chlorobenzotrichloride.
1321-03-5	Chlorobenzoyl chloride.
25497-29-4	Chlorodifluoromethane.
75-45-6	Chlorodifluoroethane.
67-66-3	Chloroform.
25586-43-0	Chloronaphthalene.
88-73-3	o-chloronitrobenzene.
100-00-5	p-chloronitrobenzene.
25167-80-0	Chlorophenols.
126-99-8	Chloroprene.
7790-94-5	Chlorosulfonic acid.

CAS No. ^a	Chemical
108-41-8	m-chlorotoluene.
95-49-8	o-chlorotoluene.
106-43-4	p-chlorotoluene.
75-72-9	Chlorotrifluoromethane.
108-39-4	m-cresol.
95-48-7	o-cresol.
106-44-5	p-cresol.
1319-77-3	Mixed cresols.
1319-77-3	Cresylic acid.
4170-30-0	Crotonaldehyde.
3724-65-0	Crotonic acid.
98-82-8	Cumene.
80-15-9	Cumene hydroperoxide.
372-09-8	Cyanoacetic acid.
506-77-4	Cyanogen chloride.
108-80-5	Cyanuric acid.
108-77-0	Cyanuric chloride.
110-82-7	Cyclohexane.
108-93-0	Cyclohexanol.
108-94-1	Cyclohexanone.
110-83-8	Cyclohexene.
108-91-8	Cyclohexylamine.
111-78-4	Cyclooctadiene.
112-30-1	Decanol.
123-42-2	Diacetone alcohol.
27576-04-1	Diaminobenzoic acid.
95-76-1, 95-82-9, 554-00-7, 608-27-5, 608-31-1, 626-43-7, 27134-27-6, 57311-92-9e	Dichloroaniline.

CAS No. ^a	Chemical
541-73-1	m-dichlorobenzene.
95-50-1	o-dichlorobenzene.
106-46-7	p-dichlorobenzene.
75-71-8	Dichlorodifluoromethane.
111-44-4	Dichloroethyl ether.
107-06-2	1,2-dichloroethane (EDC).
96-23-1	Dichlorohydrin.
26952-23-8	Dichloropropene.
101-83-7	Dicyclohexylamine.
109-89-7	Diethylamine.
111-46-6	Diethylene glycol.
112-36-7	Diethylene glycol diethyl ether.
111-96-6	Diethylene glycol dimethyl ether.
112-34-5	Diethylene glycol monobutyl ether.
124-17-4	Diethylene glycol monobutyl ether acetate.
111-90-0	Diethylene glycol monoethyl ether.
112-15-2	Diethylene glycol monoethyl ether acetate.
111-77-3	Diethylene glycol monomethyl ether.
64-67-5	Diethyl sulfate.
75-37-6	Difluoroethane.
25167-70-8	Diisobutylene.
26761-40-0	Diisodecyl phthalate.
27554-26-3	Diisooctyl phthalate.
674-82-8	Diketene.
124-40-3	Dimethylamine.
121-69-7	N,N-dimethylaniline.
115-10-6	N,N-dimethyl ether.
68-12-2	N,N-dimethylformamide.

CAS No. ^a	Chemical
57-14-7	Dimethylhydrazine.
77-78-1	Dimethyl sulfate.
75-18-3	Dimethyl sulfide.
67-68-5	Dimethyl sulfoxide.
120-61-6	Dimethyl terephthalate.
99-34-3	3,5-dinitrobenzoic acid.
51-28-5	Dinitrophenol.
25321-14-6	Dinitrotoluene.
123-91-1	Dioxane.
646-06-0	Dioxilane.
122-39-4	Diphenylamine.
101-84-8	Diphenyl oxide.
102-08-9	Diphenyl thiourea.
25265-71-8	Dipropylene glycol.
25378-22-7	Dodecene.
28675-17-4	Dodecylaniline.
27193-86-8	Dodecylphenol.
106-89-8	Epichlorohydrin.
64-17-5	Ethanol.
141-43-5 ^e	Ethanolamines.
141-78-6	Ethyl acetate.
141-97-9	Ethyl acetoacetate.
140-88-5	Ethyl acrylate.
75-04-7	Ethylamine.
100-41-4	Ethylbenzene.
74-96-4	Ethyl bromide.
9004-57-3	Ethylcellulose.
75-00-3	Ethyl chloride.

CAS No. ^a	Chemical
105-39-5	Ethyl chloroacetate.
105-56-6	Ethylcyanoacetate.
74-85-4	Ethylene.
96-49-1	Ethylene carbonate.
107-07-3	Ethylene chlorohydrin.
107-15-3	Ethylenediamine.
106-93-4	Ethylene dibromide.
107-21-4	Ethylene glycol.
111-55-7	Ethylene glycol diacetate.
110-71-4	Ethylene glycol dimethyl ether.
111-76-2	Ethylene glycol monobutyl ether.
112-07-2	Ethylene glycol monobutyl ether acetate.
110-80-5	Ethylene glycol monoethyl ether.
111-15-9	Ethylene glycol monoethyl ether acetate.
109-86-4	Ethylene glycol monomethyl ether.
110-49-6	Ethylene glycol monomethyl ether acetate.
122-99-6	Ethylene glycol monophenyl ether.
2807-30-9	Ethylene glycol monopropyl ether.
75-21-8	Ethylene oxide.
60-29-7	Ethyl ether
104-76-7	2-ethylhexanol.
122-51-0	Ethyl orthoformate.
95-92-1	Ethyl oxalate.
41892-71-1	Ethyl sodium oxalacetate.
50-00-0	Formaldehyde.
75-12-7	Formamide.
64-18-6	Formic acid.
110-17-8	Fumaric acid.

CAS No. ^a	Chemical
98-01-1	Furfural.
56-81-5	Glycerol.
26545-73-7	Glycerol dichlorohydrin.
25791-96-2	Glycerol triether.
56-40-6	Glycine.
107-22-2	Glyoxal.
118-74-1	Hexachlorobenzene.
67-72-1	Hexachloroethane.
36653-82-4	Hexadecyl alcohol.
124-09-4	Hexamethylenediamine.
629-11-8	Hexamethylene glycol.
100-97-0	Hexamethylenetetramine.
74-90-8	Hydrogen cyanide.
123-31-9	Hydroquinone.
99-96-7	p-hydroxybenzoic acid.
26760-64-5	Isoamylene.
78-83-1	Isobutanol.
110-19-0	Isobutyl acetate.
115-11-7	Isobutylene.
78-84-2	Isobutyraldehyde.
79-31-2	Isobutyric acid.
25339-17-7	Isodecanol.
26952-21-6	Isooctyl alcohol.
78-78-4	Isopentane.
78-59-1	Isophorone.
121-91-5	Isophthalic acid.
78-79-5	Isoprene.
67-63-0	Isopropanol.

CAS No. ^a	Chemical
108-21-4	Isopropyl acetate.
75-31-0	Isopropylamine.
75-29-6	Isopropyl chloride.
25168-06-3	Isopropylphenol.
463-51-4	Ketene.
(b)	Linear alkyl sulfonate.
123-01-3	Linear alkylbenzene (linear dodecylbenzene).
110-16-7	Maleic acid.
108-31-6	Maleic anhydride.
6915-15-7	Malic acid.
141-79-7	Mesityl oxide.
121-47-1	Metanilic acid.
79-41-4	Methacrylic acid.
563-47-3	Methallyl chloride.
67-56-1	Methanol.
79-20-9	Methyl acetate.
105-45-3	Methyl acetoacetate.
74-89-5	Methylamine.
100-61-8	n-methylaniline.
74-83-9	Methyl bromide.
37365-71-2	Methyl butynol.
74-87-3	Methyl chloride.
108-87-2	Methylcyclohexane.
1331-22-2	Methylcyclohexanone.
75-09-2	Methylene chloride.
101-77-9	Methylene dianiline.
101-68-8	Methylene diphenyl diisocyanate.
78-93-3	Methyl ethyl ketone.

CAS No. ^a	Chemical
107-31-3	Methyl formate.
108-11-2	Methyl isobutyl carbinol.
108-10-1	Methyl isobutyl ketone.
80-62-6	Methyl methacrylate.
77-75-8	Methylpentynol.
98-83-9	a-methylstyrene.
110-91-8	Morpholine.
85-47-2	a-naphthalene sulfonic acid.
120-18-3	b-naphthalene sulfonic acid.
90-15-3	a-naphthol.
135-19-3	b-naphthol.
75-98-9	Neopentanoic acid.
88-74-4	o-nitroaniline.
100-01-6	p-nitroaniline.
91-23-6	o-nitroanisoie.
100-17-4	p-nitroanisoie.
98-95-3	Nitrobenzene.
27178-83-2 ^e	Nitrobenzoic acid (o,m, and p).
79-24-3	Nitroethane.
75-52-5	Nitromethane.
88-75-5	2-Nitrophenol.
25322-01-4	Nitropropane.
1321-12-6	Nitrotoluene.
27215-95-8	Nonene.
25154-52-3	Nonylphenol.
27193-28-8	Octylphenol.
123-63-7	Paraldehyde.
115-77-5	Pentaerythritol.

CAS No. ^a	Chemical
109-66-0	n-pentane.
109-67-1	1-pentene
127-18-4	Perchloroethylene.
594-42-3	Perchloromethyl mercaptan.
94-70-2	o-phenetidine.
156-43-4	p-phenetidine.
108-95-2	Phenol.
98-67-9, 585-38-6, 609-46-1, 1333-39-7 ^e	Phenolsulfonic acids.
91-40-7	Phenyl anthranilic acid.
(b)	Phenylenediamine.
75-44-5	Phosgene.
85-44-9	Phthalic anhydride.
85-41-6	Phthalimide.
108-99-6	p-picoline.
110-85-0	Piperazine.
9003-29-6, 25036-29-7 ^e	Polybutenes.
25322-68-3	Polyethylene glycol.
25322-69-4	Polypropylene glycol.
123-38-6	Propionaldehyde.
79-09-4	Propionic acid.
71-23-8	n-propyl alcohol.
107-10-8	Propylamine.
540-54-5	Propyl chloride.
115-07-1	Propylene.
127-00-4	Propylene chlorohydrin.
78-87-5	Propylene dichloride.
57-55-6	Propylene glycol.
75-56-9	Propylene oxide.

CAS No. ^a	Chemical
110-86-1	Pyridine.
106-51-4	Quinone.
108-46-3	Resorcinol.
27138-57-4	Resorcylic acid.
69-72-7	Salicylic acid.
127-09-3	Sodium acetate.
532-32-1	Sodium benzoate.
9004-32-4	Sodium carboxymethyl cellulose.
3926-62-3	Sodium chloroacetate.
141-53-7	Sodium formate.
139-02-6	Sodium phenate.
110-44-1	Sorbic acid.
100-42-5	Styrene.
110-15-6	Succinic acid.
110-61-2	Succinonitrile.
121-57-3	Sulfanilic acid.
126-33-0	Sulfolane.
1401-55-4	Tannic acid.
100-21-0	Terephthalic acid.
79-34-5 ^e	Tetrachloroethanes.
117-08-8	Tetrachlorophthalic anhydride.
78-00-2	Tetraethyl lead.
119-64-2	Tetrahydronaphthalene.
85-43-8	Tetrahydrophthalic anhydride.
75-74-1	Tetramethyl lead.
110-60-1	Tetramethylenediamine.
110-18-9	Tetramethylethylenediamine.
108-88-3	Toluene.

CAS No. ^a	Chemical
95-80-7	Toluene-2,4-diamine.
584-84-9	Toluene-2,4-diisocyanate.
26471-62-5	Toluene diisocyanates (mixture).
1333-07-9	Toluenesulfonamide.
104-15-4 ^e	Toluenesulfonic acids.
98-59-9	Toluenesulfonyl chloride.
26915-12-8	Toluidines.
87-61-6, 108-70-3, 120-82-1 ^e	Trichlorobenzenes.
71-55-6	1,1,1-trichloroethane.
79-00-5	1,1,2-trichloroethane.
79-01-6	Trichloroethylene.
75-69-4	Trichlorofluoromethane.
96-18-4	1,2,3-trichloropropane.
76-13-1	1,1,2-trichloro-1,2,2-trifluoroethane.
121-44-8	Triethylamine.
112-27-6	Triethylene glycol.
112-49-2	Triethylene glycol dimethyl ether.
7756-94-7	Triisobutylene.
75-50-3	Trimethylamine.
57-13-6	Urea.
108-05-4	Vinyl acetate.
75-01-4	Vinyl chloride.
75-35-4	Vinylidene chloride.
25013-15-4	Vinyl toluene.
1330-20-7	Xylenes (mixed).
95-47-6	o-xylene.
106-42-3	p-xylene.
1300-71-6	Xylenol.

CAS No. ^a	Chemical
1300-73-8	Xylidine.

^aCAS numbers refer to the Chemical Abstracts Registry numbers assigned to specific chemicals, isomers, or mixtures of chemicals. Some isomers or mixtures that are covered by the standards do not have CAS numbers assigned to them. The standards apply to all of the chemicals listed, whether CAS numbers have been assigned or not.

^bNo CAS number(s) have been assigned to this chemical, its isomers, or mixtures containing these chemicals.

^cCAS numbers for some of the isomers are listed; the standards apply to all of the isomers and mixtures, even if CAS numbers have not been assigned.

48 FR 48335, October 18, 1983, as amended at 65 FR 61763, Oct. 17, 2000]

**SECTION E.1 FACILITY OPERATION CONDITIONS
NSPS 40 CFR PART 60, SUBPART VVa**

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

Ethanol Production Plant:

(a) **Ethanol Production Plant, identified as EP-5, approved for construction in 2007, with a maximum production rate of 121,000,000 gallons of ethanol per year, and consisting of the following:**

(1) **One (1) distillation process, identified as EP-5B, approved for construction in 2007, with a maximum throughput of 13,813 gallons per hour, controlled by either one of two regenerative thermal oxidizer (RTO) systems C-10 and C-11, with a maximum heat input capacity of 10 MMBtu/hr, using natural gas for fuel, with emissions exhausting through stack S10. This process consists of the following:**

- (A) **One (1) mixer (blend) tank.**
- (B) **Two (2) slurry tanks.**
- (C) **One (1) cook tube.**
- (D) **One (1) flash tank.**
- (E) **Two (2) yeast tanks.**
- (F) **One (1) beer column.**
- (G) **One (1) side stripper.**
- (H) **One (1) rectifier column.**
- (I) **Two (2) condensers.**
- (J) **One (1) molecular sieve.**

Under 40 CFR Part 60, Subpart VVa, the pumps, compressors, pressure relief devices in gas/vapor service, sampling connection systems, open-ended valves or lines, and valves of this process are considered to be affected facilities.

(2) **One (1) fermentation process, identified as EP-5A, with a maximum capacity of 13,813 gallons per hour, controlled by wet scrubber S40, which exhausts to stack S40 and includes the following:**

- (A) **Seven (7) fermentation tanks.**
- (B) **One (1) beer well.**

Under 40 CFR Part 60, Subpart VVa, the pumps, compressors, pressure relief devices in gas/vapor service, sampling connection systems, open-ended valves or lines, and valves of this process are considered to be affected facilities.

- (3) One (1) Dried Distillers Grain and Solubles (DDGS) drying process with a maximum throughput of 44.8 tons per hour, controlled by two (2) regenerative thermal oxidizers (RTOs), identified as C-10 and C-11, with a maximum heat input capacity of 10 MMBtu/hr, using natural gas for fuel. This process consists of the following:**
- (A) Four (4) DDGS dryers, identified as dryers EP-9A to EP-9D, each with a heat input capacity of 40 MMBtu/hr or a total heat input capacity of 160 MMBtu/hr, with a total drying rate of 392,568 tons of DDGS per year, using natural gas and methanator offgas for combustion. Dryers EP-9A and EP-9B are controlled by RTO C-10. Dryers EP-9C and EP-9D are controlled by RTO C-11. Under 40 CFR Part 60, Subpart VVa, this process is considered to be an affected facility.**
 - (B) Six (6) DDGS centrifuges, with a maximum throughput of 392,568 tons of DDGS per year or 44.8 tons per hour. Under 40 CFR Part 60, Subpart VVa, this process is considered to be an affected facility.**
 - (C) One (1) DDGS evaporator, with a maximum throughput of 392,568 tons of DDGS per year or 44.8 tons per hour. Under 40 CFR Part 60, Subpart VVa, this process is considered to be an affected facility.**
 - (D) One (1) DDGS cooling drum, identified as S70, with a maximum throughput of 392,568 tons of DDGS per year, controlled by a baghouse, identified as S70 and exhausting to stack S70. Under 40 CFR Part 60, Subpart VVa, this process is considered to be an affected facility.**
- (4) Ethanol loading racks, identified as EP-8, with a maximum loading capacity of 121 million gallons per year, controlled by enclosed flare EP-14, with a heat input capacity of 12.4 MMBtu/hr and consisting of the following:**
- (A) One (1) ethanol truck loading rack, utilizing submerged loading, with a maximum loading capacity of 121 million gallons per year.**
 - (B) One (1) ethanol railcar loading rack, utilizing submerged loading, with a maximum loading capacity of 121 million gallons per year.**

Under 40 CFR Part 60, Subpart VVa, the pumps, compressors, pressure relief devices in gas/vapor service, sampling connection systems, open-ended valves or lines, and valves of this process are considered to be affected facilities..

(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 2-7-5(1)]

E.1.1 General Provisions Relating to New Source Performance Standards [326 IAC 12-1] [40 CFR Part 60, Subpart A]

- (a) Pursuant to 40 CFR 60.1, the Permittee shall comply with the provisions of 40 CFR Part 60 Subpart A – General Provisions, which are incorporated by reference as 326 IAC 12-1, except as otherwise specified in 40 CFR Part 60, Subpart VVa.
- (b) Pursuant to 40 CFR 60.19, the Permittee shall submit all required notifications and reports to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue, MC61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

E.1.2 Standard of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006 [40 CFR Part 60, Subpart VVa]

Pursuant to 40 CFR Part 60, Subpart VVa, the Permittee shall comply with the provisions of the Standard of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006. The provisions are incorporated by reference as 326 IAC 12, as specified as follows:

Title 40: Protection of Environment

Subpart VVa — Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006

Source: 72 FR 64883, Nov. 16, 2007, unless otherwise noted.

§ 60.480a Applicability and designation of affected facility.

- (a) (1) The provisions of this subpart apply to affected facilities in the synthetic organic chemicals manufacturing industry.
- (2) The group of all equipment (defined in §60.481a) within a process unit is an affected facility.
- (b) Any affected facility under paragraph (a) of this section that commences construction, reconstruction, or modification after November 7, 2006, shall be subject to the requirements of this subpart.
- (c) Addition or replacement of equipment for the purpose of process improvement which is accomplished without a capital expenditure shall not by itself be considered a modification under this subpart.
- (d) (1) If an owner or operator applies for one or more of the exemptions in this paragraph, then the owner or operator shall maintain records as required in §60.486a(i).
- (2) Any affected facility that has the design capacity to produce less than 1,000 Mg/yr (1,102 ton/yr) of a chemical listed in §60.489 is exempt from §§60.482–1a through 60.482–11a.

- (3) If an affected facility produces heavy liquid chemicals only from heavy liquid feed or raw materials, then it is exempt from §§60.482–1a through 60.482–11a.
- (4) Any affected facility that produces beverage alcohol is exempt from §§60.482–1a through 60.482–11a.
- (5) Any affected facility that has no equipment in volatile organic compounds (VOC) service is exempt from §§60.482–1a through 60.482–11a.

§ 60.481a Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Clean Air Act (CAA) or in subpart A of part 60, and the following terms shall have the specific meanings given them.

Capital expenditure means, in addition to the definition in 40 CFR 60.2, an expenditure for a physical or operational change to an existing facility that:

- (a) Exceeds P, the product of the facility's replacement cost, R, and an adjusted annual asset guideline repair allowance, A, as reflected by the following equation: $P = R \times A$, where:
 - (1) The adjusted annual asset guideline repair allowance, A, is the product of the percent of the replacement cost, Y, and the applicable basic annual asset guideline repair allowance, B, divided by 100 as reflected by the following equation:

$$A = Y \times (B \div 100);$$
 - (2) The percent Y is determined from the following equation: $Y = 1.0 - 0.575 \log X$, where X is 2006 minus the year of construction; and
 - (3) The applicable basic annual asset guideline repair allowance, B, is selected from the following table consistent with the applicable subpart:

Table for Determining Applicable Value for B

Subpart applicable to facility	Value of B to be used in equation
VVa	12.5
GGGa	7.0

Closed-loop system means an enclosed system that returns process fluid to the process.

Closed-purge system means a system or combination of systems and portable containers to capture purged liquids. Containers for purged liquids must be covered or closed when not being filled or emptied.

Closed vent system means a system that is not open to the atmosphere and that is composed of hard-piping, ductwork, connections, and, if necessary, flow-inducing devices that transport gas or vapor from a piece or pieces of equipment to a control device or back to a process.

Connector means flanged, screwed, or other joined fittings used to connect two pipe lines or a

pipe line and a piece of process equipment or that close an opening in a pipe that could be connected to another pipe. Joined fittings welded completely around the circumference of the interface are not considered connectors for the purpose of this regulation.

Control device means an enclosed combustion device, vapor recovery system, or flare.

Distance piece means an open or enclosed casing through which the piston rod travels, separating the compressor cylinder from the crankcase.

Double block and bleed system means two block valves connected in series with a bleed valve or line that can vent the line between the two block valves.

Duct work means a conveyance system such as those commonly used for heating and ventilation systems. It is often made of sheet metal and often has sections connected by screws or crimping. Hard-piping is not ductwork.

Equipment means each pump, compressor, pressure relief device, sampling connection system, open-ended valve or line, valve, and flange or other connector in VOC service and any devices or systems required by this subpart.

First attempt at repair means to take action for the purpose of stopping or reducing leakage of organic material to the atmosphere using best practices.

Fuel gas means gases that are combusted to derive useful work or heat.

Fuel gas system means the offsite and onsite piping and flow and pressure control system that gathers gaseous stream(s) generated by onsite operations, may blend them with other sources of gas, and transports the gaseous stream for use as fuel gas in combustion devices or in-process combustion equipment, such as furnaces and gas turbines, either singly or in combination.

Hard-piping means pipe or tubing that is manufactured and properly installed using good engineering judgment and standards such as ASME B31.3, Process Piping (available from the American Society of Mechanical Engineers, P.O. Box 2300, Fairfield, NJ 07007–2300).

In gas/vapor service means that the piece of equipment contains process fluid that is in the gaseous state at operating conditions.

In heavy liquid service means that the piece of equipment is not in gas/vapor service or in light liquid service.

In light liquid service means that the piece of equipment contains a liquid that meets the conditions specified in §60.485a(e).

In-situ sampling systems means nonextractive samplers or in-line samplers.

In vacuum service means that equipment is operating at an internal pressure which is at least 5 kilopascals (kPa) (0.7 psia) below ambient pressure.

In VOC service means that the piece of equipment contains or contacts a process fluid that is at least 10 percent VOC by weight. (The provisions of §60.485a(d) specify how to determine that a piece of equipment is not in VOC service.)

Initial calibration value means the concentration measured during the initial calibration at the beginning of each day required in §60.485a(b)(1), or the most recent calibration if the instrument is recalibrated during the day (i.e., the calibration is adjusted) after a calibration drift assessment.

Liquids dripping means any visible leakage from the seal including spraying, misting, clouding, and ice formation.

Open-ended valve or line means any valve, except safety relief valves, having one side of the valve seat in contact with process fluid and one side open to the atmosphere, either directly or through open piping.

Pressure release means the emission of materials resulting from system pressure being greater than set pressure of the pressure relief device.

Process improvement means routine changes made for safety and occupational health requirements, for energy savings, for better utility, for ease of maintenance and operation, for correction of design deficiencies, for bottleneck removal, for changing product requirements, or for environmental control.

Process unit means the components assembled and connected by pipes or ducts to process raw materials and to produce, as intermediate or final products, one or more of the chemicals listed in §60.489. A process unit can operate independently if supplied with sufficient feed or raw materials and sufficient storage facilities for the product. For the purpose of this subpart, process unit includes any feed, intermediate and final product storage vessels (except as specified in §60.482–1a(g)), product transfer racks, and connected ducts and piping. A process unit includes all equipment as defined in this subpart.

Process unit shutdown means a work practice or operational procedure that stops production from a process unit or part of a process unit during which it is technically feasible to clear process material from a process unit or part of a process unit consistent with safety constraints and during which repairs can be accomplished. The following are not considered process unit shutdowns:

- (1) An unscheduled work practice or operational procedure that stops production from a process unit or part of a process unit for less than 24 hours.**
- (2) An unscheduled work practice or operational procedure that would stop production from a process unit or part of a process unit for a shorter period of time than would be required to clear the process unit or part of the process unit of materials and start up the unit, and would result in greater emissions than delay of repair of leaking components until the next scheduled process unit shutdown.**
- (3) The use of spare equipment and technically feasible bypassing of equipment without stopping production.**

Quarter means a 3-month period; the first quarter concludes on the last day of the last full month during the 180 days following initial startup.

Repaired means that equipment is adjusted, or otherwise altered, in order to eliminate a leak as defined in the applicable sections of this subpart and, except for leaks identified in accordance with §§60.482–2a(b)(2)(ii) and (d)(6)(ii) and (d)(6)(iii), 60.482–3a(f), and 60.482–10a(f)(1)(ii), is re-monitored as specified in §60.485a(b) to verify that emissions from the equipment are below the applicable leak definition.

Replacement cost means the capital needed to purchase all the depreciable components in a facility.

Sampling connection system means an assembly of equipment within a process unit used during periods of representative operation to take samples of the process fluid. Equipment used to take nonroutine grab samples is not considered a sampling connection system.

Sensor means a device that measures a physical quantity or the change in a physical quantity such as temperature, pressure, flow rate, pH, or liquid level.

Storage vessel means a tank or other vessel that is used to store organic liquids that are used in the process as raw material feedstocks, produced as intermediates or final products, or generated as wastes. Storage vessel does not include vessels permanently attached to motor vehicles, such as trucks, railcars, barges or ships.

Synthetic organic chemicals manufacturing industry means the industry that produces, as intermediates or final products, one or more of the chemicals listed in §60.489.

Transfer rack means the collection of loading arms and loading hoses, at a single loading rack, that are used to fill tank trucks and/or railcars with organic liquids.

Volatile organic compounds or VOC means, for the purposes of this subpart, any reactive organic compounds as defined in §60.2 Definitions.

§ 60.482-1a Standards: General.

- (a) Each owner or operator subject to the provisions of this subpart shall demonstrate compliance with the requirements of §§60.482–1a through 60.482–10a or §60.480a(e) for all equipment within 180 days of initial startup.
- (b) Compliance with §§60.482–1a to 60.482–10a will be determined by review of records and reports, review of performance test results, and inspection using the methods and procedures specified in §60.485a.
- (c)
 - (1) An owner or operator may request a determination of equivalence of a means of emission limitation to the requirements of §§60.482–2a, 60.482–3a, 60.482–5a, 60.482–6a, 60.482–7a, 60.482–8a, and 60.482–10a as provided in §60.484a.
 - (2) If the Administrator makes a determination that a means of emission limitation is at least equivalent to the requirements of §§60.482–2a, 60.482–3a, 60.482–5a, 60.482–6a, 60.482–7a, 60.482–8a, or 60.482–10a, an owner or operator shall comply with the requirements of that determination.
- (d) Equipment that is in vacuum service is excluded from the requirements of §§60.482–2a through 60.482–10a if it is identified as required in §60.486a(e)(5).
- (e) Equipment that an owner or operator designates as being in VOC service less than 300 hr/yr is excluded from the requirements of §§60.482–2a through 60.482–11a if it is identified as required in §60.486a(e)(6) and it meets any of the conditions specified in paragraphs (e)(1) through (3) of this section.
 - (1) The equipment is in VOC service only during startup and shutdown, excluding startup and shutdown between batches of the same campaign for a batch process.
 - (2) The equipment is in VOC service only during process malfunctions or other emergencies.
 - (3) The equipment is backup equipment that is in VOC service only when the primary equipment is out of service.
- (f)
 - (1) If a dedicated batch process unit operates less than 365 days during a year, an owner or operator may monitor to detect leaks from pumps, valves, and open-ended valves or lines at the frequency specified in the following table instead of monitoring as specified in §§60.482–2a, 60.482–7a, and 60.483.2a:

Operating time (percent of hours during year)	Equivalent monitoring frequency time in use		
	Monthly	Quarterly	Semiannually
0 to <25	Quarterly	Annually	Annually.
25 to <50	Quarterly	Semiannually	Annually.
50 to <75	Bimonthly	Three quarters	Semiannually.
75 to 100	Monthly	Quarterly	Semiannually.

- (2) Pumps and valves that are shared among two or more batch process units that are subject to this subpart may be monitored at the frequencies specified in paragraph (f)(1) of this section, provided the operating time of all such process units is considered.
- (3) The monitoring frequencies specified in paragraph (f)(1) of this section are not requirements for monitoring at specific intervals and can be adjusted to accommodate process operations. An owner or operator may monitor at any time during the specified monitoring period (e.g., month, quarter, year), provided the monitoring is conducted at a reasonable interval after completion of the last monitoring campaign. Reasonable intervals are defined in paragraphs (f)(3)(i) through (iv) of this section.
 - (i) When monitoring is conducted quarterly, monitoring events must be separated by at least 30 calendar days.
 - (ii) When monitoring is conducted semiannually (i.e. , once every 2 quarters), monitoring events must be separated by at least 60 calendar days.
 - (iii) When monitoring is conducted in 3 quarters per year, monitoring events must be separated by at least 90 calendar days.
 - (iv) When monitoring is conducted annually, monitoring events must be separated by at least 120 calendar days.
- (g) If the storage vessel is shared with multiple process units, the process unit with the greatest annual amount of stored materials (predominant use) is the process unit the storage vessel is assigned to. If the storage vessel is shared equally among process units, and one of the process units has equipment subject to this subpart, the storage vessel is assigned to that process unit. If the storage vessel is shared equally among process units, none of which have equipment subject to this subpart of this part, the storage vessel is assigned to any process unit subject to subpart VV of this part. If the predominant use of the storage vessel varies from year to year, then the owner or operator must estimate the predominant use initially and reassess every 3 years. The owner or operator must keep records of the information and supporting calculations that show how predominant use is determined. All equipment on the storage vessel must be monitored when in VOC service.

§ 60.482-2a Standards: Pumps in light liquid service.

- (a) (1) Each pump in light liquid service shall be monitored monthly to detect leaks by the methods specified in §60.485a(b), except as provided in §60.482–1a(c) and (f) and paragraphs (d), (e), and (f) of this section. A pump that begins operation in light

liquid service after the initial startup date for the process unit must be monitored for the first time within 30 days after the end of its startup period, except for a pump that replaces a leaking pump and except as provided in §60.482–1a(c) and paragraphs (d), (e), and (f) of this section.

- (2) Each pump in light liquid service shall be checked by visual inspection each calendar week for indications of liquids dripping from the pump seal, except as provided in §60.482–1a(f).**
- (b) (1) The instrument reading that defines a leak is specified in paragraphs (b)(1)(i) and (ii) of this section.**
 - (i) 5,000 parts per million (ppm) or greater for pumps handling polymerizing monomers;**
 - (ii) 2,000 ppm or greater for all other pumps.**
- (2) If there are indications of liquids dripping from the pump seal, the owner or operator shall follow the procedure specified in either paragraph (b)(2)(i) or (ii) of this section. This requirement does not apply to a pump that was monitored after a previous weekly inspection and the instrument reading was less than the concentration specified in paragraph (b)(1)(i) or (ii) of this section, whichever is applicable.**
 - (i) Monitor the pump within 5 days as specified in §60.485a(b). A leak is detected if the instrument reading measured during monitoring indicates a leak as specified in paragraph (b)(1)(i) or (ii) of this section, whichever is applicable. The leak shall be repaired using the procedures in paragraph (c) of this section.**
 - (ii) Designate the visual indications of liquids dripping as a leak, and repair the leak using either the procedures in paragraph (c) of this section or by eliminating the visual indications of liquids dripping.**
- (c) (1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in §60.482–9a.**
- (2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected. First attempts at repair include, but are not limited to, the practices described in paragraphs (c)(2)(i) and (ii) of this section, where practicable.**
 - (i) Tightening the packing gland nuts;**
 - (ii) Ensuring that the seal flush is operating at design pressure and temperature.**

§ 60.482-4a Standards: Pressure relief devices in gas/vapor service.

- (a) Except during pressure releases, each pressure relief device in gas/vapor service shall be operated with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as determined by the methods specified in §60.485a(c).**
- (b) (1) After each pressure release, the pressure relief device shall be returned to a condition of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as soon as practicable, but no later than 5 calendar days after the pressure release, except as provided in §60.482-9a.**
(2) No later than 5 calendar days after the pressure release, the pressure relief device shall be monitored to confirm the conditions of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, by the methods specified in §60.485a(c).
- (c) Any pressure relief device that is routed to a process or fuel gas system or equipped with a closed vent system capable of capturing and transporting leakage through the pressure relief device to a control device as described in §60.482-10a is exempted from the requirements of paragraphs (a) and (b) of this section.**
- (d) (1) Any pressure relief device that is equipped with a rupture disk upstream of the pressure relief device is exempt from the requirements of paragraphs (a) and (b) of this section, provided the owner or operator complies with the requirements in paragraph (d)(2) of this section.**
(2) After each pressure release, a new rupture disk shall be installed upstream of the pressure relief device as soon as practicable, but no later than 5 calendar days after each pressure release, except as provided in §60.482-9a.

§ 60.482-6a Standards: Open-ended valves or lines.

- (a) (1) Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve, except as provided in §60.482-1a(c) and paragraphs (d) and (e) of this section.**
(2) The cap, blind flange, plug, or second valve shall seal the open end at all times except during operations requiring process fluid flow through the open-ended valve or line.
- (b) Each open-ended valve or line equipped with a second valve shall be operated in a manner such that the valve on the process fluid end is closed before the second valve is closed.**
- (c) When a double block-and-bleed system is being used, the bleed valve or line may remain open during operations that require venting the line between the block valves but shall comply with paragraph (a) of this section at all other times.**
- (d) Open-ended valves or lines in an emergency shutdown system which are designed to open automatically in the event of a process upset are exempt from the requirements of paragraphs (a), (b), and (c) of this section.**

- (e) **Open-ended valves or lines containing materials which would autocatalytically polymerize or would present an explosion, serious overpressure, or other safety hazard if capped or equipped with a double block and bleed system as specified in paragraphs (a) through (c) of this section are exempt from the requirements of paragraphs (a) through (c) of this section.**

§ 60.482-7a Standards: Valves in gas/vapor service and in light liquid service.

- (a) (1) **Each valve shall be monitored monthly to detect leaks by the methods specified in §60.485a(b) and shall comply with paragraphs (b) through (e) of this section, except as provided in paragraphs (f), (g), and (h) of this section, §60.482-1a(c) and (f), and §§60.483-1a and 60.483-2a.**
- (2) **A valve that begins operation in gas/vapor service or light liquid service after the initial startup date for the process unit must be monitored according to paragraphs (a)(2)(i) or (ii), except for a valve that replaces a leaking valve and except as provided in paragraphs (f), (g), and (h) of this section, §60.482-1a(c), and §§60.483-1a and 60.483-2a.**
- (i) **Monitor the valve as in paragraph (a)(1) of this section. The valve must be monitored for the first time within 30 days after the end of its startup period to ensure proper installation.**
- (ii) **If the existing valves in the process unit are monitored in accordance with §60.483-1a or §60.483-2a, count the new valve as leaking when calculating the percentage of valves leaking as described in §60.483-2a(b)(5). If less than 2.0 percent of the valves are leaking for that process unit, the valve must be monitored for the first time during the next scheduled monitoring event for existing valves in the process unit or within 90 days, whichever comes first.**
- (b) **If an instrument reading of 500 ppm or greater is measured, a leak is detected.**
- (c) (1) (i) **Any valve for which a leak is not detected for 2 successive months may be monitored the first month of every quarter, beginning with the next quarter, until a leak is detected.**
- (ii) **As an alternative to monitoring all of the valves in the first month of a quarter, an owner or operator may elect to subdivide the process unit into two or three subgroups of valves and monitor each subgroup in a different month during the quarter, provided each subgroup is monitored every 3 months. The owner or operator must keep records of the valves assigned to each subgroup.**
- (2) **If a leak is detected, the valve shall be monitored monthly until a leak is not detected for 2 successive months.**
- (d) (1) **When a leak is detected, it shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in §60.482-9a.**
- (2) **A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.**

- (e) **First attempts at repair include, but are not limited to, the following best practices where practicable:**
- (1) **Tightening of bonnet bolts;**
 - (2) **Replacement of bonnet bolts;**
 - (3) **Tightening of packing gland nuts;**
 - (4) **Injection of lubricant into lubricated packing.**

§ 60.482-8a Standards: Pumps, valves, and connectors in heavy liquid service and pressure relief devices in light liquid or heavy liquid service.

- (a) **If evidence of a potential leak is found by visual, audible, olfactory, or any other detection method at pumps, valves, and connectors in heavy liquid service and pressure relief devices in light liquid or heavy liquid service, the owner or operator shall follow either one of the following procedures:**
- (1) **The owner or operator shall monitor the equipment within 5 days by the method specified in §60.485a(b) and shall comply with the requirements of paragraphs (b) through (d) of this section.**
 - (2) **The owner or operator shall eliminate the visual, audible, olfactory, or other indication of a potential leak within 5 calendar days of detection.**
- (b) **If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.**
- (c) (1) **When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in §60.482-9a.**
- (2) **The first attempt at repair shall be made no later than 5 calendar days after each leak is detected.**
- (d) **First attempts at repair include, but are not limited to, the best practices described under §§60.482-2a(c)(2) and 60.482-7a(e).**

§ 60.482-9a Standards: Delay of repair.

- (a) **Delay of repair of equipment for which leaks have been detected will be allowed if repair within 15 days is technically infeasible without a process unit shutdown. Repair of this equipment shall occur before the end of the next process unit shutdown. Monitoring to verify repair must occur within 15 days after startup of the process unit.**
- (b) **Delay of repair of equipment will be allowed for equipment which is isolated from the process and which does not remain in VOC service.**
- (c) **Delay of repair for valves and connectors will be allowed if:**
- (1) **The owner or operator demonstrates that emissions of purged material resulting from immediate repair are greater than the fugitive emissions likely to result from delay of repair, and**

- (2) **When repair procedures are effected, the purged material is collected and destroyed or recovered in a control device complying with §60.482–10a.**
- (d) **Delay of repair for pumps will be allowed if:**
 - (1) **Repair requires the use of a dual mechanical seal system that includes a barrier fluid system, and**
 - (2) **Repair is completed as soon as practicable, but not later than 6 months after the leak was detected.**
- (e) **Delay of repair beyond a process unit shutdown will be allowed for a valve, if valve assembly replacement is necessary during the process unit shutdown, valve assembly supplies have been depleted, and valve assembly supplies had been sufficiently stocked before the supplies were depleted. Delay of repair beyond the next process unit shutdown will not be allowed unless the next process unit shutdown occurs sooner than 6 months after the first process unit shutdown.**
- (f) **When delay of repair is allowed for a leaking pump, valve, or connector that remains in service, the pump, valve, or connector may be considered to be repaired and no longer subject to delay of repair requirements if two consecutive monthly monitoring instrument readings are below the leak definition.**

§ 60.482-10a Standards: Closed vent systems and control devices.

- (a) **Owners or operators of closed vent systems and control devices used to comply with provisions of this subpart shall comply with the provisions of this section.**
- (b) **Vapor recovery systems (for example, condensers and absorbers) shall be designed and operated to recover the VOC emissions vented to them with an efficiency of 95 percent or greater, or to an exit concentration of 20 parts per million by volume (ppmv), whichever is less stringent.**
- (c) **Enclosed combustion devices shall be designed and operated to reduce the VOC emissions vented to them with an efficiency of 95 percent or greater, or to an exit concentration of 20 ppmv, on a dry basis, corrected to 3 percent oxygen, whichever is less stringent or to provide a minimum residence time of 0.75 seconds at a minimum temperature of 816 °C.**
- (d) **Flares used to comply with this subpart shall comply with the requirements of §60.18.**
- (e) **Owners or operators of control devices used to comply with the provisions of this subpart shall monitor these control devices to ensure that they are operated and maintained in conformance with their designs.**
- (f) **Except as provided in paragraphs (i) through (k) of this section, each closed vent system shall be inspected according to the procedures and schedule specified in paragraphs (f)(1) and (2) of this section.**
 - (1) **If the vapor collection system or closed vent system is constructed of hard-piping, the owner or operator shall comply with the requirements specified in paragraphs (f)(1)(i) and (ii) of this section:**

- (i) Conduct an initial inspection according to the procedures in §60.485a(b); and
 - (ii) Conduct annual visual inspections for visible, audible, or olfactory indications of leaks.
 - (2) If the vapor collection system or closed vent system is constructed of ductwork, the owner or operator shall:
 - (i) Conduct an initial inspection according to the procedures in §60.485a(b); and
 - (ii) Conduct annual inspections according to the procedures in §60.485a(b).
- (g) Leaks, as indicated by an instrument reading greater than 500 ppmv above background or by visual inspections, shall be repaired as soon as practicable except as provided in paragraph (h) of this section.
 - (1) A first attempt at repair shall be made no later than 5 calendar days after the leak is detected.
 - (2) Repair shall be completed no later than 15 calendar days after the leak is detected.
- (h) Delay of repair of a closed vent system for which leaks have been detected is allowed if the repair is technically infeasible without a process unit shutdown or if the owner or operator determines that emissions resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair. Repair of such equipment shall be complete by the end of the next process unit shutdown.
- (i) If a vapor collection system or closed vent system is operated under a vacuum, it is exempt from the inspection requirements of paragraphs (f)(1)(i) and (f)(2) of this section.
- (j) Any parts of the closed vent system that are designated, as described in paragraph (l)(1) of this section, as unsafe to inspect are exempt from the inspection requirements of paragraphs (f)(1)(i) and (f)(2) of this section if they comply with the requirements specified in paragraphs (j)(1) and (2) of this section:
 - (1) The owner or operator determines that the equipment is unsafe to inspect because inspecting personnel would be exposed to an imminent or potential danger as a consequence of complying with paragraphs (f)(1)(i) or (f)(2) of this section; and
 - (2) The owner or operator has a written plan that requires inspection of the equipment as frequently as practicable during safe-to-inspect times.
- (k) Any parts of the closed vent system that are designated, as described in paragraph (l)(2) of this section, as difficult to inspect are exempt from the inspection requirements of paragraphs (f)(1)(i) and (f)(2) of this section if they comply with the requirements specified in paragraphs (k)(1) through (3) of this section:
 - (1) The owner or operator determines that the equipment cannot be inspected without elevating the inspecting personnel more than 2 meters above a support surface; and

- (3) The owner or operator shall perform monitoring, subsequent to the initial monitoring required in paragraph (a) of this section, as specified in paragraphs (b)(3)(i) through (iii) of this section, and shall comply with the requirements of paragraphs (b)(3)(iv) and (v) of this section. The required period in which monitoring must be conducted shall be determined from paragraphs (b)(3)(i) through (iii) of this section using the monitoring results from the preceding monitoring period. The percent leaking connectors shall be calculated as specified in paragraph (c) of this section.**
- (i) If the percent leaking connectors in the process unit was greater than or equal to 0.5 percent, then monitor within 12 months (1 year).**
 - (ii) If the percent leaking connectors in the process unit was greater than or equal to 0.25 percent but less than 0.5 percent, then monitor within 4 years. An owner or operator may comply with the requirements of this paragraph by monitoring at least 40 percent of the connectors within 2 years of the start of the monitoring period, provided all connectors have been monitored by the end of the 4-year monitoring period.**
 - (iii) If the percent leaking connectors in the process unit was less than 0.25 percent, then monitor as provided in paragraph (b)(3)(iii)(A) of this section and either paragraph (b)(3)(iii)(B) or (b)(3)(iii)(C) of this section, as appropriate.**
 - (A) An owner or operator shall monitor at least 50 percent of the connectors within 4 years of the start of the monitoring period.**
 - (B) If the percent of leaking connectors calculated from the monitoring results in paragraph (b)(3)(iii)(A) of this section is greater than or equal to 0.35 percent of the monitored connectors, the owner or operator shall monitor as soon as practical, but within the next 6 months, all connectors that have not yet been monitored during the monitoring period. At the conclusion of monitoring, a new monitoring period shall be started pursuant to paragraph (b)(3) of this section, based on the percent of leaking connectors within the total monitored connectors.**
 - (C) If the percent of leaking connectors calculated from the monitoring results in paragraph (b)(3)(iii)(A) of this section is less than 0.35 percent of the monitored connectors, the owner or operator shall monitor all connectors that have not yet been monitored within 8 years of the start of the monitoring period.**
 - (iv) If, during the monitoring conducted pursuant to paragraphs (b)(3)(i) through (iii) of this section, a connector is found to be leaking, it shall be re-monitored once within 90 days after repair to confirm that it is not leaking.**
 - (v) The owner or operator shall keep a record of the start date and end date of each monitoring period under this section for each process unit.**

- (c) For use in determining the monitoring frequency, as specified in paragraphs (a) and (b)(3) of this section, the percent leaking connectors as used in paragraphs (a) and (b)(3) of this section shall be calculated by using the following equation:

$$\%C_L = C_L / C_t * 100$$

Where:

$\%C_L$ = Percent of leaking connectors as determined through periodic monitoring required in paragraphs (a) and (b)(3)(i) through (iii) of this section.

C_L = Number of connectors measured at 500 ppm or greater, by the method specified in §60.485a(b).

C_t = Total number of monitored connectors in the process unit or affected facility.

- (d) When a leak is detected pursuant to paragraphs (a) and (b) of this section, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in §60.482–9a. A first attempt at repair as defined in this subpart shall be made no later than 5 calendar days after the leak is detected.
- (e) Any connector that is designated, as described in §60.486a(f)(1), as an unsafe-to-monitor connector is exempt from the requirements of paragraphs (a) and (b) of this section if:
- (1) The owner or operator of the connector demonstrates that the connector is unsafe-to-monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with paragraphs (a) and (b) of this section; and
 - (2) The owner or operator of the connector has a written plan that requires monitoring of the connector as frequently as practicable during safe-to-monitor times but not more frequently than the periodic monitoring schedule otherwise applicable, and repair of the equipment according to the procedures in paragraph (d) of this section if a leak is detected.
- (f) Inaccessible, ceramic, or ceramic-lined connectors .
- (1) Any connector that is inaccessible or that is ceramic or ceramic-lined (e.g., porcelain, glass, or glass-lined), is exempt from the monitoring requirements of paragraphs (a) and (b) of this section, from the leak repair requirements of paragraph (d) of this section, and from the recordkeeping and reporting requirements of §§63.1038 and 63.1039. An inaccessible connector is one that meets any of the provisions specified in paragraphs (f)(1)(i) through (vi) of this section, as applicable:
 - (i) Buried;
 - (ii) Insulated in a manner that prevents access to the connector by a monitor probe;
 - (iii) Obstructed by equipment or piping that prevents access to the connector by a monitor probe;

- (iv) **Unable to be reached from a wheeled scissor-lift or hydraulic-type scaffold that would allow access to connectors up to 7.6 meters (25 feet) above the ground;**
 - (v) **Inaccessible because it would require elevating the monitoring personnel more than 2 meters (7 feet) above a permanent support surface or would require the erection of scaffold; or**
 - (vi) **Not able to be accessed at any time in a safe manner to perform monitoring. Unsafe access includes, but is not limited to, the use of a wheeled scissor-lift on unstable or uneven terrain, the use of a motorized man-lift basket in areas where an ignition potential exists, or access would require near proximity to hazards such as electrical lines, or would risk damage to equipment.**
- (2) **If any inaccessible, ceramic, or ceramic-lined connector is observed by visual, audible, olfactory, or other means to be leaking, the visual, audible, olfactory, or other indications of a leak to the atmosphere shall be eliminated as soon as practical.**
- (g) **Except for instrumentation systems and inaccessible, ceramic, or ceramic-lined connectors meeting the provisions of paragraph (f) of this section, identify the connectors subject to the requirements of this subpart. Connectors need not be individually identified if all connectors in a designated area or length of pipe subject to the provisions of this subpart are identified as a group, and the number of connectors subject is indicated.**

§ 60.483-1a Alternative standards for valves—allowable percentage of valves leaking.

- (a) **An owner or operator may elect to comply with an allowable percentage of valves leaking of equal to or less than 2.0 percent.**
- (b) **The following requirements shall be met if an owner or operator wishes to comply with an allowable percentage of valves leaking:**
 - (1) **An owner or operator must notify the Administrator that the owner or operator has elected to comply with the allowable percentage of valves leaking before implementing this alternative standard, as specified in §60.487a(d).**
 - (2) **A performance test as specified in paragraph (c) of this section shall be conducted initially upon designation, annually, and at other times requested by the Administrator.**
 - (3) **If a valve leak is detected, it shall be repaired in accordance with §60.482–7a(d) and (e).**
- (c) **Performance tests shall be conducted in the following manner:**
 - (1) **All valves in gas/vapor and light liquid service within the affected facility shall be monitored within 1 week by the methods specified in §60.485a(b).**
 - (2) **If an instrument reading of 500 ppm or greater is measured, a leak is detected.**

- (3) The leak percentage shall be determined by dividing the number of valves for which leaks are detected by the number of valves in gas/vapor and light liquid service within the affected facility.**
- (d) Owners and operators who elect to comply with this alternative standard shall not have an affected facility with a leak percentage greater than 2.0 percent, determined as described in §60.485a(h).**

§ 60.483-2a Alternative standards for valves—skip period leak detection and repair.

- (a) (1) An owner or operator may elect to comply with one of the alternative work practices specified in paragraphs (b)(2) and (3) of this section.**
- (2) An owner or operator must notify the Administrator before implementing one of the alternative work practices, as specified in §60.487(d)a.**
- (b) (1) An owner or operator shall comply initially with the requirements for valves in gas/vapor service and valves in light liquid service, as described in §60.482–7a.**
- (2) After 2 consecutive quarterly leak detection periods with the percent of valves leaking equal to or less than 2.0, an owner or operator may begin to skip 1 of the quarterly leak detection periods for the valves in gas/vapor and light liquid service.**
- (3) After 5 consecutive quarterly leak detection periods with the percent of valves leaking equal to or less than 2.0, an owner or operator may begin to skip 3 of the quarterly leak detection periods for the valves in gas/vapor and light liquid service.**
- (4) If the percent of valves leaking is greater than 2.0, the owner or operator shall comply with the requirements as described in §60.482–7a but can again elect to use this section.**
- (5) The percent of valves leaking shall be determined as described in §60.485a(h).**
- (6) An owner or operator must keep a record of the percent of valves found leaking during each leak detection period.**
- (7) A valve that begins operation in gas/vapor service or light liquid service after the initial startup date for a process unit following one of the alternative standards in this section must be monitored in accordance with §60.482–7a(a)(2)(i) or (ii) before the provisions of this section can be applied to that valve.**

§ 60.484a Equivalence of means of emission limitation.

- (a) Each owner or operator subject to the provisions of this subpart may apply to the Administrator for determination of equivalence for any means of emission limitation that achieves a reduction in emissions of VOC at least equivalent to the reduction in emissions of VOC achieved by the controls required in this subpart.**
- (b) Determination of equivalence to the equipment, design, and operational requirements of this subpart will be evaluated by the following guidelines:**
 - (1) Each owner or operator applying for an equivalence determination shall be responsible for collecting and verifying test data to demonstrate equivalence of means of emission limitation.**
 - (2) The Administrator will compare test data for demonstrating equivalence of the**

means of emission limitation to test data for the equipment, design, and operational requirements.

- (3) The Administrator may condition the approval of equivalence on requirements that may be necessary to assure operation and maintenance to achieve the same emission reduction as the equipment, design, and operational requirements.**
- (c) Determination of equivalence to the required work practices in this subpart will be evaluated by the following guidelines:**
- (1) Each owner or operator applying for a determination of equivalence shall be responsible for collecting and verifying test data to demonstrate equivalence of an equivalent means of emission limitation.**
 - (2) For each affected facility for which a determination of equivalence is requested, the emission reduction achieved by the required work practice shall be demonstrated.**
 - (3) For each affected facility, for which a determination of equivalence is requested, the emission reduction achieved by the equivalent means of emission limitation shall be demonstrated.**
 - (4) Each owner or operator applying for a determination of equivalence shall commit in writing to work practice(s) that provide for emission reductions equal to or greater than the emission reductions achieved by the required work practice.**
 - (5) The Administrator will compare the demonstrated emission reduction for the equivalent means of emission limitation to the demonstrated emission reduction for the required work practices and will consider the commitment in paragraph (c)(4) of this section.**
 - (6) The Administrator may condition the approval of equivalence on requirements that may be necessary to assure operation and maintenance to achieve the same emission reduction as the required work practice.**
- (d) An owner or operator may offer a unique approach to demonstrate the equivalence of any equivalent means of emission limitation.**
- (e)**
- (1) After a request for determination of equivalence is received, the Administrator will publish a notice in the Federal Register and provide the opportunity for public hearing if the Administrator judges that the request may be approved.**
 - (2) After notice and opportunity for public hearing, the Administrator will determine the equivalence of a means of emission limitation and will publish the determination in the Federal Register.**
 - (3) Any equivalent means of emission limitations approved under this section shall constitute a required work practice, equipment, design, or operational standard within the meaning of section 111(h)(1) of the CAA.**
- (f)**
- (1) Manufacturers of equipment used to control equipment leaks of VOC may apply to the Administrator for determination of equivalence for any equivalent means of emission limitation that achieves a reduction in emissions of VOC achieved by the equipment, design, and operational requirements of this subpart.**
 - (2) The Administrator will make an equivalence determination according to the**

provisions of paragraphs (b), (c), (d), and (e) of this section.

§ 60.485a 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 standards in §§60.482–1a through 60.482–11a, 60.483a, and 60.484a as follows:**
 - (1) Method 21 shall be used to determine the presence of leaking sources. The instrument shall be calibrated before use each day of its use by the procedures specified in Method 21 of appendix A–7 of this part. The following calibration gases shall be used:**
 - (i) Zero air (less than 10 ppm of hydrocarbon in air); and**
 - (ii) A mixture of methane or n-hexane and air at a concentration no more than 2,000 ppm greater than the leak definition concentration of the equipment monitored. If the monitoring instrument's design allows for multiple calibration scales, then the lower scale shall be calibrated with a calibration gas that is no higher than 2,000 ppm above the concentration specified as a leak, and the highest scale shall be calibrated with a calibration gas that is approximately equal to 10,000 ppm. If only one scale on an instrument will be used during monitoring, the owner or operator need not calibrate the scales that will not be used during that day's monitoring.**
 - (2) A calibration drift assessment shall be performed, at a minimum, at the end of each monitoring day. Check the instrument using the same calibration gas(es) that were used to calibrate the instrument before use. Follow the procedures specified in Method 21 of appendix A–7 of this part, Section 10.1, except do not adjust the meter readout to correspond to the calibration gas value. Record the instrument reading for each scale used as specified in §60.486a(e)(7). Calculate the average algebraic difference between the three meter readings and the most recent calibration value. Divide this algebraic difference by the initial calibration value and multiply by 100 to express the calibration drift as a percentage. If any calibration drift assessment shows a negative drift of more than 10 percent from the initial calibration value, then all equipment monitored since the last calibration with instrument readings below the appropriate leak definition and above the leak definition multiplied by (100 minus the percent of negative drift/divided by 100) must be re-monitored. If any calibration drift assessment shows a positive drift of more than 10 percent from the initial calibration value, then, at the owner/operator's discretion, all equipment since the last calibration with instrument readings above the appropriate leak definition and below the leak definition multiplied by (100 plus the percent of positive drift/divided by 100) may be re-monitored.**
- (c) The owner or operator shall determine compliance with the no-detectable-emission standards in §§60.482–2a(e), 60.482–3a(i), 60.482–4a, 60.482–7a(f), and 60.482–10a(e) as follows:**

- (1) The requirements of paragraph (b) shall apply.
 - (2) Method 21 of appendix A-7 of this part shall be used to determine the background level. All potential leak interfaces shall be traversed as close to the interface as possible. The arithmetic difference between the maximum concentration indicated by the instrument and the background level is compared with 500 ppm for determining compliance.
- (d) The owner or operator shall test each piece of equipment unless he demonstrates that a process unit is not in VOC service, i.e., that the VOC content would never be reasonably expected to exceed 10 percent by weight. For purposes of this demonstration, the following methods and procedures shall be used:
 - (1) Procedures that conform to the general methods in ASTM E260-73, 91, or 96, E168-67, 77, or 92, E169-63, 77, or 93 (incorporated by reference—see §60.17) shall be used to determine the percent VOC content in the process fluid that is contained in or contacts a piece of equipment.
 - (2) Organic compounds that are considered by the Administrator to have negligible photochemical reactivity may be excluded from the total quantity of organic compounds in determining the VOC content of the process fluid.
 - (3) Engineering judgment may be used to estimate the VOC content, if a piece of equipment had not been shown previously to be in service. If the Administrator disagrees with the judgment, paragraphs
- (d) (1) and (2) of this section shall be used to resolve the disagreement.
- (e) The owner or operator shall demonstrate that a piece of equipment is in light liquid service by showing that all the following conditions apply:
 - (1) The vapor pressure of one or more of the organic components is greater than 0.3 kPa at 20 °C (1.2 in. H₂O at 68 °F). Standard reference texts or ASTM D2879-83, 96, or 97 (incorporated by reference—see §60.17) shall be used to determine the vapor pressures.
 - (2) The total concentration of the pure organic components having a vapor pressure greater than 0.3 kPa at 20 °C (1.2 in. H₂O at 68 °F) is equal to or greater than 20 percent by weight.
 - (3) The fluid is a liquid at operating conditions.
- (f) Samples used in conjunction with paragraphs (d), (e), and (g) of this section shall be representative of the process fluid that is contained in or contacts the equipment or the gas being combusted in the flare.
- (g) The owner or operator shall determine compliance with the standards of flares as follows:
 - (1) Method 22 of appendix A-7 of this part shall be used to determine visible emissions.
 - (2) A thermocouple or any other equivalent device shall be used to monitor the presence of a pilot flame in the flare.
 - (3) The maximum permitted velocity for air assisted flares shall be computed using the

following equation:

$$V_{\max} = K_1 + K_2 H_T$$

Where:

V_{\max} = Maximum permitted velocity, m/sec (ft/sec).

H_T = Net heating value of the gas being combusted, MJ/scm (Btu/scf).

K_1 = 8.706 m/sec (metric units) = 28.56 ft/sec (English units).

K_2 = 0.7084 m⁴/(MJ-sec) (metric units) = 0.087 ft⁴/(Btu-sec) (English units).

- (4) The net heating value (HT) of the gas being combusted in a flare shall be computed using the following equation:

$$H_T = K \sum_{i=1}^n C_i H_i$$

Where:

K = Conversion constant, 1.740×10^{-7} (g-mole)(MJ)/(ppm-scm-kcal) (metric units) = 4.674×10^{-6} [(g-mole)(Btu)/(ppm-scf-kcal)] (English units).

C_i = Concentration of sample component "i," ppm

H_i = net heat of combustion of sample component "i" at 25 °C and 760 mm Hg (77 °F and 14.7 psi), kcal/g-mole.

- (5) Method 18 of appendix A-6 of this part or ASTM D6420-99 (2004) (where the target compound(s) are those listed in Section 1.1 of ASTM D6420-99, and the target concentration is between 150 parts per billion by volume and 100 ppmv) and ASTM D2504-67, 77, or 88 (Reapproved 1993) (incorporated by reference-see §60.17) shall be used to determine the concentration of sample component "i."
- (6) ASTM D2382-76 or 88 or D4809-95 (incorporated by reference-see §60.17) shall be used to determine the net heat of combustion of component "i" if published values are not available or cannot be calculated.
- (7) Method 2, 2A, 2C, or 2D of appendix A-7 of this part, as appropriate, shall be used to determine the actual exit velocity of a flare. If needed, the unobstructed (free) cross-sectional area of the flare tip shall be used.
- (h) The owner or operator shall determine compliance with §60.483-1a or §60.483-2a as follows:

- (1) The percent of valves leaking shall be determined using the following equation:

$$\%V_L = (V_L / V_T) * 100$$

Where:

$\%V_L$ = Percent leaking valves.

V_L = Number of valves found leaking.

V_T = The sum of the total number of valves monitored.

- (2) The total number of valves monitored shall include difficult-to-monitor and unsafe-to-monitor valves only during the monitoring period in which those valves are monitored.**
- (3) The number of valves leaking shall include valves for which repair has been delayed.**
- (4) Any new valve that is not monitored within 30 days of being placed in service shall be included in the number of valves leaking and the total number of valves monitored for the monitoring period in which the valve is placed in service.**
- (5) If the process unit has been subdivided in accordance with §60.482-7a(c)(1)(ii), the sum of valves found leaking during a monitoring period includes all subgroups.**
- (6) The total number of valves monitored does not include a valve monitored to verify repair.**

§ 60.486a Recordkeeping requirements.

- (a) (1) Each owner or operator subject to the provisions of this subpart shall comply with the recordkeeping requirements of this section.**
- (2) An owner or operator of more than one affected facility subject to the provisions of this subpart may comply with the recordkeeping requirements for these facilities in one recordkeeping system if the system identifies each record by each facility.**
- (3) The owner or operator shall record the information specified in paragraphs (a)(3)(i) through (v) of this section for each monitoring event required by §§60.482-2a, 60.482-3a, 60.482-7a, 60.482-8a, 60.482-11a, and 60.483-2a.**
 - (i) Monitoring instrument identification.**
 - (ii) Operator identification.**
 - (iii) Equipment identification.**
 - (iv) Date of monitoring.**
 - (v) Instrument reading.**
- (b) When each leak is detected as specified in §§60.482-2a, 60.482-3a, 60.482-7a, 60.482-8a, 60.482-11a, and 60.483-2a, the following requirements apply:**
 - (1) A weatherproof and readily visible identification, marked with the equipment identification number, shall be attached to the leaking equipment.**
 - (2) The identification on a valve may be removed after it has been monitored for 2 successive months as specified in §60.482-7a(c) and no leak has been detected during those 2 months.**
 - (3) The identification on a connector may be removed after it has been monitored as specified in §60.482-11a(b)(3)(iv) and no leak has been detected during that monitoring.**
 - (4) The identification on equipment, except on a valve or connector, may be removed**

after it has been repaired.

- (c) **When each leak is detected as specified in §§60.482–2a, 60.482–3a, 60.482–7a, 60.482–8a, 60.482–11a, and 60.483–2a, the following information shall be recorded in a log and shall be kept for 2 years in a readily accessible location:**
- (1) **The instrument and operator identification numbers and the equipment identification number, except when indications of liquids dripping from a pump are designated as a leak.**
 - (2) **The date the leak was detected and the dates of each attempt to repair the leak.**
 - (3) **Repair methods applied in each attempt to repair the leak.**
 - (4) **Maximum instrument reading measured by Method 21 of appendix A–7 of this part at the time the leak is successfully repaired or determined to be nonrepairable, except when a pump is repaired by eliminating indications of liquids dripping.**
 - (5) **“Repair delayed” and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak.**
 - (6) **The signature of the owner or operator (or designate) whose decision it was that repair could not be effected without a process shutdown.**
 - (7) **The expected date of successful repair of the leak if a leak is not repaired within 15 days.**
 - (8) **Dates of process unit shutdowns that occur while the equipment is unrepaired.**
 - (9) **The date of successful repair of the leak.**
- (d) **The following information pertaining to the design requirements for closed vent systems and control devices described in §60.482–10a shall be recorded and kept in a readily accessible location:**
- (1) **Detailed schematics, design specifications, and piping and instrumentation diagrams.**
 - (2) **The dates and descriptions of any changes in the design specifications.**
 - (3) **A description of the parameter or parameters monitored, as required in §60.482–10a(e), to ensure that control devices are operated and maintained in conformance with their design and an explanation of why that parameter (or parameters) was selected for the monitoring.**
 - (4) **Periods when the closed vent systems and control devices required in §§60.482–2a, 60.482–3a, 60.482–4a, and 60.482–5a are not operated as designed, including periods when a flare pilot light does not have a flame.**
 - (5) **Dates of startups and shutdowns of the closed vent systems and control devices required in §§60.482–2a, 60.482–3a, 60.482–4a, and 60.482–5a.**

- (e) **The following information pertaining to all equipment subject to the requirements in §§60.482–1a to 60.482–11a shall be recorded in a log that is kept in a readily accessible location:**
- (1) **A list of identification numbers for equipment subject to the requirements of this subpart.**
 - (2)
 - (i) **A list of identification numbers for equipment that are designated for no detectable emissions under the provisions of §§60.482–2a(e), 60.482–3a(i), and 60.482–7a(f).**
 - (ii) **The designation of equipment as subject to the requirements of §60.482–2a(e), §60.482–3a(i), or §60.482–7a(f) shall be signed by the owner or operator. Alternatively, the owner or operator may establish a mechanism with their permitting authority that satisfies this requirement.**
 - (3) **A list of equipment identification numbers for pressure relief devices required to comply with §60.482–4a.**
 - (4)
 - (i) **The dates of each compliance test as required in §§60.482–2a(e), 60.482–3a(i), 60.482–4a, and 60.482–7a(f).**
 - (ii) **The background level measured during each compliance test.**
 - (iii) **The maximum instrument reading measured at the equipment during each compliance test.**
 - (5) **A list of identification numbers for equipment in vacuum service.**
 - (6) **A list of identification numbers for equipment that the owner or operator designates as operating in VOC service less than 300 hr/yr in accordance with §60.482–1a(e), a description of the conditions under which the equipment is in VOC service, and rationale supporting the designation that it is in VOC service less than 300 hr/yr.**
 - (7) **The date and results of the weekly visual inspection for indications of liquids dripping from pumps in light liquid service.**
 - (8) **Records of the information specified in paragraphs (e)(8)(i) through (vi) of this section for monitoring instrument calibrations conducted according to sections 8.1.2 and 10 of Method 21 of appendix A–7 of this part and §60.485a(b).**
 - (i) **Date of calibration and initials of operator performing the calibration.**
 - (ii) **Calibration gas cylinder identification, certification date, and certified concentration.**
 - (iii) **Instrument scale(s) used.**
 - (iv) **A description of any corrective action taken if the meter readout could not be adjusted to correspond to the calibration gas value in accordance with section 10.1 of Method 21 of appendix A–7 of this part.**

- (v) Results of each calibration drift assessment required by §60.485a(b)(2) (i.e., instrument reading for calibration at end of monitoring day and the calculated percent difference from the initial calibration value).
 - (vi) If an owner or operator makes their own calibration gas, a description of the procedure used.
- (9) The connector monitoring schedule for each process unit as specified in §60.482-11a(b)(3)(v).
- (10) Records of each release from a pressure relief device subject to §60.482-4a.
- (g) The following information shall be recorded for valves complying with §60.483-2a:
 - (1) A schedule of monitoring.
 - (2) The percent of valves found leaking during each monitoring period.
- (h) The following information shall be recorded in a log that is kept in a readily accessible location:
 - (1) Design criterion required in §§60.482-2a(d)(5) and 60.482-3a(e)(2) and explanation of the design criterion; and
 - (2) Any changes to this criterion and the reasons for the changes.
- (i) The following information shall be recorded in a log that is kept in a readily accessible location for use in determining exemptions as provided in §60.480a(d):
 - (1) An analysis demonstrating the design capacity of the affected facility,
 - (2) A statement listing the feed or raw materials and products from the affected facilities and an analysis demonstrating whether these chemicals are heavy liquids or beverage alcohol, and
 - (3) An analysis demonstrating that equipment is not in VOC service.
- (j) Information and data used to demonstrate that a piece of equipment is not in VOC service shall be recorded in a log that is kept in a readily accessible location.
- (k) The provisions of §60.7(b) and (d) do not apply to affected facilities subject to this subpart.

§ 60.487a Reporting requirements.

- (a) Each owner or operator subject to the provisions of this subpart shall submit semiannual reports to the Administrator beginning 6 months after the initial startup date.
- (b) The initial semiannual report to the Administrator shall include the following information:
 - (1) Process unit identification.
 - (2) Number of valves subject to the requirements of §60.482-7a, excluding those valves designated for no detectable emissions under the provisions of §60.482-7a(f).

§60.8 of the General Provisions. The provisions of §60.8(d) do not apply to affected facilities subject to the provisions of this subpart except that an owner or operator must notify the Administrator of the schedule for the initial performance tests at least 30 days before the initial performance tests.

- (f) The requirements of paragraphs (a) through (c) of this section remain in force until and unless EPA, in delegating enforcement authority to a state under section 111(c) of the CAA, approves reporting requirements or an alternative means of compliance surveillance adopted by such state. In that event, affected sources within the state will be relieved of the obligation to comply with the requirements of paragraphs (a) through (c) of this section, provided that they comply with the requirements established by the state.

§ 60.488a Reconstruction.

For the purposes of this subpart:

- (a) The cost of the following frequently replaced components of the facility shall not be considered in calculating either the “fixed capital cost of the new components” or the “fixed capital costs that would be required to construct a comparable new facility” under §60.15: Pump seals, nuts and bolts, rupture disks, and packings.
- (b) Under §60.15, the “fixed capital cost of new components” includes the fixed capital cost of all depreciable components (except components specified in §60.488a(a)) which are or will be replaced pursuant to all continuous programs of component replacement which are commenced within any 2-year period following the applicability date for the appropriate subpart. (See the “Applicability and designation of affected facility” section of the appropriate subpart.) For purposes of this paragraph, “commenced” means that an owner or operator has undertaken a continuous program of component replacement or that an owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of component replacement.

§ 60.489a List of chemicals produced by affected facilities.

Process units that produce, as intermediates or final products, chemicals listed in §60.489 are covered under this subpart. The applicability date for process units producing one or more of these chemicals is November 8, 2006.

IDEM Contact

Questions regarding this proposed Federally Enforceable State Operating Permit can be directed to David J. Matousek 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) 232-8253 or toll free at 1-800-451-6027 extension 2-8253.

Indiana Department of Environmental Management Office of Air Quality

Technical Support Document (TSD) for a New Source Construction and Federal Enforceable State Operating Permit (FESOP)

Source Description and Location

Source Name:	Indiana Renewable Fuels, LLC
Source Location:	Section 18, Township 32 North, Range 3 West Argos, Indiana 46501
County:	Marshall County
SIC Code:	2869
Operation Permit No.:	F099-24648-00103
Permit Reviewer:	David J. Matousek

The OAQ has received an application from Indiana Renewable Fuels, LLC related to the construction of a stationary ethanol production plant.

History

Indiana Renewable Fuels, LLC submitted an application on April 20, 2007 to IDEM, OAQ applying for a Federally Enforceable State Operating Permit to construct and operate a new ethanol production plant at Section 18 of Township 32 North, Range 3 West, Argos, Indiana 46501. This is the first air permit approval for this source.

Source Definition

The proposed Indiana Renewable Fuels, LLC (IRF) ethanol plant, source number 099-00103, will use landfill gas generated by the County Line Landfill (the landfill), source number 049-00029, to be supplied by a dedicated pipeline between the two plants. The landfill is located in Fulton County, approximately four miles from the proposed location for the IRF ethanol plant.

IDEM, OAQ examined whether these two sources should be considered one "major source" as defined at 326 IAC 2-7-1(22). In order for these two sources to be considered one major source, they must meet all three of the following criteria:

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

The first area of examination is to determine if the two sources are under common ownership or common control. The proposed IRF ethanol plant and the landfill do not have a common owner. The landfill is owned and operated by the Allied Waste Industries, Incorporated. The proposed IRF ethanol plant will be owned by Indiana Renewable Fuels, LLC. None of the major shareholders of Allied Waste Industries, Incorporated are shareholders in Indiana Renewable Fuels, LLC. Therefore, there is no common ownership.

Common control can exist independently of common ownership. IDEM's Nonrule Policy Document Air-005-NPD discusses how the relationship between sources that are not commonly owned can show that the sources are under common control. This policy is located on IDEM's website at www.idem.IN.gov. This policy has two tests to determine common control. The first test looks at whether one source is an auxiliary activity which directly serves the purpose of the other source, where the second source has a major role in the day-to-day operation of the

auxiliary source. The second test looks at whether either source would exist absent the needs of the other source.

The United States Environmental Protection Agency (U.S. EPA) has made a similar recognition of the creation of common control, including where contracts create support/dependency relationships between two sources. Long standing and often cited guidance in this area comes from a U.S. EPA Region VII letter, dated September 18, 1995, to Peter R. Hamlin of the Iowa Department of Natural Resources. This letter is found on the internet at:

<http://www.epa.gov/region07/programs/artd/air/nsr/nsrmemos/control.pdf>

The Hamlin letter sets out a “not exhaustive” list of questions to explore when determining whether two sources are under common control. These questions focus on whether the two sources share common employees, equipment, products, operational control, other common ties, contractual obligations and whether each source is independent of the other.

The landfill currently flares off the gas it generates from its closed cells. It plans to collect landfill gas at its site, compress it and then transport it through a dedicated pipeline approximately four miles to the proposed ethanol plant. The ethanol plant plans to use the landfill gas as fuel. The ethanol plant will use up to 60% of the landfill gas as fuel, to supplement its use of natural gas. The ethanol plant could function on natural gas as its sole fuel. The two sources anticipate signing a landfill gas supply contract, but no contract has been signed as of July 2, 2007. Neither source will share any management, employees or equipment (besides the pipeline) with the other. Neither source would have a major role in the day to day operation of the other source.

The landfill and the proposed ethanol plant will not be under common control. Each plant could exist independently of the other. If the landfill were to stop producing gas, the ethanol plant could rely on natural gas as its sole fuel source. If the ethanol plant were to shut down, the landfill could return to flaring its gas. Since there is no common control or common ownership, the first element of the definition of “major source” is not met. Since each of the three elements of the definition must be met, there is no reason to examine the other two elements.

IDEM, OAQ finds that the proposed IRF ethanol plant and the landfill do not meet the definition of one “major source”. The two sources should not be combined as a major source. The IRF ethanol plant will be permitted separately from the landfill.

Existing Approvals

There have been no previous approvals issued to this source.

County Attainment Status

The source is located in Marshall County.

Pollutant	Status
PM	Attainment
PM10	Attainment
SO ₂	Attainment
NO ₂	Attainment
8-hour Ozone	Attainment
CO	Attainment
Lead	Attainment

- (a) Marshall County has been classified as unclassifiable or attainment for PM_{2.5}. U.S. EPA has not yet established the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 for PM_{2.5} emissions. Therefore, until the U.S.EPA adopts specific provisions

for PSD review for PM2.5 emissions, it has directed states to regulate PM10 emissions as a surrogate for PM2.5 emissions. See the State Rule Applicability – Entire Source section.

- (b) 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 emissions and NOx emissions are considered when evaluating the rule applicability relating to ozone. Marshall County has been designated as attainment or unclassifiable for ozone. Therefore, VOC emissions and NOx 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) Marshall 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. See the State Rule Applicability – Entire Source section.
- (d) Fugitive Emissions
Effective July 2, 2007, U.S. EPA has revised the definition of a “major stationary source” under 40 CFR Parts 51 and 52 PSD and Nonattainment New Source Review, and the definition of a “major source” under 40 CFR parts 70 and 71 (State and Federal Operating Permits). U.S. EPA has reinterpreted the component term “chemical process plants” within the statutory definition of “major emitting facility” in section 169(1) of the CAA to exclude wet and dry corn milling facilities that produce ethanol for fuel, or produce ethanol through a natural fermentation process that involves the use of such things as corn, sugar beets, sugar cane or cellulosic biomass as a feedstock regardless of whether the ethanol is produced for human consumption, fuel, or for an industrial purpose. Therefore, ethanol plants are no longer required to count fugitive emissions for purposes of determining whether a source is a major source under the PSD, nonattainment NSR, or Title V programs unless there is an applicable New Source Performance Standard that was in effect on August 7, 1980 for the ethanol plant, or the ethanol plant has a “nested” source category. Although the primary source does not fall under one of the 28 listed source categories and fugitive emissions are not counted towards PSD applicability for the primary source; the fugitive emission exclusion is not extended to the boilers located at Indiana Renewable Fuels, LLC because they are considered a “nested” source category. According to U.S. EPA Region V guidance memo addressed to Indiana Department of Environmental Management (dated March 6, 2003), since the combined heat input capacity of the two (2) natural gas / landfill gas fired boilers located at Indiana Renewable Fuels, LLC is greater than 250 MMBtu/hr, the boilers fall under one of the 28 listed source categories and are considered “nested” within a non-listed source. Therefore, fugitive emissions from the natural gas / landfill gas fired boilers located at Indiana Renewable Fuels, LLC are counted for purposes of determining whether this source is a major source under the PSD, nonattainment NSR, Emission Offset and/or Title V programs.
- (e) On October 25, 2006, the Indiana Air Pollution Control Board finalized a rule revision to 326 IAC 1-4-1 revoking the one-hour ozone standard in Indiana.

Emission Units and Pollution Control Equipment Summary

The Office of Air Quality (OAQ) has reviewed a new source review application, submitted by Indiana Renewable Fuels on April 20, 2007, relating to the construction of a stationary ethanol production plant. The following is a list of the proposed emission units and pollution control devices:

Grain Receiving & Processing Facilities:

- (a) One (1) grain receiving and handling operation, identified as EP-1, approved for

construction in 2007, with an annual maximum throughput of 43,214,287 bushels per year, a maximum capacity of 40,000 bushels per hour (1,120 tons per hour) by rail and 20,000 bushels per hour (560 tons per hour) by truck, controlled by baghouses S20 (unloading and transfer baghouse) and S21 (unloading baghouse), exhausting through stack S20 and S21, and consisting of the following:

- (1) One (1) corn unloading operation consisting of:
 - (A) One (1) north unloading pit to receive grain by truck, identified as EP-1B, with a maximum capacity of 560 tons per hour, controlled by baghouse S21 and exhausting to stack S21.
 - (B) One (1) south unloading pit to receive grain by truck and rail, identified as EP-1A, with a maximum capacity of 1,680 tons per hour, controlled by baghouse S20 and exhausting to stack S20.
- (2) Three (3) elevator legs.
- (3) Three (3) storage bin conveyors.
- (4) Two (2) grain storage silos, each with a storage capacity of 500,000 bushels.
- (5) One (1) day storage bin, with a maximum capacity of 10,000 bushels.
- (6) One (1) flat storage area, with a capacity of 4,000,000 bushels.
- (7) One (1) grain storage silo, with a 150,000 bushel capacity.
- (8) One (1) corn scalping operation, with a maximum capacity of 138 tons per hour.
- (b) One (1) milling operation, identified as EP-2, approved for construction in 2007, with a maximum capacity of 15,000 bushels per hour (420 tons per hour), controlled by baghouse S30, identified as the milling baghouse, exhausting through stack S20, and consisting of:
 - (1) Four (4) hammermills.
 - (2) One (1) feed conveyor.

Ethanol Production Plant:

- (a) Ethanol Production Plant, identified as EP-5, approved for construction in 2007, with a maximum production rate of 121,000,000 gallons of ethanol per year, and consisting of the following:
 - (1) One (1) distillation process, identified as EP-5B, approved for construction in 2007, with a maximum throughput of 13,813 gallons per hour, controlled by either one of two regenerative thermal oxidizer (RTO) systems C-10 and C-11, with a maximum heat input capacity of 10 MMBtu/hr, using natural gas for fuel, with emissions exhausting through stack S10. This process consists of the following:
 - (A) One (1) mixer (blend) tank.
 - (B) Two (2) slurry tanks.
 - (C) One (1) cook tube.
 - (D) One (1) flash tank.
 - (E) Two (2) yeast tanks.
 - (F) One (1) beer column.
 - (G) One (1) side stripper.
 - (H) One (1) rectifier column.
 - (I) Two (2) condensers.

- (J) One (1) molecular sieve.

Under 40 CFR Part 60, Subpart VV, the pumps, compressors, pressure relief devices in gas/vapor service, sampling connection systems, open-ended valves or lines, and valves of this process are considered to be affected facilities.

- (2) One (1) fermentation process, identified as EP-5A, with a maximum capacity of 13,813 gallons per hour, controlled by wet scrubber S40, which exhausts to stack S40 and includes the following:

- (A) Seven (7) fermentation tanks.
(B) One (1) beer well.

Under 40 CFR Part 60, Subpart VV, the pumps, compressors, pressure relief devices in gas/vapor service, sampling connection systems, open-ended valves or lines, and valves of this process are considered to be affected facilities.

- (3) One (1) Dried Distillers Grain and Solubles (DDGS) drying process with a maximum throughput of 44.8 tons per hour, controlled by two (2) regenerative thermal oxidizers (RTOs), identified as C-10 and C-11, with a maximum heat input capacity of 10 MMBtu/hr, using natural gas for fuel. This process consists of the following:

- (A) Four (4) DDGS dryers, identified as dryers EP-9A to EP-9D, each with a heat input capacity of 40 MMBtu/hr or a total heat input capacity of 160 MMBtu/hr, with a total drying rate of 392,568 tons of DDGS per year, using natural gas and methanator offgas for combustion. Dryers EP-9A and EP-9B are controlled by RTO C-10. Dryers EP-9C and EP-9D are controlled by RTO C-11. Under 40 CFR Part 60, Subpart VV, this process is considered to be an affected facility.
- (B) Six (6) DDGS centrifuges, with a maximum throughput of 392,568 tons of DDGS per year or 44.8 tons per hour. Under 40 CFR Part 60, Subpart VV, this process is considered to be an affected facility.
- (C) One (1) DDGS evaporator, with a maximum throughput of 392,568 tons of DDGS per year or 44.8 tons per hour. Under 40 CFR Part 60, Subpart VV, this process is considered to be an affected facility.
- (D) DDGS storage facilities:
- (i) Two (2) storage bins, each with a maximum capacity of 4,000 tons.
 - (ii) One (1) flat storage pad, with a maximum capacity of 20,000 bushels per hour.
 - (iii) One (1) wet storage pad.
- (E) One (1) DDGS cooling drum, identified as S70, with a maximum throughput of 392,568 tons of DDGS per year, controlled by a baghouse, identified as S70 and exhausting to stack S70. Under 40 CFR Part 60, Subpart VV, this process is considered to be an affected facility.
- (F) One DDGS loadout operation, identified as EP-10, with a maximum capacity of 44.8 tons per hour, controlled by baghouse S90.

- (4) Ethanol loading racks, identified as EP-8, with a maximum loading capacity of 121 million gallons per year, controlled by enclosed flare EP-14, with a heat input capacity of 12.4 MMBtu/hr and consisting of the following:
 - (A) One (1) ethanol truck loading rack, utilizing submerged loading, with a maximum loading capacity of 121 million gallons per year.
 - (B) One (1) ethanol railcar loading rack, utilizing submerged loading, with a maximum loading capacity of 121 million gallons per year.

Under 40 CFR Part 60, Subpart VV, the pumps, compressors, pressure relief devices in gas/vapor service, sampling connection systems, open-ended valves or lines, and valves of this process are considered to be affected facilities.

- (5) Two (2) natural gas / landfill gas fired boilers, identified as EP-4a and EP-4b, approved for construction in 2007, each with a rated heat input capacity of 145 MMBtu/hr, with emissions venting through stacks S110 and S120, respectively. Under 40 CFR Part 60, Subpart Db, these units are considered affected facilities.

Insignificant Activities

This stationary source also includes the following insignificant activities:

- (a) Combustion related activities, including the following:
 - (1) Space heaters, process heaters, heat treat furnaces, or boilers using:
 - (A) Natural gas with a heat input equal to or less than ten million (10,000,000) Btu per hour.
 - (B) Fuel oil-fired combustion sources with heat input equal to or less than two million (2,000,000) Btu per hour and firing fuel containing equal to or less than five-tenths percent (0.5%) sulfur by weight.
- (b) VOC and HAP storage containers, including the following:
 - (1) Storage tanks with capacity less than or equal to one thousand (1,000) gallons and annual throughputs equal to or less than twelve thousand (12,000) gallons.
 - (2) Vessels storing hydraulic oils, lubricating oils, machining oils and machining fluids.
- (c) Equipment used exclusively for filling drums, pails, or other packing containers with greases and lubricating oils.
- (d) Production related activities, including the following:
 - (1) The application of greases, lubricants, nonvolatile materials and oils as protective coatings.
 - (2) Machining where an aqueous cutting coolant continuously floods the machining interface.
 - (3) Degreasing operations that do not exceed one hundred forty-five (145) gallons per twelve (12) months and are exempt from 326 IAC 20-6.

- (4) Cleaners and solvents characterized as follows where the use of which, for all cleaners and solvents combined, does not exceed one hundred forty-five (145) gallons per twelve (12) months:
 - (A) Having a vapor pressure equal to or less than two (2.0) kilo Pascals (fifteen (15) millimeters of mercury or three-tenths (0.3) pound per square inch) measured at thirty-eight (38) degrees Centigrade (one hundred (100) degrees Fahrenheit); or
 - (B) Having a vapor pressure equal to or less than seven-tenths (0.7) kilo Pascal (five (5) millimeters of mercury or one-tenth (0.1) pound per square inch) measured at twenty (20) degrees Centigrade (sixty-eight (68) degrees Fahrenheit);

the use of which, for all cleaners and solvents combined, does not exceed one hundred forty-five (145) gallons per twelve (12) months.
- (5) Closed loop heating and cooling systems.
- (e) Solvent recycling systems with batch capacity less than or equal to one hundred (100) gallons.
- (f) Water-based activities including the following:
 - (1) Operations using an aqueous solution containing less than one percent (1%) by weight of VOCs excluding HAPs.
 - (2) Water-based adhesives that are less than or equal to five percent (5%) by volume of VOCs excluding HAPs.
 - (3) One (1) noncontact draft cooling tower system not regulated under a NESHAP, identified as EP-11, approved for construction in 2007, with a maximum throughput of 3,000,000 gallons of water per hour, with emissions exhausting through stack F80.
- (g) Repair activities including the following:
 - (1) Replacement or repair of bags in baghouses and filters in other air filtration equipment.
 - (2) Heat exchanger cleaning and repair.
 - (3) Process vessel degassing and cleaning to prepare for internal repairs.
- (h) Paved roads and parking lots with public access.
- (i) Routine maintenance and repair of buildings, structures, or vehicles at the source where air emissions from those activities would not be associated with any production process, in the purging of gas lines and process vessels.
- (j) Blowdown for boilers and cooling towers.
- (k) One (1) emergency diesel powered fire pump, identified as EP-16, approved for construction in 2007, with a maximum power rating of 300 HP, with uncontrolled emissions, and exhausting to stack S100.
- (l) Purge double block and bleed valves.

- (m) Filter or coalescer media changeout.
- (n) Emissions from a laboratory.
- (o) Other emission units, not regulated by a NESHAP, with PM₁₀, NO_x, and SO₂ emissions less than five (5) pounds per hour or twenty-five (25) pounds per day, CO emissions less than twenty-five (25) pounds per day, VOC emissions less than three (3) pounds per hour or fifteen (15) pounds per day, lead emissions less than six-tenths (0.6) tons per year or three and twenty-nine hundredths (3.29) pounds per day, and emitting greater than one (1) pound per day but less than five (5) pounds per day or one (1) ton per year of a single HAP, or emitting greater than one (1) pound per day but less than twelve and five tenths (12.5) pounds per day or two and five tenths (2.5) ton per year of any combination of HAPs:
 - (1) Two (2) denatured ethanol storage tanks, identified as T61 and T62, approved for construction in 2007, each with a maximum capacity of 1,500,000 gallons and an annual throughput of 60.5 million gallons per year, equipped with an internal floating roof and constructed in accordance with 40 CFR Part 60, Subpart Kb.
 - (2) One (1) 200 proof ethanol storage tank, identified as T63, approved for construction in 2007, with a maximum capacity of 200,000 gallons and an annual throughput of 121 million gallons per year, equipped with an internal floating roof and constructed in accordance with 40 CFR Part 60, Subpart Kb.
 - (3) One (1) denaturant (gasoline) storage tank, identified as T64, approved for construction in 2007, with a maximum capacity of 200,000 gallons and an annual throughput of 6.05 million gallons per year, equipped with an internal floating roof and constructed in accordance with 40 CFR Part 60, Subpart Kb.
 - (4) One (1) 190 proof ethanol storage tank, identified as T65, approved for construction in 2007, with a maximum capacity of 200,000 gallons and an annual throughput of 121 million gallons per year, equipped with an internal floating roof and constructed in accordance with 40 CFR Part 60, Subpart Kb.
 - (5) One (1) thin stillage tank.
 - (6) One (1) syrup tank.
 - (7) One (1) cook water tank.
 - (8) Four (4) liquification tanks.
 - (9) Four (4) methanators, identified as EP-20, exhausting to the DDGS dryers as supplemental fuel, controlled by smokeless enclosed flare EP-15, with a maximum heat input capacity of 6.4 MMBtu/hr and exhausting to stack S60.

Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (°F)
S10	Regenerative Thermal Oxidizer (RTO) System	75	7.00	150,000	300
S20	Grain Receiving and Handling - North Unloading	40	3.50	36,900	ambient
S21	Grain Receiving and Handling - North Unloading	40	3.67	38,200	ambient
S30	Milling Operation	40	3.33	28,000	ambient
S40	Fermentation Process	75	2.25	11,000	65
S50	Loadout Flare EP-14	30	2.50	34,000	1,800
S60	Biomethanator Flare EP-15	30	1.42	6,400	1,800
S70	DDGS Cooling Drum	48	4.00	17,000	110
F80	Cooling Tower EP-11	40	25.33	780,000	85
S90	DDGS Handling and Loadout	40	2.16	9,100	ambient
S100	Emergency Fire Pump	8	0.25	1,740	770
S110	Boiler EP-4a	60	5.00	34,000	350
S120	Boiler EP-4b	60	5.00	34,000	350

Emission Calculations

See Appendix A of this document for detailed emission calculations.

Permit Level Determination - FESOP

Pursuant to 326 IAC 2-7-1(29), Potential to Emit is defined as “the maximum capacity of a stationary source or emission unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount

of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA, IDEM, or the appropriate local air pollution control agency.”

This table reflects the PTE before controls.

Pollutant	PTE Before Controls (tons/year)
PM	1,284.78
PM10	1,257.78
SO ₂	89.60
VOC	2,956.98
CO	128.24
NO _x	121.06
Total HAPs	622.52

The following table summarizes the total potential to emit, reflecting all limits, of the significant emission units after control and upon startup of the ethanol production plant. The source is a minor source under PSD rules and section 112 of the clean air act. The potential to emit of the criteria pollutants from the entire source is limited to less than the Title V major source thresholds. Therefore, the requirements of 326 IAC 2-7 are not applicable to this source. A FESOP will be issued.

Pollutant	PTE After Controls (tons/year)
PM	67.54
PM10	67.00
SO ₂	89.56
VOC	93.73
CO	98.75
NO _x	98.37
Total HAPs	24.48

- (a) Since the unrestricted potential to emit of this source is greater than one hundred (100) tons of PM₁₀ per year and greater than two hundred fifty (250) tons of PM per year, the Permittee has elected to limit the potential to emit of this source as follows:
- (1) The PM/PM10 emissions from the grain receiving and handling operation, south unloading, identified as EP-1A, controlled by baghouse S20, and exhausting to stack S20, shall be limited to 1.58 lbs/hr.
 - (2) The PM/PM10 emissions from the grain receiving and handling operation, north unloading, identified as EP-1B, controlled by baghouse S21, and exhausting to stack S21, shall be limited to 1.64 lbs/hr.
 - (3) The PM/PM10 emissions from the milling operation, identified as EP-2, controlled by baghouse S30, and exhausting to stack S31, shall be limited to 1.20 lbs/hr.
 - (4) The PM/PM10 emissions from the regenerative thermal oxidizers (RTOs), identified as C-10 and C-11, exhausting to stack S10, shall be limited to 3.58 lbs/hr.
 - (5) The total input of landfill gas to boilers EP-4a and EP-4b, shall not exceed 2,989 MMCF per twelve (12) consecutive month period with the compliance determined at the end of each month.

- (6) The PM/PM10 emissions from each boiler shall not exceed the following:
 - (i) 7.60 lb/MMCF while burning natural gas alone.
 - (ii) 8.16 lb/MMCF while burning landfill gas alone.
- (7) The PM/PM10 emissions from the DDGS cooling drum, identified as S70, controlled by baghouse S70, and exhausting to stack S70, shall be limited to 2.14 lbs/hr.
- (8) The PM/PM10 emissions from DDGS handling and loadout, identified as S90, controlled by baghouse S90, and exhausting to stack S90, shall be limited to 0.47 lbs/hr.

Combined with the PM10 emissions from other emission units, the PM10 emissions from the entire source are limited to less than 100 tons/yr. Combined with the PM emissions from other emission units, the PM emissions from the entire source are limited to less than 250 tons/yr. Therefore, the requirements of 326 IAC 2-7 (Part 70 Program) and 326 IAC 2-2 (PSD) are not applicable.

- (b) Since the unrestricted potential to emit of this source is greater than one hundred (100) tons of NOx per year, the Permittee has elected to limit NOx potential to emit of this source as follows:
 - (1) The total NOx emissions from the regenerative thermal oxidizer (RTO) systems, identified as C-10 and C-11, and exhausting to stack S10, shall be limited to 9.00 lbs/hr.
 - (2) The total NOx emissions from the natural gas / landfill gas fired boilers, identified as EP-4a and EP-4b, and exhausting to stacks S-110 and S-120, shall be limited to 22.95 lb/MMCF.
 - (3) The fuel usage for the ethanol loadout flare, EP-14, shall not exceed 34.4 MMCF per twelve (12) consecutive month period and the NOx emissions shall not exceed 68.68 lb NOx/MMCF.
 - (4) The biomethanator flare, EP-15, shall not operate when any of the DDGS dryers are in operation. The fuel usage for the biomethanator flare shall not exceed 13.7 MMCF per twelve (12) consecutive month period. The NOx emissions from the biomethanator flare shall not exceed 70.07 lb NOx/MMCF.

Compliance with these emission limits will ensure that the potential to emit from this source is less than one hundred (100) tons of NOx per year and therefore will render the requirements of 326 IAC 2-7 and 326 IAC 2-2 not applicable.

- (c) Since the unrestricted potential to emit of this source is greater than one hundred (100) tons of VOC per year and greater than 10 tons per year of a single HAP and greater than 25 tons per year of a combination of HAPS, the Permittee has elected to limit the potential to emit of this source as follows:
 - (1) The VOC emissions from the wet scrubber, identified as S40, which exhausts to stack S40 shall be less than 11.05 lbs/hr.
 - (2) The acetaldehyde emission from the wet scrubber, identified as S40, which exhausts to stack S40 shall be less than 1.38 lbs/hr.
 - (3) The total HAP emissions from the wet scrubber, identified as S40, which exhausts to stack S40 shall be less than 1.68 lbs/hr.

- (4) The acrolein emission from the wet scrubber, identified as S40, which exhausts to stack S40 shall be less than 0.023 lb/hr.
- (5) The total VOC emissions from the regenerative thermal oxidizer (RTO) system, which exhausts to stack S10, shall be limited to 3.14 lbs/hr.
- (6) The total HAP emissions from the regenerative thermal oxidizer (RTO) system, which exhausts to stack S10, shall be limited to 1.41 lbs/hr.
- (7) The acetaldehyde emissions from the regenerative thermal oxidizer (RTO) system, which exhausts to stack S10, shall not exceed 0.38 lbs/hr.
- (8) The VOC emissions from enclosed smokeless flare EP-14, loadout flare, shall not exceed 5.51 tons per 121,000 kgal or 0.09 lb/kgal.
- (9) The acetaldehyde emission from the DDGS cooling drum (S70), which exhausts to stack S70, shall be limited to less than 0.13 lb/hr.
- (10) The acrolein emission from the regenerative thermal oxidizer (RTO) system, which exhausts to stack S10, shall be limited to less than 0.09 lb/hr.

Compliance with these emission limits will ensure that the potential to emit from this source is less than one hundred (100) tons of VOC per year, ten (10) tons of a single HAP and twenty-five (25) tons of total HAPs, and therefore will render the requirements of 326 IAC 2-7, 326 IAC 2-2 and 326 IAC 2-4.1 (MACT) are not applicable.

- (d) Since the unrestricted potential to emit of this source is greater than one hundred (100) tons of CO per year, the Permittee has elected to limit the potential to emit of this source as follows:

- (1) The CO emissions from the regenerative thermal oxidizers (RTOs), identified as C-10 and C-11, exhausting to stack S10, shall be limited to 8.96 lbs/hr.
- (2) The CO emissions from the natural gas / landfill gas fired boiler, identified as EP-4a and 4b, exhausting to stacks S110 and S120 shall be limited to 20.40 lb/MMCF.
- (3) The CO emissions from smokeless enclosed flare EP-14 shall not exceed 362.63 lb CO/MMCF.

Compliance with these emission limits will ensure that the potential to emit from this source is less than one hundred (100) tons of CO per year and therefore will render the requirements of 326 IAC 2-7 and 326 IAC 2-2 not applicable.

Federal Rule Applicability Determination

The following federal rules are applicable to the source:

- 1) The ethanol production plant, identified as EP-5, is subject to the New Source Performance Standards for Equipment Leaks of VOC in the Synthetic Organic Chemical Manufacturing Industry (40 CFR 60.480, Subpart VV), which is incorporated by reference as 326 IAC 12. The units subject to this rule include the following:

Ethanol Production Plant:

- (a) Ethanol Production Plant, identified as EP-5, approved for construction in 2007, with a maximum production rate of 121,000,000 gallons of ethanol per year, and consisting of the following:

- (1) One (1) distillation process, identified as EP-5B, approved for construction in 2007, with a maximum throughput of 13,813 gallons per hour, controlled by either one of two regenerative thermal oxidizer (RTO) systems C-10 and C-11, with a maximum heat input capacity of 10 MMBtu/hr, using natural gas for fuel, with emissions exhausting through stack S10. This process consists of the following:
- (A) One (1) mixer (blend) tank.
 - (B) Two (2) slurry tanks.
 - (C) One (1) cook tube.
 - (D) One (1) flash tank.
 - (E) Two (2) yeast tanks.
 - (F) One (1) beer column.
 - (G) One (1) side stripper.
 - (H) One (1) rectifier column.
 - (I) Two (2) condensers.
 - (J) One (1) molecular sieve.

Under 40 CFR Part 60, Subpart VV, the pumps, compressors, pressure relief devices in gas/vapor service, sampling connection systems, open-ended valves or lines, and valves of this process are considered to be affected facilities.

- (2) One (1) fermentation process, identified as EP-5A, with a maximum capacity of 13,813 gallons per hour, controlled by wet scrubber S40, which exhausts to stack S40 and includes the following:
- (A) Seven (7) fermentation tanks.
 - (B) One (1) beer well.

Under 40 CFR Part 60, Subpart VV, the pumps, compressors, pressure relief devices in gas/vapor service, sampling connection systems, open-ended valves or lines, and valves of this process are considered to be affected facilities.

- (3) One (1) Dried Distillers Grain and Solubles (DDGS) drying process with a maximum throughput of 44.8 tons per hour, controlled by two (2) regenerative thermal oxidizers (RTOs), identified as C-10 and C-11, with a maximum heat input capacity of 10 MMBtu/hr, using natural gas for fuel. This process consists of the following:
- (A) Four (4) DDGS dryers, identified as dryers EP-9A to EP-9D, each with a heat input capacity of 40 MMBtu/hr or a total heat input capacity of 160 MMBtu/hr, with a total drying rate of 392,568 tons of DDGS per year, using natural gas and methanator offgas for combustion. Dryers EP-9A and EP-9B are controlled by RTO C-10. Dryers EP-9C and EP-9D are controlled by RTO C-11. Under 40 CFR Part 60, Subpart VV, this process is considered to be an affected facility.
 - (B) Six (6) DDGS centrifuges, with a maximum throughput of 392,568 tons of DDGS per year or 44.8 tons per hour. Under 40 CFR Part 60, Subpart VV, this process is considered to be an affected facility.
 - (C) One (1) DDGS evaporator, with a maximum throughput of 392,568 tons of DDGS per year or 44.8 tons per hour. Under 40

CFR Part 60, Subpart VV, this process is considered to be an affected facility.

- (D) One (1) DDGS cooling drum, identified as S70, with a maximum throughput of 392,568 tons of DDGS per year, controlled by a baghouse, identified as S70 and exhausting to stack S70. Under 40 CFR Part 60, Subpart VV, this process is considered to be an affected facility.
- (5) Ethanol loading racks, identified as EP-8, with a maximum loading capacity of 121 million gallons per year, controlled by an enclosed flare, with a heat input capacity of 12.4 MMBtu/hr and consisting of the following:
 - (A) One (1) ethanol truck loading rack, utilizing submerged loading, with a maximum loading capacity of 121 million gallons per year.
 - (B) One (1) ethanol railcar loading rack, utilizing submerged loading, with a maximum loading capacity of 121 million gallons per year.

Under 40 CFR Part 60, Subpart VV, the pumps, compressors, pressure relief devices in gas/vapor service, sampling connection systems, open-ended valves or lines, and valves of this process are considered to be affected facilities.

Nonapplicable portions of the 40 CFR Part 60 will not be included in the permit. The units, identified as EP-5, are subject to the following portions of Subpart VV.

- (1) 40 CFR 60.480(a)(1)
- (2) 40 CFR 60.480(a)(2)
- (3) 40 CFR 60.480(b) to (c)
- (4) 40 CFR 60.480(d)(1) to (d)(5)
- (5) 40 CFR 60.481
- (6) 40 CFR 60.482-1(a)
- (7) 40 CFR 60.482-1(b)
- (8) 40 CFR 60.482-1(c)(1)
- (9) 40 CFR 60.482-1(c)(2)
- (10) 40 CFR 60.482-1(d)
- (11) 40 CFR 60.482-2(a)(1)
- (12) 40 CFR 60.482-2(a)(2)
- (13) 40 CFR 60.482-2(b)(1)
- (14) 40 CFR 60.482-2(b)(2)
- (15) 40 CFR 60.482-2(c)(1)
- (16) 40 CFR 60.482-2(c)(2)
- (17) 40 CFR 60.482-4(a)
- (18) 40 CFR 60.482-4(b)(1)
- (19) 40 CFR 60.482-4(b)(2)
- (20) 40 CFR 60.482-4(c)
- (21) 40 CFR 60.482-4(d)
- (22) 40 CFR 60.482-4(d)(1)
- (23) 40 CFR 60.482-4(d)(2)
- (24) 40 CFR 60.482-6(a)(1)
- (25) 40 CFR 60.482-6(a)(2)
- (26) 40 CFR 60.482-6(b) to (e)
- (27) 40 CFR 60.482-7(a)
- (28) 40 CFR 60.482-7(b)
- (29) 40 CFR 60.482-7(c)(1)
- (30) 40 CFR 60.482-7(c)(2)

- (31) 40 CFR 60.482-7(d)(1)
- (32) 40 CFR 60.482-7(d)(2)
- (33) 40 CFR 60.482-7(e)(1) to (e)(4)
- (34) 40 CFR 60.482-8(a)
- (35) 40 CFR 60.482-8(a)(1)
- (36) 40 CFR 60.482-8(a)(2)
- (37) 40 CFR 60.482-8(b)
- (38) 40 CFR 60.482-8(c)(1)
- (39) 40 CFR 60.482-8(c)(2)
- (40) 40 CFR 60.482-8(d)
- (41) 40 CFR 60.482-9(a) to (c)
- (42) 40 CFR 60.482-9(c)(1)
- (43) 40 CFR 60.482-9(c)(2)
- (44) 40 CFR 60.482-9(d)(1)
- (45) 40 CFR 60.482-9(d)(2)
- (46) 40 CFR 60.482-9(e)
- (47) 40 CFR 60.482-10(a) to (f)
- (48) 40 CFR 60.482-10(f)(1)
- (49) 40 CFR 60.482-10(f)(1)(i)
- (50) 40 CFR 60.482-10(f)(1)(ii)
- (51) 40 CFR 60.482-10(f)(2)
- (52) 40 CFR 60.482-10(f)(2)(i)
- (53) 40 CFR 60.482-10(f)(2)(ii)
- (54) 40 CFR 60.482-10(g)
- (55) 40 CFR 60.482-10(g)(1)
- (56) 40 CFR 60.482-10(g)(2)
- (57) 40 CFR 60.482-10(h) to (j)
- (58) 40 CFR 60.482-10(j)(1)
- (59) 40 CFR 60.482-10(j)(2)
- (60) 40 CFR 60.482-10(k)
- (61) 40 CFR 60.482-10(k)(1) to (k)(3)
- (62) 40 CFR 60.482-10(l)
- (63) 40 CFR 60.482-10(l)(1) to (5)
- (64) 40 CFR 60.482-10(m)
- (65) 40 CFR 60.483-1(a) to (b)
- (66) 40 CFR 60.483-1(b)
- (67) 40 CFR 60.483-2(a)(1) to (a)(2)
- (68) 40 CFR 60.484(a) to (b)
- (69) 40 CFR 60.484(b)(1) to (b)(3)
- (70) 40 CFR 60.484(c)
- (71) 40 CFR 60.484(c)(1) to (c)(6)
- (72) 40 CFR 60.484(d)
- (73) 40 CFR 60.484(e)(1) to (e)(3)
- (74) 40 CFR 60.484(f)(1) to (f)(2)
- (75) 40 CFR 60.485(a) to (b)
- (76) 40 CFR 60.485(b)(1)
- (77) 40 CFR 60.485(b)(1)(i) to (ii)
- (78) 40 CFR 60.485(c)
- (79) 40 CFR 60.485(c)(1) to (c)(2)
- (80) 40 CFR 60.485(d)
- (81) 40 CFR 60.485(d)(1) to (d)(3)
- (82) 40 CFR 60.485(e)
- (83) 40 CFR 60.485(e)(1) to (e)(3)
- (84) 40 CFR 60.485(f)
- (85) 40 CFR 60.485(g)
- (86) 40 CFR 60.485(g)(1) to (7)
- (87) 40 CFR 60.486(a)(1) to (a)(2)
- (88) 40 CFR 60.486(b)

- (89) 40 CFR 60.486(b)(1) to (3)
- (90) 40 CFR 60.486(c)
- (91) 40 CFR 60.486(c)(1) to (9)
- (92) 40 CFR 60.486(c)
- (93) 40 CFR 60.486(c)(1) to (9)
- (94) 40 CFR 60.486(d)
- (95) 40 CFR 60.486(d)(1) to (5)
- (96) 40 CFR 60.486(e)
- (97) 40 CFR 60.486(e)(1) to (e)(5)
- (98) 40 CFR 60.486(c)
- (99) 40 CFR 60.487(a)
- (100) 40 CFR 60.487(b)
- (101) 40 CFR 60.487(b)(1) to (b)(4)
- (102) 40 CFR 60.487(c)
- (103) 40 CFR 60.487(c)(1) to (c)(4)
- (104) 40 CFR 60.487(d) to (f)
- (105) 40 CFR 60.488(a) to (b)
- (106) 40 CFR 60.489

- 2) Two (2) natural gas / landfill gas fired boilers, identified as EP-4a and EP-4b, approved for construction in 2007, each with a rated heat input capacity of 145 MMBtu/hr, with emissions venting through stacks S110 and S120, respectively. Under 40 CFR Part 60, Subpart Db, these units are considered affected facilities.

Nonapplicable portions of the NSPS will not be included in the permit. The two (2) natural gas / landfill gas fired boilers, identified as EP-4a and EP-4b, are subject to the following portions of Subpart Db:

- (1) 40 CFR 60.40b(a)
- (2) 40 CFR 60.40b(g)
- (3) 40 CFR 60.40b(g)(1) to (g)(3)
- (4) 40 CFR 60.41b
- (5) 40 CFR 60.44b(a)
- (6) 40 CFR 60.44b(h)
- (7) 40 CFR 60.44b(i)
- (8) 40 CFR 60.46b(a)
- (9) 40 CFR 60.46b(c)
- (10) 40 CFR 60.46b(e)
- (11) 40 CFR 60.46b(e)(1)
- (12) 40 CFR 60.48b(b)
- (13) 40 CFR 60.48b(b)(1)
- (14) 40 CFR 60.48b(c) to (e)
- (15) 40 CFR 60.48b(e)(2), (e)(2)(i), (e)(2)(ii) and (e)(3)
- (16) 40 CFR 60.48b(f)
- (17) 40 CFR 60.49b(a) and (a)(1)
- (18) 40 CFR 60.49b(b)
- (19) 40 CFR 60.49b(c)
- (20) 40 CFR 60.49b(c)(1) to (c)(3)
- (21) 40 CFR 60.49b(d), (f) and (g)
- (22) 40 CFR 60.49b(g)(1) to (10)
- (23) 40 CFR 60.49b(i)
- (24) 40 CFR 60.49b(o)

- 3) Five (5) VOC storage tanks, identified as T61 to T65, are subject to the New Source Performance Standards for Volatile Organic Liquid Storage Vessels (including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984 (40 CFR Part 60, Subpart Kb), which is incorporated by reference as 326 IAC 12.

Nonapplicable portions of the NSPS will not be included in the permit. The storage tanks, identified as T61 to T65, are subject to the following portions of Subpart Kb:

- (1) 40 CFR 60.110b(a) to (c)
- (2) 40 CFR 60.111b
- (3) 40 CFR 60.112b(a)
- (4) 40 CFR 60.112b(a)(1)
- (5) 40 CFR 60.112b(a)(1)(i) to (ix)
- (6) 40 CFR 60.113b(a)
- (7) 40 CFR 60.113b(a)(1) to (5)
- (8) 40 CFR 60.115b
- (9) 40 CFR 60.115b(a)
- (10) 40 CFR 60.115b(a)(1) to (4)
- (11) 40 CFR 60.116b(a) to (e)
- (12) 40 CFR 60.116b(e)(1) to (3)(iv)
- (13) 40 CFR 60.117b(a)
- (14) 40 CFR 60.117b(b)

- 4) One (1) emergency diesel powered fire pump, identified as EP-16, is subject to the New Source Performance Standards for Stationary Compression Ignition Internal Combustion Engines (40 CFR Part 60, Subpart IIII), which is incorporated by reference as 326 IAC 12.

Nonapplicable portions of the NSPS will not be included in the permit. The fire pump, identified as EP-16, are subject to the following portions of Subpart IIII:

- (1) 40 CFR 60.4200(a)
- (2) 40 CFR 60.4200(a)(2)
- (3) 40 CFR 60.4200(a)(2)(ii)
- (4) 40 CFR 60.4200(b)
- (5) 40 CFR 60.4205(c)
- (6) 40 CFR 60.4206
- (7) 40 CFR 60.4207(a), (b) and (c)
- (8) 40 CFR 60.4208(a), (b), (c), (d), (e), (f), (g) and (h)
- (9) 40 CFR 60.4209
- (10) 40 CFR 60.4209(a)
- (11) 40 CFR 60.4211(a), (c) and (e)
- (12) 40 CFR 60.4212
- (13) 40 CFR 60.4212(a), (b), (c) and (d)
- (14) 40 CFR 60.4214(b)
- (15) 40 CFR 60.4218
- (16) 40 CFR 60.4219

- 5) This source does not have a grain elevator with a permanent storage capacity greater than 2.5 million bushels. Therefore, the requirements of the New Source Performance Standards for Grain Elevators (326 IAC 12, 40 CFR 60.300-304, Subpart DD) are not included in this permit.

State Rule Applicability Determination

The following state rules are applicable to the source:

326 IAC 2-2 and 2-3 (PSD and Emission Offset)

Effective July 2, 2007, U.S. EPA has revised the definition of a “major stationary source” under 40 CFR Parts 51 and 52 PSD and Nonattainment New Source Review, and the definition of a “major source” under 40 CFR parts 70 and 71 (State and Federal Operating Permits). U.S. EPA has reinterpreted the component term “chemical process plants” within the statutory definition of “major emitting facility” in section 169(1) of the CAA to exclude wet and dry corn milling facilities that produce ethanol for fuel, or produce ethanol through a natural fermentation process that involves the use of such things as corn, sugar beets, sugar cane or cellulosic biomass as a

feedstock regardless of whether the ethanol is produced for human consumption, fuel, or for an industrial purpose. Therefore, ethanol plants are no longer required to count fugitive emissions for purposes of determining whether a source is a major source under the PSD, nonattainment NSR, or Title V programs unless there is an applicable New Source Performance Standard that was in effect on August 7, 1980 for the ethanol plant, or the ethanol plant has a "nested" source category.

Although the primary source does not fall under one of the 28 listed source categories and fugitive emissions are not counted towards PSD applicability for the primary source; the fugitive emission exclusion is not extended to the boilers located at Indiana Renewable Fuels, LLC because they are considered a "nested" source category. According to U.S. EPA Region V guidance memo addressed to Indiana Department of Environmental Management (dated March 6, 2003), since the combined heat input capacity of the two (2) natural gas / landfill gas fired boilers located at Indiana Renewable Fuels, LLC is greater than 250 MMBtu/hr, the boilers fall under one of the 28 listed source categories and are considered "nested" within a non-listed source. Therefore, fugitive emissions from the natural gas / landfill gas fired boilers located at Indiana Renewable Fuels, LLC are counted for purposes of determining whether this source is a major source under the PSD, nonattainment, or Title V programs.

Since the boilers are considered one of 28 source categories, the potential to emit particulate matter (PM) from the boilers shall be limited to less than one hundred (100) tons per twelve (12) consecutive month period. This limitation shall make the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable.

The total potential to emit of PM from the entire source shall be less than two hundred and fifty (250) tons per twelve (12) consecutive month period. This limitation shall make the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable.

326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))

The operation of this facility will emit less than ten (10) tons per year for a single HAP and less than twenty-five (25) tons per year for a combination of HAPs. Therefore, 326 IAC 2-4.1 does not apply.

326 IAC 2-6 (Emission Reporting)

Pursuant to 326 IAC 2-6-1, this source is not subject to this rule because it is not required to have an operating permit under 326 IAC 2-7 (Part 70), it is not located in Lake or Porter Counties, and it does not emit lead into the ambient air at levels equal to or greater than 5 tons per year. Therefore, 326 IAC 2-6 does not apply.

326 IAC 6-2-4 (Particulate Emission Limitations for Sources of Indirect Heating: Emission Limitations for Facilities Specified in 326 IAC 6-2-1(d))

Two (2) natural gas / landfill gas fired boilers, identified as E-4a and EP-4b, which are considered sources of indirect heat, will be constructed after September 21, 1983. Therefore, the boilers are subject to the requirements of 326 IAC 6-2-4 and shall comply with the following emission limit:

The PM emissions from the boilers (EP-4a and EP-4b) shall not exceed 0.25 pounds per million Btu heat input (lb/MMBtu). This limitation was calculated using the following equation:

$$Pt = \frac{1.09}{Q^{0.26}}$$

Where

Q = total source heat input capacity (MMBtu/hr)

For this unit, Q = 290.0 MMBtu/hr.

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)

Pursuant to 326 IAC 6-3-2, the particulate matter (PM) from the following operations shall not exceed the pounds per hour emission limits listed in the table below:

Unit ID	Unit Description	Emission Control Unit	Max. Throughput Rate (tons/hr)	Particulate Emission Limit (lb/hr)
EP-1A	Grain Receiving and Handling - South Unloading	S20	1,680.0	84.5
EP-1B	Grain Receiving and Handling - North Unloading	S21	560.0	70.3
EP-2A	Hammermill	S30	420.0	66.9
EP-2B	Hammermill	S30	420.0	66.9
EP-2C	Hammermill	S30	420.0	66.9
EP-2D	Hammermill	S30	420.0	66.9
EP-9A	DDGS Dryer	C10	11.2	20.7
EP-9B	DDGS Dryer	C10	11.2	20.7
EP-9C	DDGS Dryer	C11	11.2	20.7
EP-9D	DDGS Dryer	C11	11.2	20.7
S70	DDGS Cooling Drum	S70	44.8	43.6
EP-10	DDGS Handling and Loadout Operation	S90	44.8	43.6

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

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

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour; and } P = \text{process weight rate in tons per hour}$$

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

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

Pursuant to 326 IAC 6-3-25(e)(3), when the process weight rate exceeds 200 tons per hour, the maximum allowable emission may exceed the emission limits shown in the table above, provided the concentration of particulate matter in the gas discharged to the atmosphere is less than 0.10 pounds per 1,000 pounds of gas.

The baghouses for each process unit operation listed above shall be in operation at all times the process unit is in operation, in order to comply with this limit.

326 IAC 8-4-3 (Petroleum Liquid Storage Facilities)

The denaturant storage tank T64 has a maximum capacity greater than 39,000 gallons and will be used to store gasoline which has a vapor pressure greater than 1.52 psi. Therefore, tank T64 is subject to the requirements of 326 IAC 8-4-3. Tank T64 will be equipped with an internal floating roof. The Permittee shall comply with the following requirements for tank T64:

- (a) Pursuant to 326 IAC 8-4-3(b)(1)(B), storage tank T64 shall be maintained such that there are no visible holes, tears, or other openings in the seal or any seal fabric or materials.
- (b) Pursuant to 326 IAC 8-4-3(b)(1)(C), all openings, except stub drains, are equipped with covers, lids, or seals such that:
 - (1) The cover, lid or seal in the closed position at all times except when in actual use;
 - (2) Automatic bleeder vents are closed at all times except when the roof is floated off or landed on the roof leg supports;
 - (3) Rim vents, if provided, are set to open when the roof is being floated off the roof leg supports or at the manufacturer's recommended setting.
- (c) Pursuant to 326 IAC 8-4-3(d) (Petroleum Liquid Storage Facilities), the Permittee shall maintain the following records for a period of two (2) years for tank T64:
 - (1) The types of volatile petroleum liquid stored;
 - (2) The maximum true vapor pressure of the liquids as stored; and
 - (3) The results of the inspections performed on the storage vessels.

The above records shall be made available to the IDEM, OAQ upon written request.

326 IAC 8-1-6 (New Facilities; General Reduction Requirements)

The fermentation process, distillation process, DDGS dryers, and ethanol loadout operation located at this source are subject to the requirements of 326 IAC 8-5-6. Therefore, these operations are not subject to the requirements of 326 IAC 8-1-6 (BACT). The Permittee has provided emission data from a similar plant showing the DDGS cooling drum has potential VOC emissions of less than twenty-five (25) tons per year. The Permittee will be required to perform testing at start-up to confirm emissions are less than twenty-five (25) tons per year. Therefore, the DDGS cooling drum is not subject to the requirements of 326 IAC 8-1-6 (BACT).

326 IAC 8-5-6 (Fuel Grade Ethanol Production at Dry Mills)

The proposed ethanol production plant will be constructed after April 1, 2007, will use dry mill operations, and have combined potential VOC emissions from the fermentation process, distillation process, DDGS dryers, and the ethanol loadout operation greater than twenty-five (25) tons per year. Therefore, this fermentation process, distillation process, DDGS dryers, and ethanol load-out operation at this source are subject to 326 IAC 8-5-6 (Fuel Grade Ethanol Production at Dry Mills) and shall comply with the following:

- (a) Pursuant to 326 IAC 8-5-6(c), the Permittee has chosen to control the VOC emissions from the fermentation process with a wet scrubber, the distillation process and the DDGS dryers by either one of two (2) thermal oxidizers, and the ethanol loadout operation by an enclosed flare. Therefore, the following conditions apply:
 - (1) The VOC emissions from the fermentation process shall be controlled by a wet scrubber S40.

- (2) The overall control efficiency for the wet scrubber S40 (including the capture efficiency and absorption efficiency) shall be at least 98% or the VOC outlet concentration shall not exceed 20 ppmv.
 - (3) The VOC emissions from the distillation process shall be controlled by either one of two (2) regenerative thermal oxidizers, identified as C-10 and C-11. The VOC emissions from dryers EP-9A and EP-9B shall be controlled by RTO C-10. Dryers EP-9C and EP-9D shall be controlled by RTO C-11.
 - (4) The overall control efficiency (including the capture efficiency and destruction efficiency) of the two (2) thermal oxidizers, identified as C10 and C11, controlling the distillation process and the DDGS dryers shall be at least 98%, or the VOC outlet concentration shall not exceed 10 ppmv.
 - (5) The VOC emissions from the ethanol loading racks shall be controlled by one (1) enclosed smokeless flare, identified as EP-14, when the ethanol loading racks are in operation.
 - (6) The overall control efficiency for the enclosed smokeless flare, identified as EP-14, (including the capture efficiency and destruction efficiency) shall be at least 98%.
- (b) Pursuant to 326 IAC 8-5-6(d), the Permittee shall determine initial compliance with the overall control efficiency requirements within sixty (60) days after achieving maximum production levels but no later than one hundred and eighty (180) days after startup.
- (c) Pursuant to 326 IAC 8-5-6(e), the Permittee shall ensure and verify initial and continuing compliance with the overall control efficiency requirements by doing the following:
- (1) The Permittee shall meet the following requirements for wet scrubber S40:
 - (A) The pressure drop across the scrubber must be within the normal range established during the latest stack test. The pressure drop of the scrubber must be monitored at least once per day when the associated emission unit is in operation to ensure the pressure drop across the scrubber is within the normal range established during the latest stack test.
 - (B) The scrubber flow rate must be greater than the minimum flow rate for the scrubber during normal operation. The scrubber flow rate must be monitored at least once per day when the associated emission unit is in operation to ensure the flow rate of the scrubber is greater than the minimum flow rate established during the latest stack test.
 - (C) Maintain daily records of pressure drop and flow rate for the scrubber during normal operation.
 - (2) The Permittee shall meet the following requirements for the two (2) regenerative thermal oxidizers, identified as C-10 and C-11:
 - (A) The three (3) hour average operating temperature of the oxidizer, as measured by a continuous temperature monitor, must be greater than or equal to the minimum operating temperature established during the most recent compliance demonstration.
 - (B) Maintain continuous temperature records for the thermal oxidizer and the three (3) hour average operating temperature used to demonstrate compliance during the most recent compliant stack test.

- (C) The three (3) hour average duct pressure or fan amperage, as measured by a continuous parameter monitoring system, must be within the normal range established during the most recent compliance demonstration.
 - (D) Maintain a daily record of the duct pressure or fan amperage for the thermal oxidizer.
- (3) The Permittee shall meet the following requirements for the enclosed smokeless flare EP-14:
- (A) Maintain a flare pilot flame when the associated emission unit is in operation and continuously monitor the presence of a flare pilot flame using a thermocouple or any other equivalent device to detect the presence of a flame when the associated emission unit is in operation.
 - (B) Maintain records of temperature or other parameters sufficient to demonstrate the presence of a pilot flame when the loading rack is in operation.

Testing and Compliance Requirements

Testing Requirements

In order to demonstrate compliance with the FESOP and PSD minor limits, 40 CFR 60, Subpart Db, and 326 IAC 8-5-6, as well as to demonstrate the nonapplicability of 326 IAC 8-1-6 for the cooling drum, the Permittee shall perform the following tests within 60 days after achieving the maximum capacity but no later than 180 days after initial startup of the ethanol production plant:

- (a) PM and PM10 test for baghouses S20, S21, S30, S70 and S90.
- (b) VOC and Acetaldehyde tests for the wet scrubber (S40). The wet scrubber (S40) is used to control the emissions from the fermentation operations.
- (c) PM, PM10, VOC, NOx, CO, Acetaldehyde and Acrolein test for the regenerative thermal oxidizer (RTO) system stack (S10). RTO C-10 controls dryers EP-9A and EP-9B. RTO C-11 controls dryers EP-9C and EP-9D. One of two (2) RTOs is required to be in operation to control emissions from the distillation process.
- (d) PM, PM10, VOC and Acetaldehyde for the DDGS cooling drum (S70). VOC testing is required to demonstrate the nonapplicability of 326 IAC 8-1-6 (BACT).
- (e) PM, PM10, NOx, CO and total HAPs emissions for one of the boilers (EP-4a or EP-4b). HAP testing shall be conducted while burning landfill gas.
- (f) VOC emissions from the enclosed smokeless flare (EP-14), which is used to control the emissions from the ethanol loading racks.

These tests shall be repeated at least once every five (5) years from the date of the last valid compliance test.

Compliance Requirements

Permits issued under 326 IAC 2-8 are required to ensure that sources can demonstrate compliance with applicable state and federal rules on a more or less continuous basis. All state and federal rules contain compliance provisions, however, these provisions do not always fulfill the requirement for a more or less continuous demonstration. When this occurs IDEM, OAQ in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-8-4. As a result, compliance

requirements are divided into two sections: Compliance Determination Requirements and Compliance Monitoring Requirements.

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

The compliance monitoring requirements applicable to this source are as follows:

1. The grain receiving and handling operations - south unloading (EU-1A), grain receiving and handling operations - north unloading (EP-1B), milling operations (EP-2), DDGS cooling drum (S70), and the DDGS handling and loadout operation (EP-10).

Visible Emissions Notations

- (a) Visible emission notations of the baghouse stack exhausts (stacks S20, S21, S30, S70 and S90) shall be performed once per day during normal daylight operations. A trained employee or a trained contractor 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 or contractor is a person who has worked or trained at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (e) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C- Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

Parametric Monitoring

- (a) The Permittee shall record the pressure drop across the baghouses used in conjunction with the grain receiving and handling operations - south unloading (EU-1A), grain receiving and handling operations - north unloading (EP-1B), milling operations (EP-2), DDGS cooling drum (S70), and the DDGS handling and loadout operation (EP-10), at least once per day when these units are in operation. When for any one reading, the pressure drop across the baghouse is outside the normal range of 1.0 to 6.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C - Response to Excursions or Exceedances. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

- (b) The 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.
- (c) In the event that bag failure has been observed:
 - (1) 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).
 - (2) 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 line. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

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

These monitoring conditions are necessary because the baghouses controlling the grain receiving and handling operations - south unloading (EU-1A), grain receiving and handling operations - north unloading (EP-1B), milling operations (EP-2), DDGS cooling drum (S70), and the DDGS handling and loadout operation (EP-10) must operate properly to ensure compliance with 326 IAC 2-2 (PSD), 326 IAC 2-8 (FESOP), and 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes).

- 2. The wet scrubber (S40) is used to control the emissions from the fermentation operations. The thermal oxidizer systems (C-10 and C-11) are used to control part of the emissions from the ethanol production plant, identified as EP-5, which consists of the distillation process and the DDGS drying process. These processes have applicable compliance monitoring conditions as specified below:

Visible Emissions Notations

- (a) Visible emission notations of the stack exhaust from the scrubber stack S40 and the thermal oxidizers common stack (S10), shall be performed once per day during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.
- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
- (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

- (e) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C- Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

Parametric Monitoring

- (a) The Permittee shall monitor and record the pressure drop and the flow rate of the wet scrubber S40 at least once per day when the fermentation process is in operation. When for any one reading, the pressure drop across the scrubber is outside the normal range of 2.0 and 8.0 inches of water, or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C - Response to Excursions or Exceedances. When for any one reading, the flow rate of the scrubber is less than the normal minimum of 95 gallons per minute, or a minimum established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C - Response to Excursions or Exceedances. A pressure reading that is outside the above mentioned range or a flow rate that is below the above mentioned minimum is not a deviation from this permit. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.
- (b) The instruments used for determining the pressure drop and flow rate 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.
- (c) In the event that a scrubber malfunction has been observed:

Failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions). Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.
- (d) A continuous monitoring system shall be calibrated, maintained, and operated on the thermal oxidizers (C-10 and C-11) for measuring operating temperature. For the purpose of this condition, continuous means no less than once per fifteen (15) minutes. The output of this system shall be recorded as a 3-hour average. From the date of issuance of this permit until the approved stack test results are available, the Permittee shall operate the thermal oxidizers at or above the 3-hour average temperature of 1,400°F.
- (e) The Permittee shall determine the 3-hour average temperature from the most recent valid stack test that demonstrates compliance with limits in this permit, as approved by IDEM.
- (f) On and after the date the approved stack test results are available, the Permittee shall operate the thermal oxidizers at or above the 3-hour average temperature as observed during the compliant stack test.
- (g) The Permittee shall determine fan amperage or duct pressure from the most recent valid stack test that demonstrates compliance with limits in this permit, as approved by IDEM, OAQ.
- (h) The duct pressure or fan amperage of each regenerative thermal oxidizer shall be observed at least once per day when the thermal oxidizer is in operation. On and

after the date the approved stack test results are available, the duct pressure or fan amperage shall be maintained within the normal range as established in most recent compliant stack test.

These monitoring conditions are necessary because the fermentation process, distillation process and DDGS drying process require the proper operation of wet scrubber S40 and regenerative thermal oxidizers (RTOs) C-10 and C-11. Wet scrubber S40 must operate properly at all times the fermentation process (EP-5A) is in operation. Regenerative thermal oxidizer (RTO) C-10 must operate properly at all times dryers EP-9A and EP-9B are in operation. RTO C-11 must operate properly at all times dryers EP-9C and EP-9D are in operation. Either one of two RTOs must operate properly at all times the distillation process (EP-5B) is in operation. Proper operation of wet scrubber S40 and RTOs C-10 and C-11 ensures compliance with 326 IAC 2-2 (PSD), 326 IAC 2-8-4 (FESOP), 326 IAC 8-5-6 (Fuel Grade Ethanol Production at Dry Mills), and 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes).

3. The ethanol loading rack (EP-8), which is controlled by smokeless enclosed flare EP-14 has applicable compliance monitoring conditions as specified below:
 - (a) The presence of a flare flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame.
 - (b) These monitoring conditions are necessary because flare EP-14 must operate properly at all times that the ethanol loading rack (EP-8) is in operation to ensure compliance with 326 IAC 2-2 (PSD), 326 IAC 2-8-4 (FESOP), and 326 IAC 8-5-6 (Fuel Grade Ethanol Production at Dry Mills).

Conclusion and Recommendation

The construction and operation of this ethanol production facility shall be subject to the conditions of FESOP No. F099-24648-00103. The staff recommends to the Commissioner that this FESOP be approved.

**Appendix A: Emission Calculations
Estimated PTE Summary - Before Controls**

**Company Name: Indiana Renewable Fuels, LLC
Address: Section 18, Township 32 North, Range 3 West, Argos, Indiana
FESOP: F099-24648-00103
Reviewer: David J. Matousek
Date: January 22, 2008**

1. Potential To Emit Before Control

Emission Units	PM (tons/yr)	PM10 (tons/yr)	SO₂ (tons/yr)	*NO_x (tons/yr)	VOC (tons/yr)	CO (tons/yr)	Total HAPs (tons/yr)
Grain Receiving and Handling	616.00	616.00	-	-	-	-	-
Fermentation	54.00	27.00	-	-	2,420.00	-	368.00
Distillation, Dryers and RTO System	15.70	15.70	88.80	39.42	274.80	39.26	152.31
Boilers (Natural Gas/Landfill Gas)	16.06	16.06	0.76	57.16	7.62	50.81	7.83
DDGS Cooler	469.00	469.00	-	-	14.53	-	1.13
DDGS Handling and Loadout	103.00	103.00	-	-	-	-	-
Wet Cake Storage*	-	-	-	-	See Note	-	See Note
Ethanol Loadout and Flare	-	-	-	3.73	234.80	20.14	92.68
Cooling Tower	10.95	10.95	-	-	-	-	-
Diesel Fire Pump	0.07	0.07	0.04	1.30	0.19	0.44	0.48
Storage Tanks**	-	-	-	-	2.93	-	0.09
Biomethanator Flare	-	-	-	1.95	1.46	10.41	-
Other Insignificant Activities	-	-	-	-	0.65	-	-
Total PTE (tons/yr)	1,284.78	1,257.78	89.60	103.56	2,956.98	121.06	622.52

Note:

* This plant is capable of producing both DDGS and WDGS. Emissions from DDGS production is the worst case scenario. Therefore, the PTE of wet cake storage is not included in the PTE for the entire source.

** Emissions from the storage tanks were calculated by the Permittee using EPA TANKS software (version 4.09d) and have been verified by IDEM.

**Appendix A: Emission Calculations
Limited PTE Summary - After Controls**

**Company Name: Indiana Renewable Fuels, LLC
Address: Section 18, Township 32 North, Range 3 West, Argos, Indiana
FESOP: F099-24648-00103
Reviewer: David J. Matousek
Date: January 22, 2008**

1. Limited Potential To Emit After Control

Emission Units	PM (tons/yr)	PM10 (tons/yr)	SO₂ (tons/yr)	*NO_x (tons/yr)	VOC (tons/yr)	CO (tons/yr)	Total HAPs (tons/yr)
Grain Receiving and Handling	12.31	12.31	-	-	-	-	-
Fermentation	1.08	0.54	-	-	48.40	-	7.36
Distillation, Dryers and RTO System	15.70	15.70	88.80	39.42	13.74	39.26	6.16
Boilers (Natural Gas/Landfill Gas)	16.06	16.06	0.76	57.16	7.62	50.81	7.83
DDGS Cooler	9.37	9.37	-	-	14.53	-	1.13
DDGS Handling and Loadout	2.06	2.06	-	-	-	-	-
Wet Cake Storage*	-	-	-	-	See Note	-	See Note
Ethanol Loadout and Flare	-	-	-	1.18	5.51	6.23	1.86
Cooling Tower	10.95	10.95	-	-	-	-	-
Diesel Fire Pump	0.01	0.01	0.00	0.13	0.02	0.04	0.05
Storage Tanks**	-	-	-	-	2.93	-	0.09
Biomethanator Flare	-	-	-	0.48	0.33	2.41	-
Other Insignificant Activities	-	-	-	-	0.65	-	-
Total PTE (tons/yr)	67.54	67.00	89.56	98.37	93.73	98.75	24.48

Note:

* This plant is capable of producing both DDGS and WDGS. Emissions from DDGS production is the worst case scenario. Therefore, the PTE of wet cake storage is not included in the PTE for the entire source.

** Emissions from the storage tanks were calculated by the Permittee using EPA TANKS software (version 4.09d) and have been verified by IDEM.

**Appendix A: Emission Calculations
PM and PM10 Emissions
From Grain Receiving and Handling Operations**

**Company Name: Indiana Renewable Fuels, LLC
Address: Section 18, Township 32 North, Range 3 West, Argos, Indiana
FESOP: F099-24648-00103
Reviewer: David J. Matousek
Date: January 22, 2008**

1. Potential to Emit PM/PM10 - Captured Emissions:

Baghouse ID	Process Description	Control Device	Outlet Grain Loading (gr/dscf)	Maximum Air Flow Rate (scfm)	PTE of PM/PM10 after Control (lbs/hr)	PTE of PM/PM10 after Control (tons/yr)	Control Efficiency (%)	PTE of PM/PM10 before Control (tons/yr)
S20	Grain Receiving and Handling South Unloading	Baghouse	0.005	36,900	1.58	3.46	98%	173
S21	Grain Receiving and Handling North Unloading	Baghouse	0.005	38,200	1.64	3.59	98%	180
S30	Milling Operation	Baghouse	0.005	28,000	1.20	5.26	98%	263
Total						12.31		616

Assume all PM emissions equal PM10 emissions.

Methodology

$\text{PTE of PM/PM10 after Control (lbs/hr)} = \text{Grain Loading (gr/dscf)} \times \text{Max. Air Flow Rate (scfm)} \times 60 \text{ mins/hr} \times 1/7000 \text{ lb/gr}$

$\text{PTE of PM/PM10 after Control (tons/yr)} = \text{Grain Loading (gr/dscf)} \times \text{Max. Air Flow Rate (scfm)} \times 60 \text{ mins/hr} \times 1/7000 \text{ lb/gr} \times 8760 \text{ hr/yr} \times 1 \text{ ton}/2000 \text{ lbs}$

$\text{PTE of PM/PM10 before Control (tons/yr)} = \text{PTE of PM/PM10 after Control (tons/yr)} / (1 - \text{Control Efficiency})$

Notes

- 1) Assumes the ethanol plant will receive and store grain in their grain storage silos.
- 2) Assumes storage vents are included with the headhouse/internal handling emissions.
- 3) Grain unloading baghouses S20 and S21 will operate approximately 4,380 hours per year each.
- 4) The north unloading pit is used for truck unloading only.
- 5) The south unloading pit is used for truck and rail unloading operations.

**Appendix A: Emission Calculations
VOC and HAP Emissions
From the Fermentation Process**

**Company Name: Indiana Renewable Fuels, LLC
Address: Section 18, Township 32 North, Range 3 West, Argos, Indiana
FESOP: F099-24648-00103
Reviewer: David J. Matousek
Date: January 22, 2008**

1. Process Description:

Max. Throughput Rate: 121 MMgal/yr of ethanol

Control Equipment: Wet Scrubber S40

Efficiency = 98%

2. Potential to Emit (PTE) of VOC and HAP:

Pollutant	*Emission Rate after Control (lbs/MMgal)	PTE after Control (tons/yr)	PTE before Control (tons/yr)
VOC	800.00	48.40	2,420.00
PM Stack Test	9.00	0.54	27.00
PM10 - Stack Test	9.00	0.54	27.00
PM for Source Summary	Sum of PM / PM10	1.08	54.00
HAP	---	---	---
Acetaldehyde	100	6.05	302.50
Acrolein	1.7	0.10	5.00
Methanol	19.85	1.20	60.00
Formaldehyde	0.22	0.01	0.50
Total HAPs		7.36	368.00

* Emission factors provided by the source based on stack test results from similar facilities, scaled linearly based on production capacity.
The Permittee will perform stack testing to demonstrate compliance with the above emission rates.

Methodology

PTE after Control (tons/yr) = Emission Rate after Control (lbs/MMgal) x 110 MMgal/yr x 1 ton/2000 lbs

PTE before Control (tons/yr) = PTE after Control (tons/yr) / (1-control efficiency)

PM for source summary is the sum of PM and PM10 to be conservative on the particulate emissions from the stack test.

Appendix A: Emission Calculations
Criteria Pollutants
From Four (4) 40 MMBtu/hr DDGS Dryers and Two (2) 10 MMBtu/hr RTO Systems

Company Name: Indiana Renewable Fuels, LLC
Address: Section 18, Township 32 North, Range 3 West, Argos, Indiana
FESOP: F099-24648-00103
Reviewer: David J. Matousek
Date: January 22, 2008

1. Thermal Oxidizers, Combustion Emissions

Heat Input Capacity
MMBtu/hr
20 (2 units combined)

	Pollutant	
	NOx	SO2
Emission Factor in lbs/MMBtu	0.050	0.0006
PTE (tons/yr)	4.38	0.05

Emission factors are from AP-42, Chapter 1.4, Tables 1.4-1 and 1.4-2 (AP-42, 03/98).

Methodology

PTE (tons/yr) = Heat Input Capacity (MMBtu/hr) x Emission Factor (lbs/MMBtu) x 8,760 (hr/yr) x 1 ton/2000 lbs.

2. Dryers, Combustion Emissions

Heat Input Capacity
MMBtu/hr
160 (4 units combined)

	Pollutant	
	NOx	SO2
Emission Factor in lbs/MMBtu	0.050	0.0006
PTE (tons/yr)	35.04	0.42

NOx emission factor from manufacturer, SO2 emission factor from AP-42, Chapter 1.4, Table 1.4-3 (AP-42, 03/98).

Methodology

PTE (tons/yr) = Heat Input Capacity (MMBtu/hr) x Emission Factor (lbs/MMBtu) x 8,760 (hr/yr) x 1 ton/2000 lbs.

3. Dryers, Process Emissions

DDGS Throughput Limit
(tons/yr)
392,568

	Pollutant			
	CO	VOC	PM/PM-10	SO2
Emission Rate (lbs/ton) *	0.200	0.070	0.080	0.45
Limited PTE (tons/yr)	39.26	13.74	15.70	88.33

* Emission rates were estimated by the source based on stack testing results from similar facilities.

Methodology

Limited PTE (tons/yr) = Emission Rate (lbs/ton) x DDGS Throughput Limit (tons/yr) x 1 ton/2000 lbs.

4. Total Emissions from RTO Stack

	Pollutant				
	NOx	SO2	CO	VOC	PM/PM-10
Thermal Oxidizers - Combustion Emissions	4.38	0.05	See 5 Below	See 5 Below	See 5 Below
Dryers - Combustion Emissions	35.04	0.42	See 5 Below	See 5 Below	See 5 Below
Dryers - Process Emissions		88.33	39.26	13.74	15.70
Total Potential to Emit (tons/yr)	39.42	88.80	39.26	13.74	15.70

Estimated VOC PTE Prior RTO (tons/yr) = VOC stack PTE / (1 - control efficiency) = 274.80

Methodology

- 1) The efficiency of the thermal oxidizer is 95%. The potential to emit prior to control = PTE after control / (1-efficiency).
- 2) Total Potential to Emit (tons/yr) = (Thermal Oxidizers, Combustion Emissions) + (Dryers, Combustion Emissions) + (Dryers, Process Emissions).
- 3) The Permittee will perform stack tests to verify the emissions from the RTO stack.
- 4) The emission factor for SO2 due to combustion is from AP-42.
- 5) The emission factor used for DDGS process emissions includes CO, VOC and PM/PM10 emissions due to combustion in the RTO and dryers.

Appendix A: Emission Calculations
Process HAP Emissions
From Four (4) 40 MMBtu/hr DDGS Dryers and Two (2) 10 MMBtu/hr RTO Systems

Company Name: Indiana Renewable Fuels, LLC
Address: Section 18, Township 32 North, Range 3 West, Argos, Indiana
FESOP: F099-24648-00103
Reviewer: David J. Matousek
Date: January 22, 2008

DDGS Throughput Limit
(tons/yr)

392,568

	Pollutant				Total
	Acetaldehyde	Acrolein	Formaldehyde	Methanol	
Emission Rate before Control (lb/ton) *	0.280	0.066	0.310	0.110	
PTE after Control in tons/yr	1.65	0.39	1.83	0.65	4.52
PTE before Control in tons/yr	55.00	13.00	61.00	21.67	150.67

* HAP emission rates were estimated by the source based on stack testing results from similar facilities.

The Permittee will perform stack tests to verify the HAP emissions from these units. HAP control efficiency assumed to be 97%.

Methodology

PTE after Control (tons/yr) = Emission Rate before Control (lb/ton) x DDGS Throughput Limit (tons/yr) x 1 ton/2000 lbs x (1 - 97% control efficiency).

PTE before Control (tons/yr) = Emission Rate after Control (tons/yr) x (1/(1 - 97% control efficiency)).

**Appendix A: Emission Calculations
HAP Emissions from Natural Gas Combustion
From Four (4) 40 MMBtu/hr DDGS Dryers, Two (2) 10 MMBtu/hr RTO Systems, Biomethanator Flare and Ethanol Loadout Flare**

**Company Name: Indiana Renewable Fuels, LLC
Address: Section 18, Township 32 North, Range 3 West, Argos, Indiana
FESOP: F099-24648-00103
Reviewer: David J. Matousek
Date: January 22, 2008**

Heat Input Capacity
MMBtu/hr

Potential Throughput
MMCF/yr

198.8 (All units combined)

1741.5

Emission Factor in lbs/MMCF	Pollutant					Total HAPs
	Hexane	Formaldehyde	Toluene	Benzene	Nickel	
	1.8E+00	7.5E-02	3.4E-03	2.1E-03	2.1E-03	
Potential to Emit in tons/yr	1.57	0.07	2.96E-03	1.83E-03	1.83E-03	1.64

Emission factors are from AP-42, Chapter 1.4, Table 1.4-3 (AP-42, 03/98).

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Methodology

Potential Throughput (MMCF/yr) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu.

Potential to Emit (tons/yr) = Potential Throughput (MMCF/yr) x Emission Factor (lbs/MMCF) x 1 ton/2000 lbs.

Normally HAP emissions are considered negligible for natural gas flares. They were added at the request of the Permittee.

Appendix A: Emission Calculations

Two (2) Natural Gas/Landfill Gas Process Boilers Rated at 145 MMBtu/hr Each

Company Name: Indiana Renewable Fuels, LLC
 Address: Section 18, Township 32 North, Range 3 West, Argos, Indiana
 FESOP: F099-24648-00103
 Reviewer: David J. Matousek
 Date: January 22, 2008

1. Process Boilers, Emissions in Ton/Year

Heat Input Capacity
 MMBtu/hr
 290 (2 units combined)

Emission Factor in lbs/MMBtu	Pollutant					
	NOx ^a	SO ₂ ^b	CO ^a	VOC ^b	PM ^c	PM10 ^c
	0.05	0.0006	0.0400	0.0060	0.0126	0.0126
PTE (tons/yr)	57.16	0.76	50.81	7.62	16.06	16.06

Landfill Gas Parameters (100% Usage)

Heat Input Capacity 290 MMBtu/hr
 Heat Content 510 Btu/CF
 Hours of Operation 8,760 Hours
 Gas Usage 4,981 MMCF/yr 2,989 MMCF/yr at 60% firing.

Natural Gas Parameters (100% Usage)

Heat Input Capacity 290 MMBtu/hr
 Heat Content 1,000 Btu/CF
 Hours of Operation 8,760 Hours
 Gas Usage 2,540 MMCF/yr

2. Process Boilers, PM/PM10 NG Emissions in LB/MMCF

PM/PM10 Based on 100% Natural Gas

lb PM/PM10 per year = Emission Factor (lb/MMCF) x Heat Input Capacity (MMBtu/hr) x 8,760 hr/yr
 = 0.0076 lb/MMBtu x 290 MMBtu/hr x 8,760 hr/yr
 = 19,307 lb PM/PM10 /yr

lb PM/PM10 per MMCF = lb PM/PM10 / yr ÷ MMCF/yr
 = 19,307 lb PM/PM10 /yr ÷ 2,540 MMCF/yr = 7.60 lb/MMCF

3. Process Boilers, PM/PM10 LFG Emissions in LB/MMCF

PM/PM10 Based on 100% Landfill Gas

lb PM/PM10 per year = Emission Factor (lb/MMCF) x Heat Input Capacity (MMBtu/hr) x 8,760 hr/yr
 = 0.016 lb/MMBtu x 290 MMBtu/hr x 8,760 hr/yr
 = 40,646 lb PM/PM10 /yr

lb PM/PM10 per MMCF = lb PM/PM10 / yr ÷ MMCF/yr
 = 40,646 lb PM/PM10 /yr ÷ 4,981 MMCF/yr = 8.16 lb/MMCF

4. Process Boilers, LFG Emissions Other Pollutants in LB/MMCF

Emissions Based on 100% LFG

	TPY	LB/YR	MMCF/yr	LB/MMCF
NOx	57.16	114,320	4,981	22.95
SO2	0.76	1,520	4,981	0.31
CO	50.81	101,620	4,981	20.40
VOC	7.62	15,240	4,981	3.06

Methodology

^a The NOx and CO emission factors were provided by the applicant and are part of a performance guarantee by the manufacturer.

^b The emission factors for SO2 and VOC are from AP-42, Chapter 1.4, Tables 1.4-2.

^c The PM/PM10 emission factor was adjusted to reflect 60% usage of landfill gas and 40% usage of natural gas.

PM/PM10 (Landfill Gas) Emission Factor = 0.016 lbs/MMBtu

PM/PM10 (Natural Gas) Emission Factor = 0.0076 lbs/MMBtu

PM/PM10 Emission Factor = (0.4) x PM/PM10 (Natural Gas) Emission Factor + (0.6) x PM/PM10 (Landfill Gas) Emission Factor

PTE (tons/yr) = Heat Input Capacity (MMBtu/hr) x Emission Factor (lbs/MMBtu) x 8,760 (hr/yr) x 1 ton/2000 lbs.

Gas Usage (MMCF/yr) = Heat Input Capacity (MMBtu/hr) x Hours of Operation (hr/yr) x (1 MMCF/1 MMBtu) / Heat Content (BTU/CF)

Landfill gas is limited to a maximum of 60% of the total MMBtu required to run the boilers for 8,760 hours/yr.

Appendix A: Emission Calculations
HAPs for Two (2) Natural Gas/Landfill Gas Process Boilers Rated at 145 MMBtu/hr Each

Company Name: Indiana Renewable Fuels, LLC
Address: Section 18, Township 32 North, Range 3 West, Argos, Indiana
FESOP: F099-24648-00103
Reviewer: David J. Matousek
Date: January 22, 2008

1. Process Boilers, HAPs for Landfill Gas Combustion (60% Usage of Landfill Gas)

Landfill Gas Parameters

Heat Input Capacity	290 MMBtu/hr
Heat Content	510 Btu/CF
Hours of Operation	5256 Hours
Gas Usage	2989 MMCF/yr
HAP Emission Rate	4.6 lb/MMCF

HAP Emissions - Landfill Gas Usage			
Organic Compound	Emission Factor (lb/MM FT ³)	PTE Emission (lb/yr)	PTE Emission (TPY)
Methyl chloroform	0.0034	10.16	0.0051
1,1,2,2-Tetrachloroethane	0.0098	29.29	0.0146
Ethylidene dichloride	0.0123	36.76	0.0184
Vinylidene chloride	0.0010	2.99	0.0015
Ethyene dichloride	0.0021	6.28	0.0031
Propylene dichloride	0.0011	3.29	0.0016
Acrylonitrile	0.0177	52.91	0.0265
Carbon disulfide	0.0067	20.03	0.0100
Carbonyl sulfide	0.0016	4.78	0.0024
Chlorobenzene	0.0015	4.48	0.0022
Ethyl chloride	0.0042	12.55	0.0063
Chloroform	0.0002	0.60	0.0003
Dichloromethane	0.0640	191.30	0.0957
Ethylbenzene	0.0369	110.29	0.0551
Hexane	0.0298	89.07	0.0445
Methyl isobutyl ketone	0.0304	90.87	0.0454
Perchloroethylene	0.0326	97.44	0.0487
Trichloroethylene	0.0195	58.29	0.0291
Vinyl Chloride	0.0242	72.33	0.0362
Benzene	0.0079	23.61	0.0118
Methyl chloride	0.0032	9.56	0.0048
Toluene	0.1907	570.00	0.2850
Xylene	0.1034	309.06	0.1545
1,4 Dichlorobenzene	0.0041	12.25	0.0061
Styrene	0.0092	27.50	0.0138
Hydrogen Chloride	3.9826	11,903.99	5.9520
Total		13,749.68	6.87

2. Process Boilers, HAPs for Natural Gas Combustion (40% Usage of Natural Gas)

Natural Gas Parameters

Heat Input Capacity	290 MMBtu/hr
Heat Content	1000 Btu/CF
Hours of Operation	3504 Hours
Gas Usage	1016 MMCF/yr
HAP Emission Rate	1.88 lb/MMCF

HAP Emissions - Natural Gas Usage			
Organic Compound	Emission Factor (lb/MM FT ³)	PTE Emission (lb/yr)	PTE Emission (TPY)
Hexane	1.80E+00	1,828.8000	0.9144
Formaldehyde	7.50E-02	76.2000	0.0381
Toluene	3.40E-03	3.4500	0.0017
Benzene	2.10E-03	2.1300	0.0011
Nickel	2.10E-03	2.1300	0.0011
Total		1,912.71	0.96

Methodology

- 1) PTE (tons/yr) = Heat Input Capacity (MMBtu/hr) x Emission Factor (lbs/MMBtu) x 8,760 (hr/yr) x 1 ton/2000 lbs.
- 2) The NO_x and CO emission factors were provided by the applicant and are part of a performance guarantee by the manufacturer.
- 3) Gas Usage (MMCF/yr) = Heat Input Capacity (MMBtu/hr) x Hours of Operation (hr/yr) x (1 MMCF/1 MMBtu) / Heat Content (BTU/CF)
- 4) HAP PTE Emission (lb/yr) = Estimated Gas Usage (MMCF/yr) x (Emission Factor (lb/MMCF))
- 5) HAP PTE Emission (ton/year) = HAP PTE Emission (lb/yr) / (2,000 lb/ton)
- 6) Gas usage for 60% firing of landfill gas is estimated at 60% of annual hours of operation.
- 7) HAP emission rate = (lb HAP/yr) / (MMCF/yr)
- 8) The HAP emission rate is higher for natural gas but less gas is required to meet the heat input requirements.
- 9) The HAP emission factors are from a combination of AP-42, Table 2-4.1 and from a grab sample from County Line Landfill.
- 10) Emission factors are based on the worst-case between AP-42 and the County Line Landfill sample. Where the worst-case data was based on County Line Landfill data, 20% was added to the measured concentration to be conservative. County Line data was worst case for carbon disulfide, ethylbenzene, methyl ethyl ketone, methyl isobutyl ketone and xylene.
- 11) Styrene and 1,4-dichlorobenzene are not listed in AP-42 but were detected in the County Line Landfill sample. These constituents were added at the concentration detected plus 20%.

**Appendix A: Emission Calculations
PM/PM10 and VOC Emissions
From the DDGS Cooling Drum**

**Company Name: Indiana Renewable Fuels, LLC
Address: Section 18, Township 32 North, Range 3 West, Argos, Indiana
FESOP: F099-24648-00103
Reviewer: David J. Matousek
Date: January 22, 2008**

1. Potential to Emit PM/PM10

Baghouse ID	Process Description	Control Device	Outlet Grain Loading (gr/dscf)	Maximum Air Flow Rate (scfm)	PTE of PM/PM10 after Control (lbs/hr)	PTE of PM/PM10 after Control (tons/yr)	Control Efficiency (%)	PTE of PM/PM10 before Control (tons/yr)
S70	DDGS Cooing Drum	Baghouse	0.005	50,000	2.14	9.37	98%	469
Total						9.37		469

Assume all PM emissions equal PM10 emissions.

Methodology

PTE of PM/PM10 after Control (lbs/hr) = Grain Loading (gr/dscf) x Max. Air Flow Rate (scfm) x 60 mins/hr x 1/7000 lb/gr .

PTE of PM/PM10 after Control (tons/yr) = Grain Loading (gr/dscf) x Max. Air Flow Rate (scfm) x 60 mins/hr x 1/7000 lb/gr x 8760 hr/yr x 1 ton/2000 lbs.

PTE of PM/PM10 before Control (tons/yr) = PTE of PM/PM10 after Control (tons/yr) / (1-Control Efficiency).

2. Potential to Emit VOC:

Annual DDGS Production Limit: 392,568 tons/yr

VOC Emission Factor: 0.074 lbs/ton of DDGS (provided by the source based on stack test results from similar facility).

PTE of VOC (tons/yr) = 392,568 tons/yr x 0.074 lbs/ton x 1 ton/2000 lbs =

14.53 tons/yr

3. Potential to Emit HAPs:

Emission Rate (lbs/ton DDGS) *	Pollutant				
	Acetaldehyde	Acrolein	Formaldehyde	Methanol	Total
	3.00E-03	1.00E-03	1.00E-03	7.00E-04	0.26
Limited PTE in tons/yr	0.59	0.20	0.20	0.14	1.13

* HAP emission rates were estimated by the source based on stack testing results from a similar engineered site (Glacial Lakes Energy, MN) and scaled linearly based on production capacity. The Permittee will perform stack tests to verify the HAP emissions from these units.

Methodology

Limited PTE (tons/yr) = Emission Rate (lbs/ton DDGS) x DDGS production limit (tons/yr) x 1 ton/2000 lbs.

**Appendix A: Emission Calculations
PM and PM10 Emissions
From DDGS Handling and Loadout Operations**

**Company Name: Indiana Renewable Fuels, LLC
Address: Section 18, Township 32 North, Range 3 West, Argos, Indiana
FESOP: F099-24648-00103
Reviewer: David J. Matousek
Date: January 22, 2008**

1. Potential to Emit PM/PM10 - Captured Emissions:

Baghouse ID	Process Description	Control Device	Outlet Grain Loading (gr/dscf)	Maximum Air Flow Rate (scfm)	PTE of PM/PM10 after Control (lbs/hr)	PTE of PM/PM10 after Control (tons/yr)	Control Efficiency (%)	PTE of PM/PM10 before Control (tons/yr)
S90	DDGS Handling and Loadout	Baghouse	0.005	11,000	0.47	2.06	98%	103
Total						2.06		103

Assume all PM emissions equal PM10 emissions.

Methodology

PTE of PM/PM10 after Control (lbs/hr) = Grain Loading (gr/dscf) x Max. Air Flow Rate (scfm) x 60 mins/hr x 1/7000 lb/gr.

PTE of PM/PM10 after Control (tons/yr) = Grain Loading (gr/dscf) x Max. Air Flow Rate (scfm) x 60 mins/hr x 1/7000 lb/gr x 8760 hr/yr x 1 ton/2000 lbs.

PTE of PM/PM10 before Control (tons/yr) = PTE of PM/PM10 after Control (tons/yr) / (1-Control Efficiency).

**Appendix A: Emission Calculations
VOC and HAP Emissions from Ethanol Loading Racks**

**Company Name: Indiana Renewable Fuels, LLC
Address: Section 18, Township 32 North, Range 3 West, Argos, Indiana
FESOP: F099-24648-00103
Reviewer: David J. Matousek
Date: January 22, 2008**

1. Emission Factors: AP-42

Denatured ethanol will be shipped by either truck railcar loading via the ethanol loading rack. Railcars will be dedicated fleets, but the trucks may be used to carry gasoline prior to filling with ethanol. Both railcars and trucks will be filled by submerged loading process. The ethanol loading rack will be controlled by flare EP-14.

According to AP-42, Chapter 5.2 - Transportation and Marketing of Petroleum Liquids (01/95), the VOC emission factors for the truck and rail loading racks can be estimated from the following equation:

$$L = 12.46 \times (SPM)/T$$

where:

- L = loading loss (lbs/kgal)
- S = a saturation factor (see AP-42, Table 5.2-1)
- P = true vapor pressure of the liquid loaded (psia)
- M = molecular weight of vapors
- T = temperature of the bulk liquid loaded (degree R)

Previous Stored Liquid	*S	P (psia)	M (lbs/mole lbs)	T (degree R)	L (lbs/kgal)
Gasoline (normal)	1.0	4.3895	66	511	7.06
Gasoline (clean cargo)	0.5	4.3895	66	511	3.53
Denatured Ethanol (normal)	0.6	0.50	49.7	511	0.36
Denatured Ethanol (clean cargo)	0.5	0.50	49.7	511	0.30

Therefore, the emission factor for loading denatured ethanol to the trucks which stored gasoline previously
 $= L(\text{gasoline, normal}) - L(\text{gasoline, clean cargo}) + L(\text{denatured ethanol, clean cargo}) = 3.83 \text{ (lbs/kgal)}$

2. Potential to Emit VOC Before Control:

(1) Limited ethanol loaded out via truck: Loading rate for trucks:	121.00 MMgal/yr	$\frac{1000 \text{ kgal/MMgal} \times 3.83 \text{ (lbs/kgal)}}{2000 \text{ lbs / 1 ton}}$	=	231.98 tons/yr
(2) Remaining ethanol loaded out via rail: Loading rate for rail:	0.00 MMgal/yr	$\frac{1000 \text{ kgal/MMgal} \times 0.36 \text{ (lbs/kgal)}}{2000 \text{ lbs / 1 ton}}$	=	0.00 tons/yr
Limited Potential to Emit =				231.98 tons/yr

3. Limited Potential to Emit:

Annual Rail Loadout:	0 kgal/yr (total)			
Annual Truck Loadout:	121,000 kgal/yr (total)			
Flare Control Efficiency:	98%			
(1) Ethanol loaded out via truck (controlled by flare):	$121,000 \text{ kgal/yr (total)} \times (1 - \text{efficiency}) \times 1 \text{ ton} / 2000 \text{ lb}$	3.83 (lbs/kgal)	=	4.64 tons/yr
(2) Denatured ethanol is loaded to railcars (controlled by flare):	$0 \text{ kgal/yr (total)} \times (1 - \text{efficiency}) \times 1 \text{ ton} / 2000 \text{ lb}$	0.36 (lbs/kgal)	=	0.00 tons/yr
Limited Potential to Emit =				4.64 tons/yr

4. Potential to Emit HAPs:

HAP emissions are mainly from the unloading process for trucks, which may have been used to ship gasoline previously.

HAP	HAP Fraction*	PTE of HAP before Control (tons/yr)	Limited PTE of HAP after Control (tons/yr)
Benzene	2.45E-02	5.68	0.11
Ethyl benzene	2.00E-02	4.64	0.09
Cumene	1.00E-02	2.32	0.05
Xylenes	1.20E-01	27.84	0.56
Toluene	1.50E-01	34.80	0.70
MTBE	7.50E-02	17.40	0.35
Total		92.68	1.86

* This is the HAP fraction for gasoline vapors.

Methodology

PTE of HAP before Control (tons/yr) = PTE of VOC before Control (tons/yr) x HAP %.
 Limited PTE of HAP after Control (tons/yr) = Limited PTE of VOC by Trucks (tons/yr) x HAP %.
 The maximum PTE is achieved at 100% loadout by truck. The minimum PTE is achieved by 100% loadout by rail.

**Appendix A: Emission Calculations
Combustion Emissions
From Flare EP-14 for Ethanol Loading Rack**

**Company Name: Indiana Renewable Fuels, LLC
Address: Section 18, Township 32 North, Range 3 West, Argos, Indiana
FESOP: F099-24648-00103
Reviewer: David J. Matousek
Date: January 22, 2008**

Max. Heat Input
MMBtu/hr

12.40	Flare
0.10	Pilot

Limited Hours
of Operation (hr/yr)

2,700	Flare
8,760	Pilot

Estimated Gas Usage
Based on Hours (MMCF/yr)

33.5	Flare
0.9	Pilot
34.4	Total

Pilot Emissions

Emission Factor in lb/MMBtu ^a	Pollutant		
	NOx	CO	VOC
0.1000	0.0840	0.0055	
Unlimited PTE (tons/yr)	0.04	0.04	0.00
Limited PTE (tons/yr)	0.04	0.04	0.00

Flare Emissions

Emission Factor in lb/MMBtu ^c	Pollutant		
	NOx	CO	VOC
0.068	0.37	0.052	
Unlimited PTE (tons/yr)	3.69	20.10	2.82
Limited PTE (tons/yr)	1.14	6.19	0.87

Total Unlimited PTE (tons/yr)	3.73	20.14	2.82
Total Limited PTE (tons/yr)	1.18	6.23	0.87
Estimated Loading (lb/MMCF)	68.68	362.63	50.64

^a Emission factors are from AP-42, Tables 13.5-1 and 13.5-2 (AP-42, 01/95).

^b The Permittee stated that PM/PM10 emissions from this flare are negligible due to the smokeless design. The PTE of SO₂ is negligible due to negligible sulfur presence in the gas stream.

^c Emission factors are from AP-42, Tables 1.4-1 and 1.4-2.

Methodology

Fuel Usage = [Heat Input (MMBtu/hr) x Operating Hours (hr/yr) x 1,000,000 Btu/MMBtu x 1 CF/1000 Btu x MMCF/1,000,000 CF]

Estimated Loading = [Limited PTE (tpy) x 2000 lb/ton] / Total Fuel Used (MMCF/yr)

Unlimited PTE (tons/yr) = Max. Heat Input (MMBtu/hr) x Emission Factor (lbs/MMBtu) x 8760 hrs/yr x 1 ton/2000 lbs.

Limited PTE (tons/yr) = Max. Heat Input (MMBtu/hr) x Emission Factor (lbs/MMBtu) x Limited Hours of operation (hrs/yr) x 1 ton/2000 lbs.

**Appendix A: Emission Calculations
PM/PM10 Emissions
From the Cooling Tower**

**Company Name: Indiana Renewable Fuels, LLC
Address: Section 18, Township 32 North, Range 3 West, Argos, Indiana
FESOP: F099-24648-00103
Reviewer: David J. Matousek
Date: January 22, 2008**

1. Process Description:

Type of Cooling Tower:	Induced Draft	
Circulation Flow Rate:	50,000	gal/min
Total Drift:	0.005%	of the circulating flow
Total Dissolved Solids:	2,000	ppm
Density:	8.345	lbs/gal

2. Potential to Emit PM/PM10:

Assume all the dissolved solids become PM10 emissions and assume PM emissions are equal to PM10 emissions.

PTE of PM/PM10 (lbs/hr) = $50,000 \text{ gal/min} \times 60 \text{ min/hr} \times 0.005\% \times 8.345 \text{ lbs/gal} \times 2,000 \text{ ppm} \times 1/1,000,000 \text{ ppm} =$ **2.50 lbs/hr**

PTE of PM/PM10 (tons/yr) = $3.13 \text{ lbs/hr} \times 8760 \text{ hr/yr} \times 1 \text{ ton}/2000 \text{ lbs} =$ **10.95 tons/yr**

**Appendix A: Emission Calculations
Combustion Emissions
300 HP Emergency Fire Pump**

**Company Name: Indiana Renewable Fuels, LLC
Address: Section 18, Township 32 North, Range 3 West, Argos, Indiana
FESOP: F099-24648-00103
Reviewer: David J. Matousek
Date: January 22, 2008**

1. Emission Factors: AP-42, Table 3.3-1 (10/1996)

SOx 0.00205 lb/hp-hr or 5.13 E-04 lb/hp-hr (Assuming a 75% reduction for low sulfur diesel)
TOC 0.00251 lb/hp-hr

2. Emission Factors: 40 CFR Part 60, Subpart IIII, Table 4 - Emission Standards for Stationary Fire Pump Engines Model Year 2008 and Earlier, 300 ≤ HP < 600

NOx 10.50 g/kW-hr or 0.0173 lb/hp-hr
CO 3.50 g/kW-hr or 0.0058 lb/hp-hr
PM / PM2.5 / TSP 0.54 g/kW-hr or 0.0009 lb/hp-hr

3. Potential Emissions Calculations - Criteria Pollutants

Rated Capacity	300 hp
Proposed Hours of Operation	50 hours

Unlimited Work Potential = 500.00 hr/yr x 300 hp = 150,000 hp-hr/yr
Limited Work Potential = 50.00 hr/yr x 300 hp = 15,000 hp-hr/yr

Fire Pump Emissions	NOx (TPY)	CO (TPY)	SOx (TPY)	PM/PM10 (TPY)	VOC (TPY)
Unlimited PTE	1.30	0.44	0.04	0.07	0.19
Limited PTE	0.13	0.04	0.00	0.01	0.02

4. Potential Emissions Calculation - HAPs, AP-42, Table 3.3-2 (10/1996)

Pollutant	Emission Factor	Unlimited Emissions	Limited Emissions
Benzene	9.33E-04	0.07	0.01
Toluene	4.09E-04	0.03	0.00
Xylenes	2.85E-04	0.02	0.00
Propylene	2.58E-03	0.19	0.02
1,3-Butadiene	3.91E-05	0.00	0.00
Formaldehyde	1.18E-03	0.09	0.01
Acetaldehyde	7.67E-04	0.06	0.01
Acrolein	9.25E-05	0.01	0.00
PAHs	1.68E-04	0.01	0.00
Total HAPS		0.48	0.05

5. Methodology:

Unlimited Potential to Emit (tons per year) = Emission Factor (lb/hp-hr) x Unlimited Work Potential (hp-hr/yr) / (2000 lb/ton).
 Limited Potential to Emit (tons per year) = Emission Factor (lb/hp-hr) x Limited Work Potential (hp-hr/yr) / (2000 lb/ton).
 The conversion from g/kW-hr to lb/hp-hr was made as follows: (g/kW-hr) x (1 lb / 453.59 g) x (745.7 W /hp) x (1 kW / 1000 W).
 Total polycyclic aromatic hydrocarbons (PAHs) are reported due to the small quantities emitted.
 The heat content of diesel fuel is estimated at 139,500 btu/gallon.
 The density of diesel fuel is estimated at 7.09 lb/gallon using an average API gravity of 35.

**Appendix A: Emission Calculations
Combustion Emissions
From Biomethanator Flare**

**Company Name: Indiana Renewable Fuels, LLC
Address: Section 18, Township 32 North, Range 3 West, Argos, Indiana
FESOP: F099-24648-00103
Reviewer: David J. Matousek
Date: January 22, 2008**

This methanator flare only operates when the DDGS dryers are down.

Max. Heat Input MMBtu/hr	Limited Hours of Operation (hr/yr)	Estimate Gas Usage Based on Hours (MMCF/yr)
6.40 Flare	2,000 Flare	12.8 Flare
0.10 Pilot	8,760 Pilot	0.9 Pilot
		13.7 Total

Pilot Emissions

Emission Factor in lb/MMBtu ^a	Pollutant		
	NOx	CO	VOC
	0.1000	0.0840	0.0055
Unlimited PTE (tons/yr)	0.04	0.04	0.00
Limited PTE (tons/yr)	0.04	0.04	0.00

Flare Emissions

Emission Factor in lb/MMBtu ^b	Pollutant		
	NOx	CO	VOC
	0.068	0.37	0.052
Unlimited PTE (tons/yr)	1.91	10.37	1.46
Limited PTE (tons/yr)	0.44	2.37	0.33

Total Unlimited PTE (tons/yr)	1.95	10.41	1.46
Total Limited PTE (tons/yr)	0.48	2.41	0.33
Estimated Loading (lb/MMCF)	70.07	351.82	48.18

^a Emission factors are from AP-42, Tables 13.5-1 and 13.5-2 (AP-42, 01/95).

The Permittee stated that PM/PM10 emissions from this flare are negligible due to the smokeless design. The PTE of SO₂ is negligible due to negligible sulfur presence in the gas stream.

^b Emission factors are from AP-42, Tables 1.4-1 and 1.4-2.

Methodology

Fuel Usage = [Heat Input (MMBtu/hr) x Operating Hours (hr/yr) x 1,000,000 Btu/MMBtu x 1 CF/1000 Btu x MMCF/1,000,000 CF]
Estimated Loading = [Limited PTE (tpy) x 2000 lb/ton] / Total Fuel Used (MMCF/yr)