INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We make Indiana a cleaner, healthier place to live.

Mitchell E. Daniels, Jr.
Governor

Thomas W. Easterly
Commissioner

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

TO: Interested Parties / Applicant

DATE: May 9, 2007

RE: Muncie Ethanol, LLC / 035-23723-00080

FROM: Nisha Sizemore
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, Room 1049, Indianapolis, IN 46204, **within eighteen (18) calendar days of the mailing of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

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

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

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

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

Enclosures
FNPER.dot 03/23/06

Mitchell E. Daniels, Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204-2251
(317) 232-8603
(800) 451-6027
www.IN.gov/idem

NEW SOURCE CONSTRUCTION AND FEDERALLY ENFORCEABLE STATE OPERATING PERMIT OFFICE OF AIR QUALITY

Muncie Ethanol, LLC
Intersection of State Hwy 3 and E 800 North
Muncie, Indiana 47302

(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 2-8 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17.

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

Operation Permit No.: F035-23723-00080	
Issued by: Original signed by Nisha Sizemore, Chief Branch Chief Office of Air Quality	Issuance Date:May 9, 2007 Expiration Date:May 9, 2012

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SECTION A SOURCE SUMMARY

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

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

The Permittee owns and operates a stationary ethanol production plant.

Source Address:	Intersection of State Hwy 3 and E 800 North, Muncie, Indiana 47302
Mailing Address:	445 Park Ave, 10th Floor, New York, NY, 10022
General Source Phone Number:	(212) 575-1012
SIC Code:	2869
County Location:	Delaware
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 1 of 28 Source Categories

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

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

(a) One (1) grain receiving and handling operation, approved for construction in 2007, controlled by baghouse C01, exhausting through stack SV01, and consisting of the following:

(1) Two (2) grain receiving pits, identified as EU01 (Truck Dump Pit) and EU02 (Rail Dump Pit), approved for construction in 2007, each with a maximum throughput rate of 20,000 bushels of corn per hour.

(2) Two (2) conveyors and elevator systems, identified as EU03-EU06, approved for construction in 2007, each with a maximum throughput rate of 20,000 bushels of corn per hour.

(b) One (1) corn scalper, identified as EU07, approved for construction in 2007, with a maximum throughput rate of 20,000 bushels of corn per hour, controlled by baghouse C01, and exhausting through stack SV01.

(c) Three (3) corn bins, identified as EU08, EU09, and EU59, approved for construction in 2007, with a capacity of 500,000 bushels of corn each, controlled by Bin Vent Filters C02, C03, and C14, respectively, and exhausting through stacks SV02, SV03, and SV15, respectively.

(d) One (1) surge bin, identified as EU10, approved for construction in 2007, with a capacity of 20,000 bushels of corn per hour, controlled by Bin Vent Filter C04, and exhausting through stack SV04.

(e) Three (3) hammermills, identified as EU13, EU14, and EU15, approved for construction in 2007, each with a maximum throughput rate of 66 tons per hour, controlled by baghouses C05 and C06, and exhausting through stacks SV05 and SV06. The hammermills are fed by two conveyors, identified as EU11 and EU12, and approved for construction in 2007.

(f) One (1) fermentation process, approved for construction in 2007, with a maximum throughput rate of 13,000 gallons per hour (as ethanol), controlled by scrubber C07, with emissions exhausted through stack SV16. This process consists of the following:

(1) One (1) Yeast tank, identified as EU26, approved for construction in 2007.

(2) Seven (7) fermenters, identified as EU18 through EU24, approved for construction in 2007.

(3) One (1) beer well, identified as EU25, approved for construction in 2007.

Under NSPS, 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.

(g) Four (4) natural gas fired boilers, identified as EU53, EU54, EU55, and EU56, approved for construction in 2007, each with a maximum heat input rate of 92.4 MMBtu/hr, with emissions exhausting to stacks SV09, SV10, SV11, and SV12, respectively. Under 40 CFR, Subpart Dc, the boilers are considered to be new steam generating units.

(h) One (1) distillation process, approved for construction in 2007, with a maximum throughput rate of 13,000 gallons of ethanol per hour, controlled by a scrubber (C08) and two thermal oxidizers (C09 and C10), each with a maximum heat input capacity of 18 MMBtu/hr, with emissions exhausted through stack SV07. This process consists of the following:

(1) One (1) slurry tank, identified as EU16, approved for construction in 2007.

(2) Two (2) liquefaction tanks, identified as EU17 and EU60, approved for construction in 2007.

(3) One (1) beer stripper, identified as EU27, approved for construction in 2007.

(4) One (1) side stripper, identified as EU28, approved for construction in 2007.

(5) One (1) rectifier column, identified as EU29, approved for construction in 2007.

(6) Four (4) molecular sieves, identified as EU30, EU31, EU32, and EU33, approved for construction in 2007.

(7) One (1) multiple-effect evaporator, identified as EU34, approved for construction in 2007.

(8) One whole stillage tank, identified as EU35, approved for construction in 2007.

(9) One centrate stillage tank, identified as EU36, approved for construction in 2007.

(10) Four (4) centrifuges, identified as EU37, EU38, EU39, and EU40, approved for construction in 2007.

(11) One syrup tank, identified as EU41, approved for construction in 2007.

(12) One 200 proof condenser, identified as EU42, approved for construction in 2007.

Under NSPS, 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.

(i) Two (2) DDGS dryer and cooling systems, with a maximum throughput rate of 360,487

tons of DDGS per year, consisting of the following:

(1) One (1) natural gas fired DDGS dryer, identified as EU43, with a maximum heat input rate of 95 MMBtu/hr and one (1) DDGS cooler, identified as EU44, with emissions controlled by one (1) thermal oxidizer (C09) with a maximum heat input capacity of 18 MMBtu/hr, exhausting through stack SV07.

(2) One (1) natural gas fired DDGS dryer, identified as EU48, with a maximum heat input rate of 95 MMBtu/hr and one (1) DDGS cooler, identified as EU49, with emissions controlled by one (1) thermal oxidizer (C10) with a maximum heat input capacity of 18 MMBtu/hr, exhausting through stack SV07.

(j) One (1) DDGS handling and storage operation, approved for construction in 2007, with a maximum throughput rate of 100 tons/hr of DDGS, and consisting of the following:

(1) One (1) DDGS elevator, identified as EU51, approved for construction in 2007, controlled by baghouse C13, with emissions exhausted to stack SV08.

(2) One (1) DDGS loadout spout, identified as EU52, approved for construction in 2007, controlled by baghouse C13, with emissions exhausted to stack SV08.

(k) One (1) ethanol loading rack for trucks, identified as EU45, approved for construction in 2007, with a maximum throughput rate of 36,000 gallons per hour, with emissions venting through either of two (2) thermal oxidizers identified as C09 and C10, each with a maximum heat input capacity of 18 MMBtu/hr, exhausting through stack SV07.

Under NSPS, 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.

(l) One (1) ethanol loading rack for railcars, identified as EU46, approved for construction in 2007, with a maximum throughput rate of 60,000 gallons per hour, with emissions venting through either of two (2) thermal oxidizers identified as C09 and C10, each with a maximum heat input capacity of 18 MMBtu/hr, exhausting through stack SV07.

Under NSPS, 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.

(m) Two (2) emergency generators, identified as EU57 and EU58, approved for construction in 2007, with a maximum power output rate of 3,196 horsepower each, and exhausting to stacks SV13 and SV14, respectively.

Under 40 CFR 60, Subpart IIII, the emergency generators EU57 and EU58 are considered to be emergency stationary internal combustion engines.

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) Natural gas-fired combustion sources with heat input equal to or less than ten million Btu per hour.

(b) Storage tanks with capacity less than or equal to 1,000 gallons and annual throughputs less than 12,000 gallons.

(c) Vessels storing lubricating oils, hydraulic oils, machining oils, and machining fluids.

(d) Solvent recycling systems with batch capacity less than or equal to 100 gallons.

(e) Forced and induced draft cooling tower system not regulated under a NESHAP.

(f) Replacement or repair of bags in baghouses and filters in other air filtration equipment.

(g) Heat exchanger cleaning and repair.

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

(i) Blowdown for any of the following: sight glass; boiler; compressors; pumps; and cooling tower.

(j) Other emission units, not regulated by a NESHAP, with PM10, NOx, and SO_2 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) One (1) tank for 200-proof ethanol, identified as TK001, approved for construction in 2007, with a maximum capacity of 213,673 gallons of 200-proof ethanol.

(2) One (1) tank for 200-proof ethanol, identified as TK002, approved for construction in 2007, with a maximum capacity of 213,673 gallons of 200-proof ethanol.

(3) One (1) denaturant tank, identified as TK003, approved for construction in 2007, with a maximum capacity of 248,426 gallons of natural gasoline. [326 IAC 8-4-3]

(4) One (1) denatured ethanol tank, identified as TK004, approved for construction in 2007, with a maximum capacity of 1,104,000 gallons of denatured ethanol.

(5) One (1) denatured ethanol tank, identified as TK005, approved for construction in 2007, with a maximum capacity of 1,104,000 gallons of denatured ethanol.

Under 40 CFR 60, Subpart Kb, storage tanks TK001 through TK005 are considered to be new volatile organic liquid storage tanks.

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, F035-23723-00080, is issued for a fixed term of five (5) years from the issuance date of this permit, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3. Subsequent revisions, modifications, or amendments of this permit do not affect the expiration date 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 Compliance Order Issuance [326 IAC 2-8-5(b)]

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

B.11 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.12 Annual Compliance Certification [326 IAC 2-8-5(a)(1)]

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

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue
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 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).

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

(a) If required by specific condition(s) in Section D of this permit, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMPs) prior to startup of operations, including the following information on each facility:

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

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

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

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

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

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

(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

(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
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 095-23482-00127 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
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
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.

(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
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
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 in the source, where the applicable SIP provides for such emission trades without requiring a permit revision, subject to the constraints of Section (a) of this condition and those in 326 IAC 2-8-15(c).

(c) Alternative Operating Scenarios Federally Enforceable State Operating Permit
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][IC13-30-3-1]

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

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

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

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

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

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

C.3 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (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 Fugitive Particulate Matter Emission Limitations [326 IAC 6-5]

Pursuant to 326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations), fugitive particulate matter emissions shall be controlled according to the plan submitted on February 13, 2007. The plan is included as Attachment A.

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

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

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

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

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

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

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

(A) Asbestos removal or 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
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.10 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 than180 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:

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

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

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

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

Unless otherwise specified in this permit, all monitoring and 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:

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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.13 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.14 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.15 Risk Management Plan [326 IAC 2-8-4] [40 CFR 68]

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

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

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

(a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall 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.18 General Record Keeping Requirements [326 IAC 2-8-4(3)] [326 IAC 2-8-5]

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

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

(a) The Permittee shall submit the attached Quarterly Deviation and Compliance Monitoring Report or its equivalent. 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:

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Compliance Data Section, Office of Air Quality
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(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.20 Compliance with 40 CFR 82 and 326 IAC 22-1

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

(a) Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to 40 CFR 82.156.

(b) Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to 40 CFR 82.158.

(c) Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to 40 CFR 82.161.

SECTION D.1 FACILITY OPERATION CONDITIONS – Grain Receiving and Handling

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

(a) One (1) grain receiving and handling operation, approved for construction in 2007, controlled by baghouse C01, exhausting through stack SV01, and consisting of the following:

(1) Two (2) grain receiving pits, identified as EU01 (Truck Dump Pit) and EU02 (Rail Dump Pit), approved for construction in 2007, each with a maximum throughput rate of 20,000 bushels of corn per hour.

(2) Two (2) conveyors and elevator systems, identified as EU03-EU06, approved for construction in 2007, each with a maximum throughput rate of 20,000 bushels of corn per hour.

(b) One (1) corn scalper, identified as EU07, approved for construction in 2007, with a maximum throughput rate of 20,000 bushels of corn per hour, controlled by baghouse C01, and exhausting through stack SV01.

(c) Three (3) corn bins, identified as EU08, EU09, and EU59, approved for construction in 2007, with a capacity of 500,000 bushels of corn each, controlled by Bin Vent Filters C02, C03, and C14, respectively, and exhausting through stacks SV02, SV03, and SV15, respectively.

(d) One (1) surge bin, identified as EU10, approved for construction in 2007, with a capacity of 20,000 bushels of corn per hour, controlled by Bin Vent Filter C04, and exhausting through stack SV04.

(e) Three (3) hammermills, identified as EU13, EU14, and EU15, approved for construction in 2007, each with a maximum throughput rate of 66 tons per hour, controlled by baghouses C05 and C06, and exhausting through stacks SV05 and SV06. The hammermills are fed by two conveyors, identified as EU11 and EU12, and approved for construction in 2007.

(j) One (1) DDGS handling and storage operation, approved for construction in 2007, with a maximum throughput rate of 100 tons/hr of DDGS, and consisting of the following:

(1) One (1) DDGS elevator, identified as EU51, approved for construction in 2007, controlled by baghouse C13, with emissions exhausted to stack SV08.

(2) One (1) DDGS loadout spout, identified as EU52, approved for construction in 2007, controlled by baghouse C13, with emissions exhausted to stack SV08.

Insignificant Activities

(h) Paved and unpaved roads and parking lots with public access.

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

THIS SECTION OF THE PERMIT IS BEING ISSUED UNDER THE PROVISIONS OF 326 IAC 2-1 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 there under, 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 Emission Limitations [326 IAC 2-8-4] [326 IAC 2-2]

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 grain receiving and handling operations:

(a) The PM and PM10 emissions from the grain receiving, handling, and load-out operations shall not exceed the emission limits listed in the table below:

Unit Description	Control Device ID	PM/PM10 Emission Limit (lbs/hr)
Grain Receiving, Conveyors, Elevators, and Corn Scalper (EU01-EU07)	C01	1.29
Corn Storage Bin #1 (EU08)	C02	0.05
Corn Storage Bin #2 (EU09)	C03	0.05
Corn Storage Bin #3 (EU59)	C14	0.05
Surge Bin (EU10)	C04	0.03
Hammermill Baghouse #1 (EU13-EU15)	C05	0.39
Hammermill Baghouse #2 (EU13-EU15)	C06	0.39
DDGS Handling and Loadout (EU51, EU52)	C13	0.29

(b) The total grain received by straight trucks shall not exceed 346,067 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

(c) The total grain received by hopper trucks shall not exceed 807,491 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

(d) The total DDGS loadout shall not exceed 360,487 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

(e) The Permittee shall use periodic sweeping to control PM and PM10 emissions from the paved roads. The sweeping shall be performed in a manner and at a frequency sufficient to ensure compliance with 326 IAC 2-2.

(f) The Permittee shall use a choked flow system during grain receiving and handling.

Combined with the PM/PM10 emissions from other emission units, the PM/PM10 emissions from the entire source are 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.

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

(a) Pursuant to 326 IAC 6-3-2, particulate emissions from each of the 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)
EU01, EU02, EU03, EU04, EU05, EU06, EU07	Grain Receiving, Conveyors, Elevators, and Corn Scalper	560	70.3
EU08	Corn Storage Bin #1	187	57.8
EU09	Corn Storage Bin #2	187	57.8
EU59	Corn Storage Bin #3	187	57.8
EU10	Surge Bin	560	70.3
EU13	Hammermill #1	44	43.4
EU14	Hammermill #2	44	43.4
EU15	Hammermill #3	44	43.4
EU51, EU52	DDGS Handling and Loadout	100	51.3

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

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

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

(b) 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.

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 the control devices.

Compliance Determination Requirements

D.1.7 Particulate Control

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

Unit Description	Control Equipment ID
Grain Receiving, Conveyors, Elevators, and Corn Scalper (EU01-EU07)	C01
Corn Storage Bin #1 (EU08)	C02
Corn Storage Bin #2 (EU09)	C03
Corn Storage Bin #3 (EU59)	C14
Surge Bin (EU10)	C04
Hammermills #1, #2, and #3 (EU13-EU15)	C05
Hammermills #1, #2, and #3 (EU13-EU15)	C06
DDGS Handling and Loadout (EU51, EU52)	C13

(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)] [326 IAC 2-1.1-11]

In order to demonstrate compliance with Conditions D.1.4(a) and D.1.5, the Permittee shall perform PM and PM10 testing for baghouses C01, C04, C05, and C06, and bin vent filters C02, C03, C13, and C14 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 condensible PM10.

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

D.1.9 Visible Emissions Notations

(a) Once per day visible emission notations of the baghouse and bin vent filter stack exhausts (SV01, SV02, SV03, SV04, SV05, SV06, SV08, and SV15) shall be performed during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.

(b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

(c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

(d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

(e) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C- Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

D.1.10 Parametric Monitoring

(a) The Permittee shall record the pressure drop across the baghouses used in conjunction with the grain receiving pits identified as EU01 (Truck Dump Pit) and EU02 (Rail Dump Pit), the two (2) conveyors and elevator systems identified as EU03-EU06, the corn scalper identified as EU07, the three (3) hammermills identified as EU13, EU14, and EU15, the DDGS elevator identified as EU51, and the DDGS loadout spout identified as EU52 and the bin vent filters used in conjunction with the corn storage bins #1-3 (EU08, EU09, and EU59) and the surge bin (EU10) at least once per day when these units are in operation. When for any one reading, the pressure drop across the baghouse or bin vent filter 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. 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 of this permit.

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

D.1.11 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.1.4(b), the Permittee shall maintain monthly records of the amount of grain received by straight truck at this plant.

(b) To document compliance with Condition D.1.4(c), the Permittee shall maintain monthly records of the amount of grain received by hopper truck at this plant.

(c) To document compliance with Condition D.1.4(d), the Permittee shall maintain monthly records of the amount of DDGS loadout.

(d) To document compliance with Condition D.1.4(e), the Permittee shall maintain records of the dates and times that sweeping is performed on the paved roads.

(e) To document compliance with Condition D.1.9, the Permittee shall maintain records of the once per day visible emission notations of the baghouse and bin vent filter stack exhausts. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g., the process did not operate that day).

(f) To document compliance with Condition D.1.10, the Permittee shall maintain once per day records of pressure drop 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).

(g) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.1.13 Reporting Requirements

A quarterly summary of the information to document compliance with Conditions D.1.4(b), D.1.4(c), and D.1.4(d) shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).

SECTION D.2 FACILITY OPERATION CONDITIONS – Fermentation

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

(f) One (1) fermentation process, approved for construction in 2007, with a maximum throughput rate of 13,000 gallons per hour (as ethanol), controlled by scrubber C07, with emissions exhausted through stack SV16. This process consists of the following:

(1) One (1) Yeast tank, identified as EU26, approved for construction in 2007.

(2) Seven (7) fermenters, identified as EU18 through EU24, approved for construction in 2007.

(3) One (1) beer well, identified as EU25, approved for construction in 2007.

Under NSPS, 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.)

THIS SECTION OF THE PERMIT IS BEING ISSUED UNDER THE PROVISIONS OF 326 IAC 2 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 there under, 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 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 scrubber C40, which is used to control the emissions from the fermentation processes:

(a) VOC emissions shall not exceed 8.26 lbs/hr.

(b) Acetaldehyde emissions shall not exceed 1.28 lbs/hr.

(c) Total HAP emissions shall not exceed 1.35 lbs/hr.

Combined with the PM/PM10, VOC, SO_2, CO, and NOx emissions from other units, the PM/PM10, SO_2, VOC, CO, NOx 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.2.5 VOC Emissions [326 IAC 8-5-6]

Pursuant to 326 IAC 8-5-6 (Fuel Grade Ethanol Production at Dry Mills), the Permittee shall comply with the following:

(a) The VOC emissions from the fermentation process shall be controlled by scrubber C07.

(b) The overall VOC control efficiency for the scrubber C07 (including the capture efficiency and absorption efficiency) shall be at least 98%, or the VOC outlet concentration shall not exceed 20 ppmv.

D.2.6 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 its control device.

Compliance Determination Requirements

D.2.7 VOC and HAP Control

In order to comply with Conditions D.2.4 and D.2.5, scrubber C07 shall be in operation and control emissions from the fermentation processes at all times that these units are in operation.

D.2.8 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11] [326 IAC 2-2] [326 IAC 8-5-6]

In order to demonstrate compliance with Conditions D.2.4 and D.2.5, the Permittee shall perform VOC (including emission rate, destruction efficiency, and capture efficiency) and Acetaldehyde testing for the scrubber system stack (SV16) within 60 days after achieving 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.

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

D.2.9 Visible Emissions Notations

(a) Visible emission notations of the stack exhaust from the scrubber system stack (SV16) shall be performed once per day during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.

(b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

(c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

(d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

(e) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C- Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

D.2.10 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 the scrubber C07 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 35 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.2.11 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.2.12 Record Keeping Requirements

(a) To document compliance with Condition D.2.9, the Permittee shall maintain records of once per day visible emission notations of the stack SV16. 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.2.10, the Permittee shall maintain daily records of pressure drop and flow rate for scrubber C07 during normal operation. The Permittee shall include in its daily record when a pressure drop or flow rate reading is not taken and the reason for the lack of a pressure drop or flow rate 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.3 FACILITY OPERATION CONDITIONS – Distillation Processes, Dryer and Cooling System, and Ethanol Loading Racks

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

(h) One (1) distillation process, approved for construction in 2007, with a maximum throughput rate of 13,000 gallons of ethanol per hour, controlled by a scrubber (C08) and two thermal oxidizers (C09 and C10), each with a maximum heat input capacity of 18 MMBtu/hr, with emissions exhausted through stack SV07. This process consists of the following:

(1) One (1) slurry tank, identified as EU16, approved for construction in 2007.

(2) Two (2) liquefaction tanks, identified as EU17 and EU60, approved for construction in 2007.

(3) One (1) beer stripper, identified as EU27, approved for construction in 2007.

(4) One (1) side stripper, identified as EU28, approved for construction in 2007.

(5) One (1) rectifier column, identified as EU29, approved for construction in 2007.

(6) Four (4) molecular sieves, identified as EU30, EU31, EU32, and EU33, approved for construction in 2007.

(7) One (1) multiple-effect evaporator, identified as EU34, approved for construction in 2007.

(8) One whole stillage tank, identified as EU35, approved for construction in 2007.

(9) One centrate stillage tank, identified as EU36, approved for construction in 2007.

(10) Four (4) centrifuges, identified as EU37, EU38, EU39, and EU40, approved for construction in 2007.

(11) One syrup tank, identified as EU41, approved for construction in 2007.

(12) One 200 proof condenser, identified as EU42, approved for construction in 2007.

Under NSPS, 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.

(i) Two (2) DDGS dryer and cooling systems, with a maximum throughput rate of 360,487 tons of DDGS per year, consisting of the following:

(1) One (1) natural gas fired DDGS dryer, identified as EU43, with a maximum heat input rate of 95 MMBtu/hr and one (1) DDGS cooler, identified as EU44, with emissions controlled by one (1) thermal oxidizer (C09) with a maximum heat input capacity of 18 MMBtu/hr, exhausting through stack SV07.

(2) One (1) natural gas fired DDGS dryer, identified as EU48, with a maximum heat input rate of 95 MMBtu/hr and one (1) DDGS cooler, identified as EU49, with emissions controlled by one (1) thermal oxidizer (C10) with a maximum heat input capacity of 18 MMBtu/hr, exhausting through stack SV07.

(k) One (1) ethanol loading rack for trucks, identified as EU45, approved for construction in 2007, with a maximum throughput rate of 36,000 gallons per hour, with emissions venting through either of two (2) thermal oxidizers identified as C09 and C10, each with a maximum heat input capacity of 18 MMBtu/hr, exhausting through stack SV07.

Under NSPS, 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.

(l) One (1) ethanol loading rack for railcars, identified as EU46, approved for construction in 2007, with a maximum throughput rate of 60,000 gallons per hour, with emissions venting through either of two (2) thermal oxidizers identified as C09 and C10, each with a maximum heat input capacity of 18 MMBtu/hr, exhausting through stack SV07.

Under NSPS, 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.)

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 there under, 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]

(a) Pursuant to 326 IAC 2-8-4 (FESOP), and in order to render the requirements of 326 IAC 2-2 (PSD) and 326 IAC 2-4.1 not applicable, the Permittee shall comply with the following emission limits for the thermal oxidizers (C09 and C10) stack SV07, which are used to control the emissions from the distillation scrubber (C08), the dryer and cooling systems, and ethanol loading racks (EU45 and EU46):

(1) PM/PM10 emissions shall not exceed 9.60 lbs/hr.

(2) VOC emissions shall not exceed 11.8 lbs/hr.

(3) CO emissions shall not exceed 15.3 lbs/hr.

(4) NOx emissions shall not exceed 12.3 lbs/hr.

(5) SO_2 emissions shall not exceed 14.0 lbs/hr.

(6) Acetaldehyde emissions shall not exceed 0.93 lbs/hr.

(7) Total HAP emissions shall not exceed 2.14 lbs/hr.

(b) Pursuant to 326 IAC 2-8-4 (FESOP), the Permittee shall comply with the following for the ethanol loading racks (EU45 and EU46):

(1) The denatured ethanol load-out rate shall not exceed 115,500,000 gallons per twelve (12) consecutive month period with compliance determined at the end of each month.

(2) The ethanol loading racks shall utilize submerged loading methods.

(3) The railcars and trucks shall not use vapor balance service during ethanol loading.

Combined with the PM/PM10, VOC, CO, SO_2, and NOx emissions from other units, the PM/PM10, VOC, CO, SO_2 and NOx 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]

(a) Pursuant to 326 IAC 8-5-6 (Fuel Grade Ethanol Production at Dry Mills), the Permittee shall comply with the following:

(1) The VOC emissions from the distillation process shall be controlled by a wet scrubber identified as C08 followed by one of two (2) thermal oxidizers, identified as C09 and C10.

(2) The overall VOC control efficiency for the wet scrubber and thermal oxidizer system (including the capture efficiency and destruction efficiency) shall be at least 98%, or the VOC outlet concentration shall not exceed 10 ppmv.

(b) Pursuant to 326 IAC 8-5-6 (Fuel Grade Ethanol Production at Dry Mills), the Permittee shall comply with the following:

(1) The VOC emissions from the DDGS dryers (EU43 and EU48) shall be controlled by one of two (2) thermal oxidizers, identified as C09 and C10.

(2) The VOC emissions from the ethanol loading racks shall be controlled by one of two (2) thermal oxidizers, identified as C09 and C10.

(3) The overall VOC control efficiency for each of the thermal oxidizers, identified as C09 and C10 (including the capture efficiency and destruction efficiency) shall be at least 98%, or the VOC outlet concentration shall not exceed 10 ppmv.

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

(a) Pursuant to 326 IAC 6-3-2, particulate emissions from each of the 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)
EU43	DDGS Dryer	41.15	42.8
EU44	DDGS Cooler	41.15	42.8
EU48	DDGS Dryer	41.15	42.8
EU49	DDGS Cooler	41.15	42.8

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

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

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

(b) 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.

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 their control devices.

Compliance Determination Requirements

D.3.8 VOC and HAP Control

In order to comply with Conditions D.3.4 and D.3.5:

(a) The scrubber C08 and thermal oxidizers C09 and C10 shall be in operation, and control emissions from the distillation process at all times that the distillation process is in operation.

(b) The thermal oxidizers C09 and C10 shall be in operation and control emissions from the DDGS dryers (EU43 and EU48) and the ethanol loading racks (EU45 and EU46) at all times that the dryers and loading racks are in operation.

D.3.9 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11] [326 IAC 2-2] [326 IAC 8-5-6]

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, SO_2, and Acetaldehyde testing for the thermal oxidizer system stack (SV07) 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 condensible 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.3.10 Visible Emissions Notations

(a) Visible emission notations of the thermal oxidizer stack (SV07) shall be performed once per day during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.

(b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

(c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

(d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

(e) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C- Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

D.3.11 Thermal Oxidizer Temperature [326 IAC 8-5-6]

(a) A continuous monitoring system shall be calibrated, maintained, and operated on each of the thermal oxidizers (C09 and C10) for measuring operating temperature. For the purpose of this condition, continuous means no less than once per minute. The output of this system shall be recorded as 3-hour average. From the date of startup 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.

(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.3.12 Parametric Monitoring [326 IAC 8-5-6]

(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.3.4 and D.3.5, as approved by IDEM.

(b) The duct pressure or fan amperage 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.

D.3.13 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 the scrubber C08 at least once per day when the distillation 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 35 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.3.14 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.3.15 Record Keeping Requirements

(a) To document compliance with Condition D.3.4(b)(1), the Permittee shall maintain monthly records of the total amount of denatured ethanol loaded out from loading racks EU45 and EU46.

(b) To document compliance with Condition D.3.10, the Permittee shall maintain records of once per day visible emission notations of the stack SV07. 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).

(c) To document compliance with Condition D.3.11, the Permittee shall maintain continuous temperature records for each thermal oxidizer and the 3-hour average temperature used to demonstrate compliance during the most recent compliant stack test. The Permittee shall include in its daily record when a temperature reading is not taken and the reason for the lack of a temperature reading (e.g., the process did not operate that day).

(d) To document compliance with Condition D.3.12, the Permittee shall maintain daily records of the duct pressure or fan amperage for each of the thermal oxidizer systems (C09 and C10). The Permittee shall include in its daily record when a duct pressure or fan amperage reading is not taken and the reason for the lack of a duct pressure or fan amperage reading (e.g., the process did not operate that day).

(e) To document compliance with Condition D.3.13, the Permittee shall maintain daily records of pressure drop and flow rate for the scrubber C08 during normal operation. The Permittee shall include in its daily record when a pressure drop or flow rate reading is not taken and the reason for the lack of a pressure drop or flow rate reading (e.g., the process did not operate that day).

(f) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.3.16 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.3.4(b)(1) 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.4 FACILITY OPERATION CONDITIONS – Boilers

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

(g) Four (4) natural gas fired boilers, identified as EU53, EU54, EU55, and EU56, approved for construction in 2007, each with a maximum heat input rate of 92.4 MMBtu/hr, with emissions exhausting to stacks SV09, SV10, SV11, and SV12, respectively. Under 40 CFR, Subpart Dc, the boilers are considered to be new steam generating units.

(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 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 there under, 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, and in order to render the requirements of 326 IAC 2-2 (PSD) not applicable, the following conditions shall apply:

(a) The boilers shall burn only natural gas.

(b) NOx emissions from each boiler shall not exceed 2.22 pounds per hour.

(c) CO emissions from each boiler shall not exceed 1.66 pounds per hour.

(d) SO_2 emissions from each boiler shall not exceed 0.055 pounds per hour.

(e) VOC emissions from each boiler shall not exceed 0.18 pounds per hour.

(f) PM emissions from each boiler shall not exceed 0.17 pounds per hour.

(g) PM10 emissions from each boiler shall not exceed 0.46 pounds per hour.

Combined with the PM, PM10, NOx, CO, SO_2, and VOC emissions from other units, the PM,

PM10, NOx, CO, SO_2, and VOC emissions from the entire source are limited to less than one hundred (100) tons per year. Therefore, the requirements of 326 IAC 2-7 (Part 70 Program) and 326 IAC 2-2 (PSD) are not applicable.

D.4.5 Particulate Emissions [326 IAC 6-2-4]

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 0.234 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 = 369.6 MMBtu/hr.

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.

Compliance Determination Requirements

D.4.7 Testing Requirements [326 IAC 2-8-5(a) (1), (4)] [326 IAC 2-1.1-11]

In order to demonstrate compliance with Condition D.4.4, the Permittee shall perform NOx, CO, PM, and PM10 testing for one of the four (4) 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. These tests shall be repeated on a different boiler 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.4.8 Record Keeping Requirements

All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.4.9 State Only Emissions Standards of Performance for Small Industrial–Commercial–Institutional Steam Generating Units Requirements [326 IAC 12]

Pursuant to 326 IAC 12 and until 326 IAC 1-1-3 is revised to include the version of 40 CFR 60, Subpart Dc amended on February 27, 2006, the Permittee shall comply with the previous version of 40 CFR 60, Subpart Dc, published in 65 FR 61752, Oct. 17, 2000, for boilers EU53, EU54, EU55, and EU56 as follows:

§ 60.48c Reporting and recordkeeping requirements.

(g) The owner or operator of each affected facility shall record and maintain records of the amounts of each fuel combusted during each day.

[55 FR 37683, Sept. 12, 1990, as amended at 64 FR 7465, Feb. 12, 1999; 65 FR 61753, Oct. 17, 2000]

D.4.10 Reporting Requirements

The natural gas certification shall be used for the natural gas-fired boilers, identified as EU53, EU54, EU55, and EU56. The natural gas certification shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting form located at the end of this permit, or its equivalent, within thirty (30) days after the end of the six (6) month period being reported. The natural gas-fired certification does require the certification by the “authorized individual” as defined by 326 IAC 2-1.1-1(1).

SECTION D.5 FACILITY OPERATION CONDITIONS – Emergency Generators

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

(m) Two (2) emergency generators, identified as EU57 and EU58, approved for construction in 2007, with a maximum power output rate of 3,196 horsepower each, and exhausting to stacks SV13 and SV14, respectively.

Under 40 CFR 60, Subpart IIII, the emergency generators EU57 and EU58 are considered to be emergency stationary internal combustion engines.

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

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

D.5.1 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 operating hours for the two (2) emergency generators, identified as EU57 and EU58, shall not exceed 100 hours each per twelve (12) consecutive month period with compliance determined at the end of each month.

Combined with the emission limits from other emission units, the emissions of each regulated pollutant 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.5.2 Record Keeping Requirements

To document compliance with Condition D.5.1, the Permittee shall maintain monthly records of the operating hours for the emergency generators (EU57 and EU58).

D.5.3 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.5.1 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 FACILITY OPERATION CONDITIONS – Storage Tanks

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

(j) Other emission units, not regulated by a NESHAP, with PM10, NOx, and SO_2 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) One (1) tank for 200-proof ethanol, identified as TK001, approved for construction in 2007, with a maximum capacity of 213,673 gallons of 200-proof ethanol.

(2) One (1) tank for 200-proof ethanol, identified as TK002, approved for construction in 2007, with a maximum capacity of 213,673 gallons of 200-proof ethanol.

(3) One (1) denaturant tank, identified as TK003, approved for construction in 2007, with a maximum capacity of 248,426 gallons of natural gasoline. [326 IAC 8-4-3]

(4) One (1) denatured ethanol tank, identified as TK004, approved for construction in 2007, with a maximum capacity of 1,104,000 gallons of denatured ethanol.

(5) One (1) denatured ethanol tank, identified as TK005, approved for construction in 2007, with a maximum capacity of 1,104,000 gallons of denatured ethanol.

Under 40 CFR 60, Subpart Kb, storage tanks TK001 through TK005 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.)

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

D.6.1 Volatile Organic Compounds (VOC) [326 IAC 8-4-3]

(a) Pursuant to 326 IAC 8-4-3(b)(1)(B), storage tank TK003 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 potion 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 TK003:

(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 vessel.

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

D.6.2 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.

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

D.6.3 Record Keeping Requirements

(a) To document compliance with Condition D.6.1, the Permittee shall maintain the following records for tank TK003:

(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 vessel.

(b) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

SECTION E.1 FACILITY OPERATION CONDITIONS

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

(f) One (1) fermentation process, approved for construction in 2007, with a maximum throughput rate of 13,000 gallons per hour (as ethanol), controlled by scrubber C07, with emissions exhausted through stack SV16. This process consists of the following:

(1) One (1) Yeast tank, identified as EU26, approved for construction in 2007.

(2) Seven (7) fermenters, identified as EU18 through EU24, approved for construction in 2007.

(3) One (1) beer well, identified as EU25, approved for construction in 2007.

Under NSPS, 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.

(h) One (1) distillation process, approved for construction in 2007, with a maximum throughput rate of 13,000 gallons of ethanol per hour, controlled by a scrubber (C08) and two thermal oxidizers (C09 and C10), each with a maximum heat input capacity of 18 MMBtu/hr, with emissions exhausted through stack SV07. This process consists of the following:

(1) One (1) slurry tank, identified as EU16, approved for construction in 2007.

(2) Two (2) liquefaction tanks, identified as EU17 and EU60, approved for construction in 2007.

(3) One (1) beer stripper, identified as EU27, approved for construction in 2007.

(4) One (1) side stripper, identified as EU28, approved for construction in 2007.

(5) One (1) rectifier column, identified as EU29, approved for construction in 2007.

(6) Four (4) molecular sieves, identified as EU30, EU31, EU32, and EU33, approved for construction in 2007.

(7) One (1) multiple-effect evaporator, identified as EU34, approved for construction in 2007.

(8) One whole stillage tank, identified as EU35, approved for construction in 2007.

(9) One centrate stillage tank, identified as EU36, approved for construction in 2007.

(10) Four (4) centrifuges, identified as EU37, EU38, EU39, and EU40, approved for construction in 2007.

(11) One syrup tank, identified as EU41, approved for construction in 2007.

(12) One 200 proof condenser, identified as EU42, approved for construction in 2007.

Under NSPS, 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.

(k) One (1) ethanol loading rack for trucks, identified as EU45, approved for construction in 2007, with a maximum throughput rate of 36,000 gallons per hour, with emissions venting through either

of two (2) thermal oxidizers identified as C09 and C10, each with a maximum heat input capacity of 18 MMBtu/hr, exhausting through stack SV07.

Under NSPS, 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.

(l) One (1) ethanol loading rack for railcars, identified as EU46, approved for construction in 2007, with a maximum throughput rate of 60,000 gallons per hour, with emissions venting through either of two (2) thermal oxidizers identified as C09 and C10, each with a maximum heat input capacity of 18 MMBtu/hr, exhausting through stack SV07.

Under NSPS, 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) The provisions of 40 CFR 60, Subpart A - General Provisions, which are incorporated by reference in 326 IAC 12-1, apply to the facilities described in this Section E.1 except when otherwise specified in 40 CFR 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,
Indianapolis, Indiana 46204-2251

E.1.2 Standards 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 Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry, which are incorporated by reference as 326 IAC 12, as follows:

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.

(e) *Alternative means of compliance*—(1) *Option to comply with part 65.* Owners or operators may choose to comply with the provisions of 40 CFR part 65, subpart F, to satisfy the requirements of §§60.482 through 60.487 for an affected facility. When choosing to comply with 40 CFR part 65, subpart F, the requirements of §60.485(d), (e), and (f), and §60.486(i) and (j) still apply. Other provisions applying to an owner or operator who chooses to comply with 40 CFR part 65 are provided in 40 CFR 65.1.

(2) *Part 60, subpart A.* Owners or operators who choose to comply with 40 CFR part 65, subpart F must also comply with §§60.1, 60.2, 60.5, 60.6, 60.7(a)(1) and (4), 60.14, 60.15, and 60.16 for that equipment. All sections and paragraphs of subpart A of this part that are not mentioned in this paragraph (e)(2) do not apply to owners or operators of equipment subject to this subpart complying with 40 CFR part 65, subpart F, except that provisions required to be met prior to implementing 40 CFR part 65 still apply. Owners and operators who choose to comply with 40 CFR part 65, subpart F, must comply with 40 CFR part 65, subpart A.

[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 judgement 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.

(d) Each pump equipped with a dual mechanical seal system that includes a barrier fluid system is exempt from the requirements of paragraph (a), *Provided* the following requirements are met:

(1) Each dual mechanical seal system is—

(i) Operated with the barrier fluid at a pressure that is at all times greater than the pump stuffing box pressure; or

(ii) Equipment with a barrier fluid degassing reservoir that is routed to a process or fuel gas system or connected by a closed vent system to a control device that complies with the requirements of §60.482–10; or

(iii) Equipped with a system that purges the barrier fluid into a process stream with zero VOC emissions to the atmosphere.

(2) The barrier fluid system is in heavy liquid service or is not in VOC service.

(3) Each barrier fluid system is equipped with a sensor that will detect failure of the seal system, the barrier fluid system, or both.

(4) Each pump is checked by visual inspection, each calendar week, for indications of liquids dripping from the pump seals.

(5)(i) Each sensor as described in paragraph (d)(3) is checked daily or is equipped with an audible alarm, and

(ii) The owner or operator determines, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both.

(6)(i) If there are indications of liquids dripping from the pump seal or the sensor indicates failure of the seal system, the barrier fluid system, or both based on the criterion determined in paragraph (d)(5)(ii), a leak is detected.

(ii) 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.

(iii) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(e) Any pump that is designated, as described in §60.486(e)(1) and (2), for no detectable emission, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of paragraphs (a), (c), and (d) of this section if the pump:

(1) Has no externally actuated shaft penetrating the pump housing,

(2) Is demonstrated to be operating with no detectable emissions as indicated by an instrument reading of less than 500 ppm above background as measured by the methods specified in §60.485(c), and

(3) Is tested for compliance with paragraph (e)(2) of this section initially upon designation, annually, and at other times requested by the Administrator.

(f) If any pump is equipped with a closed vent system capable of capturing and transporting any leakage from the seal or seals to a process or to a fuel gas system or to a control device that complies with the requirements of §60.482–10, it is exempt from paragraphs (a) through (e) of this section.

(g) Any pump that is designated, as described in §60.486(f)(1), as an unsafe-to-monitor pump is exempt

from the monitoring and inspection requirements of paragraphs (a) and (d)(4) through (6) of this section if:

(1) The owner or operator of the pump demonstrates that the pump is unsafe-to-monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with paragraph (a) of this section; and

(2) The owner or operator of the pump has a written plan that requires monitoring of the pump 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 (c) of this section if a leak is detected.

(h) Any pump that is located within the boundary of an unmanned plant site is exempt from the weekly visual inspection requirement of paragraphs (a)(2) and (d)(4) of this section, and the daily requirements of paragraph (d)(5) of this section, provided that each pump is visually inspected as often as practicable and at least monthly.

[48 FR 48335, Oct. 18, 1983, as amended at 65 FR 61762, Oct. 17, 2000; 65 FR 78276, Dec. 14, 2000]

§ 60.482-3 Standards: Compressors.

(a) Each compressor shall be equipped with a seal system that includes a barrier fluid system and that prevents leakage of VOC to the atmosphere, except as provided in §60.482–1(c) and paragraph (h) and (i) of this section.

(b) Each compressor seal system as required in paragraph (a) shall be:

(1) Operated with the barrier fluid at a pressure that is greater than the compressor stuffing box pressure; or

(2) Equipped with a barrier fluid system degassing reservoir that is routed to a process or fuel gas system or connected by a closed vent system to a control device that complies with the requirements of §60.482–10; or

(3) Equipped with a system that purges the barrier fluid into a process stream with zero VOC emissions to the atmosphere.

(c) The barrier fluid system shall be in heavy liquid service or shall not be in VOC service.

(d) Each barrier fluid system as described in paragraph (a) shall be equipped with a sensor that will detect failure of the seal system, barrier fluid system, or both.

(e)(1) Each sensor as required in paragraph (d) shall be checked daily or shall be equipped with an audible alarm.

(2) The owner or operator shall determine, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both.

(f) If the sensor indicates failure of the seal system, the barrier system, or both based on the criterion determined under paragraph (e)(2), a leak is detected.

(g)(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.

(h) A compressor is exempt from the requirements of paragraphs (a) and (b) of this section, if it is equipped with a closed vent system to capture and transport leakage from the compressor drive shaft back to a process or fuel gas system or to a control device that complies with the requirements of §60.482–10, except as provided in paragraph (i) of this section.

(i) Any compressor that is designated, as described in §60.486(e) (1) and (2), for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of paragraphs (a)–(h) if the compressor:

(1) Is demonstrated to be operating with no detectable emissions, as indicated by an instrument reading

of less than 500 ppm above background, as measured by the methods specified in §60.485(c); and

(2) Is tested for compliance with paragraph (i)(1) of this section initially upon designation, annually, and at other times requested by the Administrator.

(j) Any existing reciprocating compressor in a process unit which becomes an affected facility under provisions of §60.14 or §60.15 is exempt from §60.482(a), (b), (c), (d), (e), and (h), provided the owner or operator demonstrates that recasting the distance piece or replacing the compressor are the only options available to bring the compressor into compliance with the provisions of paragraphs (a) through (e) and (h) of this section.

[48 FR 48335, Oct. 18, 1983, as amended at 65 FR 61762, Oct. 17, 2000; 65 FR 78277, 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]

§ 60.482-5 Standards: Sampling connection systems.

(a) Each sampling connection system shall be equipped with a closed-purged, closed-loop, or closed-vent system, except as provided in §60.482–1(c). Gases displaced during filling of the sample container are not required to be collected or captured.

(b) Each closed-purge, closed-loop, or closed-vent system as required in paragraph (a) of this section shall comply with the requirements specified in paragraphs (b)(1) through (4) of this section:

(1) Return the purged process fluid directly to the process line; or

(2) Collect and recycle the purged process fluid to a process; or

(3) Be designed and operated to capture and transport all the purged process fluid to a control device that complies with the requirements of §60.482–10; or

(4) Collect, store, and transport the purged process fluid to any of the following systems or facilities:

(i) A waste management unit as defined in 40 CFR 63.111, if the waste management unit is subject to, and operated in compliance with the provisions of 40 CFR part 63, subpart G, applicable to Group 1 wastewater streams;

(ii) A treatment, storage, or disposal facility subject to regulation under 40 CFR part 262, 264, 265, or 266; or

(iii) A facility permitted, licensed, or registered by a State to manage municipal or industrial solid waste, if the process fluids are not hazardous waste as defined in 40 CFR part 261.

(c) In situ sampling systems and sampling systems without purges are exempt from the requirements of paragraphs (a) and (b) of this section.

[60 FR 43258, Aug. 18, 1995, 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.

(f) Any valve that is designated, as described in §60.486(e)(2), for no detectable emissions, as indicated

by an instrument reading of less than 500 ppm above background, is exempt from the requirements of paragraph (a) if the valve:

(1) Has no external actuating mechanism in contact with the process fluid,

(2) Is operated with emissions less than 500 ppm above background as determined by the method specified in §60.485(c), and

(3) Is tested for compliance with paragraph (f)(2) of this section initially upon designation, annually, and at other times requested by the Administrator.

(g) Any valve that is designated, as described in §60.486(f)(1), as an unsafe-to-monitor valve is exempt from the requirements of paragraph (a) if:

(1) The owner or operator of the valve demonstrates that the valve is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with paragraph (a), and

(2) The owner or operator of the valve adheres to a written plan that requires monitoring of the valve as frequently as practicable during safe-to-monitor times.

(h) Any valve that is designated, as described in §60.486(f)(2), as a difficult-to-monitor valve is exempt from the requirements of paragraph (a) if:

(1) The owner or operator of the valve demonstrates that the valve cannot be monitored without elevating the monitoring personnel more than 2 meters above a support surface.

(2) The process unit within which the valve is located either 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 valves as difficult-to-monitor, and

(3) The owner or operator of the valve follows a written plan that requires monitoring of the valve at least once per calendar year.

[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]

§ 60.485 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 an 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. H_2O 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. H_2O 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:

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

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 m^4 /(MJ-sec) (metric units)

= 0.087 ft^4 /(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)

= 4.674×10^8 [(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.

(f) The following information pertaining to all valves subject to the requirements of §60.482–7(g) and (h) and to all pumps subject to the requirements of §60.482–2(g) shall be recorded in a log that is kept in a readily accessible location:

(1) A list of identification numbers for valves and pumps that are designated as unsafe-to-monitor, an explanation for each valve or pump stating why the valve or pump is unsafe-to-monitor, and the plan for monitoring each valve or pump.

(2) A list of identification numbers for valves that are designated as difficult-to-monitor, an explanation for each valve stating why the valve is difficult-to-monitor, and the schedule for monitoring each valve.

(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.

(h) The following information shall be recorded in a log that is kept in a readily accessible location:

(1) Design criterion required in §§60.482–2(d)(5) and 60.482–3(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 §60.480(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.

[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.

[48 FR 48335, Oct. 18, 1983, as amended at 49 FR 22608, May 30, 1984; 65 FR 61763, Oct. 17, 2000]

SECTION E.2 FACILITY OPERATION CONDITIONS

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

(g) Four (4) natural gas fired boilers, identified as EU53, EU54, EU55, and EU56, approved for construction in 2007, each with a maximum heat input rate of 92.4 MMBtu/hr, with emissions exhausting to stacks SV09, SV10, SV11, and SV12, respectively. Under 40 CFR, Subpart Dc, the boilers are considered to be new steam generating units.

(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 the boilers EU53, EU54, EU55, and EU56 except as otherwise specified in 40 CFR Part 60, Subpart Dc.

(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,
Indianapolis, Indiana 46204-2251

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

Pursuant to 40 CFR Part 60, Subpart Dc, the Permittee shall comply with the provisions of Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units, which are incorporated by reference as 326 IAC 12, for the boilers EU53, EU54, EU55, and EU56 as follows:

Subpart Dc —Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units

§ 60.40c Applicability and delegation of authority.

(a) Except as provided in paragraph (d) of this section, the affected facility to which this subpart applies is each steam generating unit for which construction, modification, or reconstruction is commenced after June 9, 1989 and that has a maximum design heat input capacity of 29 megawatts (MW) (100 million Btu per hour (Btu/hr)) or less, but greater than or equal to 2.9 MW (10 million Btu/hr).

(b) In delegating implementation and enforcement authority to a State under section 111(c) of the Clean Air Act, §60.48c(a)(4) shall be retained by the Administrator and not transferred to a State.

(c) Steam generating units which meet the applicability requirements in paragraph (a) of this section are not subject to the sulfur dioxide (SO_2) or particulate matter (PM) emission limits, performance testing requirements, or monitoring requirements under this subpart (§§60.42c, 60.43c, 60.44c, 60.45c, 60.46c, or 60.47c) during periods of combustion research, as defined in §60.41c.

(d) Any temporary change to an existing steam generating unit for the purpose of conducting combustion research is not considered a modification under §60.14.

(e) Heat recovery steam generators that are associated with combined cycle gas turbines and meet the applicability requirements of subpart KKKK of this part are not subject to this subpart. This subpart will continue to apply to all other heat recovery steam generators that are capable of combusting more than

or equal to 2.9 MW (10 MMBtu/h) heat input of fossil fuel but less than or equal to 29 MW (100 MMBtu/h) heat input of fossil fuel. If the heat recovery steam generator is subject to this subpart, only emissions resulting from combustion of fuels in the steam generating unit are subject to this subpart. (The gas turbine emissions are subject to subpart GG or KKKK, as applicable, of this part).

(f) Any facility covered by subpart AAAA of this part is not covered by this subpart.

(g) Any facility covered by an EPA approved State or Federal section 111(d)/129 plan implementing subpart BBBB of this part is not covered by this subpart.

[55 FR 37683, Sept. 12, 1990, as amended at 61 FR 20736, May 8, 1996; 71 FR 9884, Feb. 27, 2006]

§ 60.41c 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 an individual fuel or combination of fuels during a period of 12 consecutive calendar months and the potential heat input to the steam generating unit from all fuels had the steam generating unit been operated for 8,760 hours during that 12-month period at the maximum 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 during a period of 12 consecutive calendar months.

Coal means all solid fuels classified as anthracite, bituminous, subbituminous, or lignite by the American Society of Testing and Materials in ASTM D388–77, 90, 91, 95, or 98a, Standard Specification for Classification of Coals by Rank (IBR—see §60.17), coal refuse, and petroleum coke. Coal-derived synthetic fuels derived from coal for the purposes of creating useful heat, including but not limited to solvent refined coal, gasified coal, coal-oil mixtures, and coal-water mixtures, are also included in this definition for the purposes of this subpart.

Coal refuse means any by-product 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 kilojoules per kilogram (kJ/kg) (6,000 Btu per pound (Btu/lb) on a dry basis.

Cogeneration steam generating unit means a steam generating unit that simultaneously produces both electrical (or mechanical) and thermal energy from the same primary energy source.

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

Combustion research means the experimental firing of any fuel or combination of fuels in a steam generating unit for the purpose of conducting research and development of more efficient combustion or more effective prevention or control of air pollutant emissions from combustion, provided that, during these periods of research and development, the heat generated is not used for any purpose other than preheating combustion air for use by that steam generating unit (i.e., the heat generated is released to the atmosphere without being used for space heating, process heating, driving pumps, preheating combustion air for other units, generating electricity, or any other purpose).

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

Distillate oil means fuel oil that complies with the specifications for fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials in ASTM D396–78, 89, 90, 92, 96, or 98, “Standard Specification for Fuel Oils” (incorporated by reference—see §60.17).

Dry flue gas desulfurization technology means a sulfur dioxide (SO_2) control system that is located between the steam generating unit and the exhaust vent or stack, and that removes sulfur oxides from the combustion gases of the steam generating unit by contacting the combustion gases with an alkaline 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 reagents used in dry flue gas desulfurization systems include, but are not limited to, lime and sodium compounds.

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 SO_2 control system that is not defined as a conventional technology under this section, and for which the owner or operator of the affected facility has received approval from the Administrator to operate as an emerging technology under §60.48c(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 40 CFR 51.24.

Fluidized bed combustion technology means a device wherein fuel is distributed onto a bed (or series of beds) of limestone aggregate (or other sorbent materials) for combustion; and these materials are forced upward in the device by the flow of combustion air and the gaseous products of combustion. Fluidized bed combustion technology includes, but is not limited to, bubbling bed units and circulating bed units.

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.

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 stationary gas turbines, internal combustion engines, and kilns).

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

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

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 (LP) gas, as defined by the American Society for Testing and Materials in ASTM D1835–86, 87, 91, or 97, “Standard Specification for Liquefied Petroleum Gases” (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 oil and residual oil.

Potential sulfur dioxide emission rate means the theoretical SO_2 emissions (nanograms per joule [ng/J], or pounds per million Btu [lb/million Btu] 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.

Residual oil means crude oil, fuel oil that does not comply with the specifications under the definition of distillate oil, and all fuel oil numbers 4, 5, and 6, as defined by the American Society for Testing and Materials in ASTM D396–78, 89, 90, 92, 96, or 98, “Standard Specification for Fuel Oils” (incorporated by reference—see §60.17).

Steam generating unit means a device that combusts any fuel and produces steam or heats water or any other heat transfer medium. This term includes any duct burner that combusts fuel and is part of a combined cycle system. This term does not include process heaters as 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.

Wet flue gas desulfurization technology means an SO_2 control system that is located between the steam generating unit and the exhaust vent or stack, and that removes sulfur oxides from the combustion gases of the steam generating unit by contacting the combustion gases with an alkaline slurry or solution and forming a liquid material. This definition includes devices where the liquid material is subsequently converted to another form. Alkaline reagents used in wet flue gas desulfurization systems include, but are not limited to, lime, limestone, and sodium compounds.

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 particulate matter (PM) or SO_2.

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.

[55 FR 37683, Sept. 12, 1990, as amended at 61 FR 20736, May 8, 1996; 65 FR 61752, Oct. 17, 2000; 71 FR 9884, Feb. 27, 2006]

§ 60.43c Standard for particulate matter.

(d) The PM and opacity standards under this section apply at all times, except during periods of startup, shutdown, or malfunction.

(e)(1) On or 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 commences construction, reconstruction, or modification after February 28, 2005, and that combusts coal, oil, gas, wood, a mixture of these fuels, or a mixture of these fuels with any other fuels and has a heat input capacity of 8.7 MW (30 MMBtu/h) or greater shall cause to be discharged into the atmosphere from that affected facility any gases that contain particulate matter emissions in excess of 13 ng/J (0.030 lb/MMBtu) heat input, except as provided in paragraphs (e)(2) and

[55 FR 37683, Sept. 12, 1990, as amended at 65 FR 61753, Oct. 17, 2000; 71 FR 9885, Feb. 27, 2006]

§ 60.45c Compliance and performance test methods and procedures for particulate matter.

(a) The owner or operator of an affected facility subject to the PM and/or opacity standards under §60.43c shall conduct an initial performance test as required under §60.8, and shall conduct subsequent performance tests as requested by the Administrator, to determine compliance with the standards using the following procedures and reference methods, except as specified in paragraph (c) and (d) of this section.

(1) Method 1 shall be used to select the sampling site and the number of traverse sampling points.

(2) Method 3 shall be used for gas analysis when applying Method 5, Method 5B, or Method 17.

(3) Method 5, Method 5B, or Method 17 shall be used to measure the concentration of PM as follows:

(i) Method 5 may be used only at affected facilities without wet scrubber systems.

(ii) Method 17 may be used at affected facilities with or without wet scrubber systems provided the stack gas temperature does not exceed a temperature of 160 °C (320 °F). The procedures of Sections 8.1 and 11.1 of Method 5B may be used in Method 17 only if Method 17 is used in conjunction with a wet scrubber system. Method 17 shall not be used in conjunction with a wet scrubber system if the effluent is saturated or laden with water droplets.

(iii) Method 5B may be used in conjunction with a wet scrubber system.

(4) The sampling time for each run shall be at least 120 minutes and the minimum sampling volume shall be 1.7 dry standard cubic meters (dscm) [60 dry standard cubic feet (dscf)] except that smaller sampling times or volumes may be approved by the Administrator when necessitated by process variables or other factors.

(5) For Method 5 or Method 5B, the temperature of the sample gas in the probe and filter holder shall be monitored and maintained at 160 ±14 °C (320 ±25 °F).

(6) For determination of PM emissions, an oxygen or carbon dioxide measurement shall be obtained simultaneously with each run of Method 5, Method 5B, or Method 17 by traversing the duct at the same sampling location.

(7) For each run using Method 5, Method 5B, or Method 17, the emission rates expressed in ng/J (lb/million Btu) heat input shall be determined using:

(i) The oxygen or carbon dioxide measurements and PM measurements obtained under this section,

(ii) The dry basis F-factor, and

(iii) The dry basis emission rate calculation procedure contained in Method 19 (appendix A).

(8) Method 9 (6-minute average of 24 observations) shall be used for determining the opacity of stack emissions.

(d) In place of particulate matter testing with EPA Reference Method 5, 5B, or 17, an owner or operator may elect to install, calibrate, maintain, and operate a continuous emission monitoring system for monitoring particulate matter emissions discharged to the atmosphere and record the output of the system. The owner or operator of an affected facility who elects to continuously monitor particulate matter emissions instead of conducting performance testing using EPA Method 5, 5B, or 17 shall install, calibrate, maintain, and operate a continuous emission monitoring system and shall comply with the requirements specified in paragraphs (d)(1) through (d)(13) of this section.

(1) Notify the Administrator 1 month before starting use of the system.

(2) Notify the Administrator 1 month before stopping use of the system.

(3) The monitor shall be installed, evaluated, and operated in accordance with §60.13 of subpart A of this part.

(4) The initial performance evaluation shall be completed no later than 180 days after the date of initial startup of the affected facility, as specified under §60.8 of subpart A of this part or within 180 days of notification to the Administrator of use of the continuous monitoring system if the owner or operator was previously determining compliance by Method 5, 5B, or 17 performance tests, whichever is later.

(5) The owner or operator of an affected facility shall conduct an initial performance test for particulate matter emissions as required under §60.8 of subpart A of this part. Compliance with the particulate matter emission limit shall be determined by using the continuous emission monitoring system specified in paragraph (d) of this section to measure particulate matter and calculating a 24-hour block arithmetic average emission concentration using EPA Reference Method 19, section 4.1.

(6) Compliance with the particulate matter emission limit shall be determined based on the 24-hour daily (block) average of the hourly arithmetic average emission concentrations using continuous emission monitoring system outlet data.

(7) At a minimum, valid continuous monitoring system hourly averages shall be obtained as specified in paragraph (d)(7)(i) of this section for 75 percent of the total operating hours per 30-day rolling average.

(i) At least two data points per hour shall be used to calculate each 1-hour arithmetic average.

(ii) [Reserved]

(8) The 1-hour arithmetic averages required under paragraph (d)(7) of this section shall be expressed in ng/J or lb/MMBtu heat input and shall be used to calculate the boiler operating day daily arithmetic average emission concentrations. The 1-hour arithmetic averages shall be calculated using the data points required under §60.13(e)(2) of subpart A of this part.

(9) All valid continuous emission monitoring system data shall be used in calculating average emission concentrations even if the minimum continuous emission monitoring system data requirements of paragraph (d)(7) of this section are not met.

(10) The continuous emission monitoring system shall be operated according to Performance Specification 11 in appendix B of this part.

(11) During the correlation testing runs of the continuous emission monitoring system required by Performance Specification 11 in appendix B of this part, particulate matter and oxygen (or carbon dioxide) data shall be collected concurrently (or within a 30- to 60-minute period) by both the continuous emission monitors and the test methods specified in paragraph (d)(7)(i) of this section.

(i) For particulate matter, EPA Reference Method 5, 5B, or 17 shall be used.

(ii) For oxygen (or carbon dioxide), EPA reference Method 3, 3A, or 3B, as applicable shall be used.

(12) Quarterly accuracy determinations and daily calibration drift tests shall be performed in accordance with procedure 2 in appendix F of this part. Relative Response Audit's must be performed annually and Response Correlation Audits must be performed every 3 years.

(13) When particulate matter emissions data are not obtained because of continuous emission monitoring system breakdowns, repairs, calibration checks, and zero and span adjustments, emissions data shall be obtained by using other monitoring systems as approved by the Administrator or EPA Reference Method 19 to provide, as necessary, valid emissions data for a minimum of 75 percent of total operating hours on a 30-day rolling average.

[55 FR 37683, Sept. 12, 1990, as amended at 65 FR 61753, Oct. 17, 2000; 71 FR 9885, Feb. 27, 2006]

§ 60.47c Emission monitoring for particulate matter.

(d) Owners or operators complying with the PM emission limit by using a PM CEMS monitor instead of monitoring opacity must calibrate, maintain, and operate a continuous monitoring system, and record the output of the system, for PM emissions discharged to the atmosphere as specified in §60.45c(d). The continuous monitoring systems specified in paragraph §60.45c(d) shall be operated and data recorded during all periods of operation of the affected facility except for continuous monitoring system breakdowns and repairs. Data is recorded during calibration checks, and zero and span adjustments.

[55 FR 37683, Sept. 12, 1990, as amended at 65 FR 61753, Oct. 17, 2000; 71 FR 9886, Feb. 27, 2006]

§ 60.48c Reporting and recordkeeping requirements.

(a) The owner or operator of each affected facility shall submit notification of the date of construction or reconstruction, anticipated startup, and actual startup, as provided by §60.7 of this part. This notification shall include:

(1) The design heat input capacity of the affected facility and identification of fuels to be combusted in the affected facility.

(2) If applicable, a copy of any Federally enforceable requirement that limits the annual capacity factor for any fuel or mixture of fuels under §60.42c, or §60.43c.

(3) The annual capacity factor at which the owner or operator anticipates operating the affected facility based on all fuels fired and based on each individual fuel fired.

(4) Notification if an emerging technology will be used for controlling SO_2 emissions. The Administrator will examine the description of the control device and will determine whether the technology qualifies as an emerging technology. In making this determination, the Administrator may require the owner or operator of the affected facility to submit additional information concerning the control device. The affected facility is subject to the provisions of §60.42c(a) or (b)(1), unless and until this determination is made by the Administrator.

(b) The owner or operator of each affected facility subject to the SO_2 emission limits of §60.42c, or the PM or opacity limits of §60.43c, shall submit to the Administrator the performance test data from the initial and any subsequent performance tests and, if applicable, the performance evaluation of the CEMS and/or COMS using the applicable performance specifications in appendix B.

[55 FR 37683, Sept. 12, 1990, as amended at 64 FR 7465, Feb. 12, 1999; 65 FR 61753, Oct. 17, 2000; 71 FR 9886, Feb. 27, 2006]

(g) The owner or operator of each affected facility shall record and maintain records of the amounts of each fuel combusted during each day. The owner or operator of an affected facility that only burns very low sulfur fuel oil or other liquid or gaseous fuels with potential sulfur dioxide emissions rate of 140 ng/J (0.32 lb/MMBtu) heat input or less shall record and maintain records of the fuels combusted during each calendar month.

(i) All records required under this section shall be maintained by the owner or operator of the affected facility for a period of two years following the date of such record.

(j) The reporting period for the reports required under this subpart is each six-month period. All reports shall be submitted to the Administrator and shall be postmarked by the 30th day following the end of the reporting period.

[55 FR 37683, Sept. 12, 1990, as amended at 64 FR 7465, Feb. 12, 1999; 65 FR 61753, Oct. 17, 2000; 71 FR 9886, Feb. 27, 2006]

SECTION E.3 FACILITY OPERATION CONDITIONS

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

(j) Other emission units, not regulated by a NESHAP, with PM10, NOx, and SO_2 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) One (1) tank for 200-proof ethanol, identified as TK001, approved for construction in 2007, with a maximum capacity of 213,673 gallons of 200-proof ethanol.

(2) One (1) tank for 200-proof ethanol, identified as TK002, approved for construction in 2007, with a maximum capacity of 213,673 gallons of 200-proof ethanol.

(3) One (1) denaturant tank, identified as TK003, approved for construction in 2007, with a maximum capacity of 248,426 gallons of natural gasoline. [326 IAC 8-4-3]

(4) One (1) denatured ethanol tank, identified as TK004, approved for construction in 2007, with a maximum capacity of 1,104,000 gallons of denatured ethanol.

(5) One (1) denatured ethanol tank, identified as TK005, approved for construction in 2007, with a maximum capacity of 1,104,000 gallons of denatured ethanol.

Under 40 CFR 60, Subpart Kb, storage tanks TK001 through TK005 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.)

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 TK001, TK002, TK003, TK004, and TK005 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,
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 TK001, TK002, TK003, TK004, and TK005 as follows:

Subpart Kb - Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels)

Source: 52 FR 11429, April 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]

(d) This subpart does not apply to the following:

(1) Vessels at coke oven by-product plants.

(2) Pressure vessels designed to operate in excess of 204.9 kPa and without emissions to the atmosphere.

(3) Vessels permanently attached to mobile vehicles such as trucks, railcars, barges, or ships.

(4) Vessels with a design capacity less than or equal to 1,589.874 m^3 used for petroleum or condensate stored, processed, or treated prior to custody transfer.

(5) Vessels located at bulk gasoline plants.

(6) Storage vessels located at gasoline service stations.

(7) Vessels used to store beverage alcohol.

(8) Vessels subject to subpart GGGG of 40 CFR part 63.

(e) *Alternative means of compliance*—(1) *Option to comply with part 65.* Owners or operators may choose to comply with 40 CFR part 65, subpart C, to satisfy the requirements of §§60.112b through 60.117b for storage vessels that are subject to this subpart that meet the specifications in paragraphs (e)(1)(i) and (ii) of this section. When choosing to comply with 40 CFR part 65, subpart C, the monitoring requirements of §60.116b(c), (e), (f)(1), and (g) still apply. Other provisions applying to owners or operators who choose to comply with 40 CFR part 65 are provided in 40 CFR 65.1.

(i) A storage vessel with a design capacity greater than or equal to 151 m^3 containing a VOL that, as stored, has a maximum true vapor pressure equal to or greater than 5.2 kPa; or

(ii) A storage vessel with a design capacity greater than 75 m^3 but less than 151 m^3 containing a VOL that, as stored, has a maximum true vapor pressure equal to or greater than 27.6 kPa.

(2) *Part 60, subpart A.* Owners or operators who choose to comply with 40 CFR part 65, subpart C, must also comply with §§60.1, 60.2, 60.5, 60.6, 60.7(a)(1) and (4), 60.14, 60.15, and 60.16 for those storage vessels. All sections and paragraphs of subpart A of this part that are not mentioned in this paragraph (e)(2) do not apply to owners or operators of storage vessels complying with 40 CFR part 65, subpart C, except that provisions required to be met prior to implementing 40 CFR part 65 still apply. Owners and operators who choose to comply with 40 CFR part 65, subpart C, must comply with 40 CFR part 65, subpart A.

(3) *Internal floating roof report.* If an owner or operator installs an internal floating roof and, at initial startup, chooses to comply with 40 CFR part 65, subpart C, a report shall be furnished to the Administrator stating that the control equipment meets the specifications of 40 CFR 65.43. This report shall be an attachment to the notification required by 40 CFR 65.5(b).

(4) *External floating roof report.* If an owner or operator installs an external floating roof and, at initial startup, chooses to comply with 40 CFR part 65, subpart C, a report shall be furnished to the Administrator stating that the control equipment meets the specifications of 40 CFR 65.44. This report shall be an attachment to the notification required by 40 CFR 65.5(b).

[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 m^3 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 m^3 but less than 151 m^3 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.

§ 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.

§ 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 m^3 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 m^3 but less than 151 m^3 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 m^3 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 m^3 but less than 151 m^3 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 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.

[52 FR 11429, Apr. 8, 1987, as amended at 65 FR 61756, Oct. 17, 2000; 65 FR 78276, Dec. 14, 2000; 68 FR 59333, Oct. 15, 2003]

§ 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

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

(m) Two (2) emergency generators, identified as EU57 and EU58, approved for construction in 2007, with a maximum power output rate of 3,196 horsepower each, and exhausting to stacks SV13 and SV14, respectively.

Under 40 CFR 60, Subpart IIII, the emergency generators EU57 and EU58 are considered to be emergency stationary internal combustion engines.

(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 emergency generators EU57 and EU58, 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,
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 emergency generators EU57 and EU58 as follows:

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:

(i) Manufactured after April 1, 2006 and are not fire pump engines, or

(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 11, 2005.

(b) The provisions of this subpart are not applicable to stationary CI ICE being tested at a stationary CI ICE test cell/stand.

§ 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?

(a) Owners and operators of pre-2007 model year emergency stationary CI ICE with a displacement of less than 10 liters per cylinder that are not fire pump engines must comply with the emission standards in table 1 to this subpart. Owners and operators of pre-2007 model year non-emergency stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder that are not fire pump engines must comply with the emission standards in 40 CFR 94.8(a)(1).

§ 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.

(b) If you are an owner or operator of a pre-2007 model year stationary CI internal combustion engine and must comply with the emission standards specified in §§60.4204(a) or 60.4205(a), or if you are an owner or operator of a CI fire pump engine that is manufactured prior to the model years in table 3 to this subpart and must comply with the emission standards specified in §60.4205(c), you must demonstrate compliance according to one of the methods specified in paragraphs (b)(1) through (5) of this section.

(1) Purchasing an engine certified according to 40 CFR part 89 or 40 CFR part 94, as applicable, for the same model year and maximum engine power. The engine must be installed and configured according to the manufacturer's specifications.

(2) Keeping records of performance test results for each pollutant for a test conducted on a similar engine. The test must have been conducted using the same methods specified in this subpart and these methods must have been followed correctly.

(3) Keeping records of engine manufacturer data indicating compliance with the standards.

(4) Keeping records of control device vendor data indicating compliance with the standards.

(5) Conducting an initial performance test to demonstrate compliance with the emission standards according to the requirements specified in §60.4212, as applicable.

(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:

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

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 1 to Subpart IIII of Part 60._Emission Standards for Stationary Pre-2007 Model Year Engines With a Displacement of <10 Liters per Cylinder and 2007-2010 Model Year Engines >2,237 KW (3,000 HP) and With a Displacement of <10 Liters per Cylinder [As stated in §§ 60.4201(b), 60.4202(b), 60.4204(a), and 60.4205(a), you must comply with the following emission standards]

Maximum engine power	Emission standards for stationary pre-2007 model year engines with a displacement of <10 liters per cylinder and 2007-2010 model year engines >2,237 KW (3,000 HP) and with a displacement of <10 liters per cylinder in g/KW-hr (g/HP-hr)				
	NMHC + NOX	HC	NOX	CO	PM
KW<8 (HP<11)	10.5 (7.8)	.....	.....	8.0 (6.0)	1.0 (0.75)
8[le]KW<19 (11[le]HP<25)	9.5 (7.1)	.....	.....	6.6 (4.9)	0.80 (0.60)
19[le]KW<37 (25[le]HP<50)	9.5 (7.1)	.....	.....	5.5 (4.1)	0.80 (0.60)
37[le]KW<56 (50[le]HP<75)	.....	.....	9.2 (6.9)	.....	.....
56[le]KW<75 (75[le]HP<100)	.....	.....	9.2 (6.9)	.....	.....
75[le]KW<130 (100[le]HP<175)	.....	.....	9.2 (6.9)	.....	.....
130[le]KW<225 (175[le]HP<300)	.....	1.3 (1.0)	9.2 (6.9)	11.4 (8.5)	0.54 (0.40)
225[le]KW<450 (300[le]HP<600)	.....	1.3 (1.0)	9.2 (6.9)	11.4 (8.5)	0.54 (0.40)
450[le]KW[le]560 (600[le]HP[le]750)	.....	1.3 (1.0)	9.2 (6.9)	11.4 (8.5)	0.54 (0.40)
KW>560 (HP>750)	.....	1.3 (1.0)	9.2 (6.9)	11.4 (8.5)	0.54 (0.40)

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[le]KW<56 (25[le]HP<75).....	2013
56[le]KW<130 (75[le]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: Muncie Ethanol, LLC
Source Address: Intersection of State Hwy 3 and E 800 North, Muncie, Indiana 47302
Mailing Address: 445 Park Ave, 10th Floor, New York, NY, 10022
FESOP Permit No.: F035-23723-00080

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
Indianapolis, Indiana 46204-2251
Phone: 317-233-0178
Fax: 317-233-6865

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)
EMERGENCY OCCURRENCE REPORT

Source Name: Muncie Ethanol, LLC
Source Address: Intersection of State Hwy 3 and E 800 North, Muncie, Indiana 47302
Mailing Address: 445 Park Ave, 10th Floor, New York, NY, 10022
FESOP Permit No.: F035-23723-00080

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

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

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

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

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

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

Form Completed by:_____

Title / Position:_____

Date:_____

Phone: _____

A certification is not required for this report.

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

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)
SEMI- ANNUAL NATURAL GAS FIRED BOILER CERTIFICATION

Source Name:	Muncie Ethanol, LLC
Source Address:	Intersection of State Hwy 3 and E 800 North, Muncie, Indiana 47302
Mailing Address:	445 Park Ave, 10th Floor, New York, NY, 10022
FESOP Permit No.:	F035-23723-00080
Facility:	Four (4) natural gas-fired boilers, identified as EU53, EU54, EU55, and EU56

☐ Natural Gas Only
☐ Alternate Fuel burned
From:_____ To:_____

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:

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: Muncie Ethanol, LLC
Source Address: Intersection of State Hwy 3 and E 800 North, Muncie, Indiana 47302
Mailing Address: 445 Park Ave, 10th Floor, New York, NY, 10022
FESOP Permit No.: F035-23723-00080
Facility: Grain receiving area
Parameter: Total grain received by straight truck
Limit: 346,067 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

QUARTER:_____ YEAR:_____

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

☐ No deviation occurred in this quarter.

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

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

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: Muncie Ethanol, LLC
Source Address: Intersection of State Hwy 3 and E 800 North, Muncie, Indiana 47302
Mailing Address: 445 Park Ave, 10th Floor, New York, NY, 10022
FESOP Permit No.: F035-23723-00080
Facility: Grain receiving area
Parameter: Total grain received by hopper truck
Limit: 807,491 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

QUARTER:_____ YEAR:_____

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

☐ No deviation occurred in this quarter.

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

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

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: Muncie Ethanol, LLC
Source Address: Intersection of State Hwy 3 and E 800 North, Muncie, Indiana 47302
Mailing Address: 445 Park Ave, 10th Floor, New York, NY, 10022
FESOP Permit No.: F035-23723-00080
Facility: DDGS Loadout Operation
Parameter: Total DDGS loadout
Limit: 360,487 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

QUARTER:_____ YEAR:_____

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

☐ No deviation occurred in this quarter.

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

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

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: Muncie Ethanol, LLC
Source Address: Intersection of State Hwy 3 and E 800 North, Muncie, Indiana 47302
Mailing Address: 445 Park Ave, 10th Floor, New York, NY, 10022
FESOP Permit No.: F035-23723-00080
Facility: Ethanol Loading Racks
Parameter: Total denatured ethanol loadout
Limit: 115,500,000 gallons per twelve (12) consecutive month period with compliance determined at the end of each month.

QUARTER:_____ YEAR:_____

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

☐ No deviation occurred in this quarter.

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

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

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: Muncie Ethanol, LLC
Source Address: Intersection of State Hwy 3 and E 800 North, Muncie, Indiana 47302
Mailing Address: 445 Park Ave, 10th Floor, New York, NY, 10022
FESOP Permit No.: F035-23723-00080
Facility: Emergency Generator EU57
Parameter: Operating hours
Limit: 100 hours per twelve (12) consecutive month period with compliance determined at the end of each month.

QUARTER:_____ YEAR:_____

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

☐ No deviation occurred in this quarter.

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

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

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: Muncie Ethanol, LLC
Source Address: Intersection of State Hwy 3 and E 800 North, Muncie, Indiana 47302
Mailing Address: 445 Park Ave, 10th Floor, New York, NY, 10022
FESOP Permit No.: F035-23723-00080
Facility: Emergency Generator EU58
Parameter: Operating hours
Limit: 100 hours per twelve (12) consecutive month period with compliance determined at the end of each month.

QUARTER:_____ YEAR:_____

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

☐ No deviation occurred in this quarter.

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

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

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: Muncie Ethanol, LLC
Source Address: Intersection of State Hwy 3 and E 800 North, Muncie, Indiana 47302
Mailing Address: 445 Park Ave, 10th Floor, New York, NY, 10022
FESOP Permit No.: F035-23723-00080

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

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".

□ NO DEVIATIONS OCCURRED THIS REPORTING PERIOD.

□ THE FOLLOWING DEVIATIONS OCCURRED THIS REPORTING PERIOD

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

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

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

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

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

Form Completed by:_____

Title / Position:_____

Date:_____

Phone: _____

Attach a signed certification to complete this report.

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

Muncie Ethanol, LLC
445 Park Ave, 10th Floor
New York, NY, 10022

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 Muncie Ethanol, LLC, located at the Intersection of State Hwy 3 and E 800 North, Muncie, Indiana 47302, 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 October 4, 2006 and as permitted pursuant to New Source Construction Permit and Federally Enforceable Operating Permit No. F035-23723-00080, Plant ID No. 035-00080 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_____

_____

Attachment A
Fugitive Dust Control Plan

Muncie Ethanol, LLC
Intersection of State Hwy 3 and E 800 North
Muncie, Indiana 47302

U.S. Ethanol Holdings is proposing to construct a fuel grade ethanol production facility, Muncie Ethanol, near Muncie, Indiana. The facility will produce 110 million gallons of undenatured ethanol per year. This Fugitive Dust Control Plan has been prepared pursuant to Title 326 of the Indiana Administrative Code (IAC), Article 6, Rule 5. The plan outlines all potential particulate matter (PM) fugitive emission sources as well as the control methods proposed for each source.

Potential Emission Sources

There will be three main potential sources of fugitive PM emissions associated with the operation of the ethanol plant. Emission sources will include the following:

- Grain Receiving and Handling
- Dried Distillers Grain with Solubles (DDGS) Handling and Loadout
- Haul Road Traffic (Paved and Unpaved)

Control Methods

Grain Receiving and Handling
Potential PM produced from the grain receiving and handling processes are collected and controlled by high efficiency fabric filter baghouses. In order to limit the amount of uncaptured dust during the grain receiving process, the receiving pits will be located within a building. The distance from the receiving pits to the building door exits allows for the uncaptured dust to settle prior to dispersing to ambient air.

DDGS Handling and Loadout
Potential PM produced from the DDGS handling and loadout processes are collected and controlled by high efficiency fabric filter baghouses. In order to limit the amount of uncaptured dust during the DDGS loadout process, the loadout spouts will be located within a building. The distance from the loadout spouts to the building door exits allows for the uncaptured dust to settle prior to dispersing to ambient air.

Haul Road Traffic (Paved and Unpaved)

Through the hauling process, fugitive dust is generated from the contact between the roads and the vehicle tires causing the re-suspension of loose material on the road surface. The facility proposes the following dust control measures to mitigate emissions from the truck hauling activities at the site:

- Haul roads at the site will be paved;
- Travel on unpaved surfaces will be limited;
- The areas near the grain receiving pits and DDGS loadout spouts will be swept when excess dust is present;
- Visual inspections of the haul roads will be performed daily; and
- Haul roads at the site will be swept/vacuumed when silt has accumulated to visible levels on the road.

Implementation Schedule

The Fugitive Dust Control Plan will be implemented once construction of the facility has been completed. The plan will be kept onsite and updated as needed to prevent fugitive PM emissions from the operation of the ethanol facility.

Indiana Department of Environmental Management
Office of Air Quality

Addendum to the Technical Support Document
For a New Source Review and a Federally Enforceable State Operating Permit (FESOP)

Source Background and Description

Source Name:	Muncie Ethanol, LLC
Source Location:	Intersection of State Hwy 3 and E 800 North, Muncie, Indiana 47302
County:	Delaware
SIC Code:	2869
Operation Permit No.:	F035-23723-00080
Permit Reviewer:	ERG/MP

On March 15, 2007, the Office of Air Quality (OAQ) had a notice published in the Muncie Star Press, Muncie, Indiana stating that Muncie Ethanol, LLC (Muncie Ethanol) had applied for a New Source Construction and Federally Enforceable State Operating Permit (FESOP) to operate an ethanol manufacturing facility with control. The notice also stated that OAQ proposed to issue a 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 on the draft permit were submitted by Charles L. Berger of Berger & Berger LLP (attorneys and counselors at law on behalf of Nathan C. Geesaman and Darlene Zearbaugh), and various members of the public as listed below. Changes made as a result of these comments are shown throughout this addendum. New language is in **bold** while deleted language is in ~~strikeout~~. The Table of Contents has been updated as necessary.

<u>Berger & Berger LLP Comments</u>

On April 12, 2007, Charles L. Berger of Berger and Berger, LLP (referred to as the “Commenter”) submitted comments on the proposed FESOP. The summary of the comments is as follows (bolded language has been added, the language with a line through it has been deleted):

Comment 1:

> The Muncie facility's potential to emit ("PTE") calculations provided in the Technical Support Document are already very close to the major source thresholds for PM (96.9 tpy), PM10 (77.6 tpy), NOx (98.8 tpy), CO (98.8 tpy), VOC (97.8 tpy), SO_2 (62.4 tpy) and total HAPs (18.8 tpy). On their face, these numbers are highly questionable because Muncie is a 115.5 million gallons per year facility and IDEM recently issued a draft permit and TSD for the 69 million gallons per year Ultimate ethanol facility, which uses essentially the same equipment as Muncie and had a reported PTE of PM (87.9 tpy), PM10 (71.7 tpy), NOx (96.1 tpy), CO (98.9 tpy), VOC (84.9 tpy), and HAPs (8.7 tpy). As Muncie is 67% larger than the Ultimate facility, it is reasonable to assume that Muncie would have a PTE of approximately 60% more. This should be especially true for the two Thermal Oxidizers ("TO") as they do not have any limit on the number of hours they can be operated and are permitted based on essentially the same efficiency as the Ultimate facility's RTO. A 60% increase in just the RTO PTE for Ultimate would have put it well over the major source threshold for VOCs, NOx, and CO.[1]

[1] VOC: (46.1 * 0.6) + 84.9 = 112.56. CO: (45.9 * 0.6) + 98.9 = 126.44. NOx: (42 * 0.6) + 96.1 = 121.3.

Response to Comment 1:

The Muncie Ethanol facility is designed differently from the Ultimate facility, and therefore it is not unexpected for their design emissions to be different. For example, Muncie Ethanol operates larger dryers (approximately 33% larger), Muncie Ethanol has a dedicated scrubber for their fermentation process whereas the exhaust from the fermentation scrubber at Ultimate is routed to the RTO, Muncie Ethanol has two thermal oxidizers with a cumulative size greater than the size of the single thermal oxidizer controlling emissions at the Ultimate facility, and the grain receiving baghouse at Muncie Ethanol is larger than the grain receiving baghouse at Ultimate.

Muncie Ethanol is required to perform stack testing on their grain handling baghouses, scrubber, thermal oxidizers, and boilers which account for the majority of total facility PM, PM10, VOC, NOx, and CO emissions.

No change was made to the permit as a result of this comment.

Comment 2:

The commenter stated that particulate matter emissions exceed the major source threshold for the following reasons regarding PM and PM10 emissions from roads:

(a) Particulate emissions from paved roads vary with the amount of silt on the road surface, referred to as "silt loading." According to the TSD, the paved road emissions were calculated using an equation from AP-42 (AP-42 Sec. 13.2.1(12/03)) based on a silt content of 0.6 g/m^2 for non-winter and 2.4 g/m^2 for winter. The TSD's silt content value is the default silt loading for typical <u>urban</u> roadways. There are numerous problems with the use of the 0.6 and 2.4 g/m^2 values.

(1) The TSD's use of the 0.6 and 2.4 g/m^2 silt loading is incorrect. To begin with, the TSD explains that it is using the 12/03 version of AP-42. However, the current version of AP-42 relative to fugitive emissions from paved roads is the November 2006 version. See http://www.epa.gov/ttn/chief/ap42/ch13/final/c13s0201.pdf. There is no rational reason for IDEM to use the outdated version. Furthermore, the current version explains that there is an adjustment factor for each application of antiskid abrasive. The TSD calculations did not use the adjustment factor for application of antiskid abrasive. The appropriate use of the adjustment factor would put the source over the major source threshold for PM.

(2) The paved roads of interest here are within the boundary of an industrial site and thus are <u>industrial</u> roadways, not public roadways. Silt loading values of industrial roads are much higher and are reported elsewhere in the same chapter of AP-42. These higher silt loading values for <u>industrial</u> roadways, which have average silt factors that range from 7.4 to 292 g/m^2, would result in much higher PM and PM10 emissions from haul roads than assumed in the TSD.

(3) Minnesota, which has a long history with ethanol plants, has investigated this issue. Measurements made at the ADM-Marshall ethanol facility in the <u>summer</u> of 2001 found silt loadings ranging from 0.76 to 2.93 g/m^2 with no road cleaning. Measurements made at the same facility in the summer of 2003 with road cleaning found silt loadings of 0.70 to 0.72 g/m^2. The cleaning methods used at this ADM facility include daily road sweeping, vacuuming and washing, and truck speeds limited to 5 miles per hour, none of which are required in the Muncie draft permit.[2]

In spite of these measurements, the Minnesota Pollution Control Agency (MPCA) requires the use of 10.0 g/m^2 as the default silt loading for permits. MPCA also

[2] Air Modeling – Training, Minnesota Air, Water, and Waste Environmental Conference, February 14, 2006.

requires "good documentation for proposed silt loading values" and expects companies to do "extensive" on-site testing/cleaning or to use the silt loadings for industrial facilities in AP-42, Table 13.2.1-4, as noted above. Minnesota permits require sweeping, vacuuming or washing and testing for silt loading. Similarly, Nebraska, another state with a long history of permitting ethanol plants, requires the use of a silt loading of 3 g/m^2, unless site-specific test data is provided.[3]

(4) Using the Nebraska default silt content of 3 g/m^2, the PM and PM10 PTE from Muncie haul roads, coupled with the other PM and PM10 PTE, would make Muncie a major source. The increases would be even greater if Muncie used the MPCA Title V default of 10 g/m^2. We believe this higher default value is appropriate as Muncie has failed to supply any documented site-specific silt loadings.

(b) The paved road fugitive PM and PM10 PTE calculations in the TSD assume that emissions will be reduced by 50% by "periodic sweeping." Three problems with this condition lead to the conclusion that, for purposes of calculating potential to emit, the 50% reduction is invalid and should not be allowed.

(1) First, this condition does not require, much less assure that sweeping will be sufficient to reduce PM and PM10 emissions by 50%. The condition only requires that "sweeping be performed in a manner and at a frequency sufficient to ensure compliance with 326 IAC 2-2." The cite to 326 IAC 2-2 is ambiguous and unenforceable because this regulation has many subparts, none of which relate to sweeping of paved roads at industrial facilities or achieving a 50% control efficiency from any type of facility.

(2) Second, the term "periodic" is ambiguous and thus unenforceable. The plain meaning of "periodic" simply means that the event occurs at regular intervals. This draft Permit does not define the interval. Does periodic mean daily? Weekly? Monthly? Something in between? The frequency of sweeping determines the amount of control achieved. Studies done in Minnesota and elsewhere indicate that daily road sweeping, vacuuming and washing (weather permitting) plus speed limit controls (5 mph) are required to achieve 50% control of fugitive PM and PM10 emissions. The draft permit does not even mention vacuuming, washing and speed limits. Permits for ethanol plants in other states require daily sweeping and periodic silt testing to confirm emissions, unless the emissions are based on a high default silt loading, e.g., 3 to 10 g/m^2[2,4]. Therefore, Muncie cannot rely on this condition to reduce the potential to emit of the haul roads.

In order for a permit to be enforceable as a practical matter, a permitting agency must include specific legal obligations in the permit so that sources will observe the permit constraints and compliance can be determined.[5] Conditions that are vague, contradictory, or confusing are unenforceable. Vague and subjective terms like "periodic" are unenforceable.

The purpose of a permit is to individualize a regulation to site-specific conditions. Condition D.1.4(e), notwithstanding the incomplete cite to 326 IAC 2-8, fails to do that. No site-specific conditions are included in the draft Permit to add detail to the term "periodic" or to assure 50% PM/PM10 control. Furthermore, there is no

[3] ADM Corn Processing, Columbus, Nebraska, Truck Traffic Fugitive Control Strategy and Monitoring Plan, ADM Haul Roads, January 10, 2006.
[4] See, for example, ADM Corn Processing, Columbus, Nebraska, Truck Traffic Fugitive Control Strategy and Monitoring Plan, ADM Haul Roads; Cargill North American Corn Milling, Truck Traffic Fugitive Control Strategy and Monitoring Plan, Cargill North American Sweeteners, Blair, Nebraska.
[5] National Min. Assn v. U.S. EPA, 59 F.3d 1351, 1363 (D.C. Cir. 1995).

reason to believe that sweeping alone, regardless of how frequent, can reduce emissions by 50%.

This ambiguous language allows unlimited enforcement discretion in the determination of whether a violation has occurred, and thus is unenforceable.[6] A permit may not reserve agency discretion to determine whether a violation has actually occurred. A condition that only requires "periodic" sweeping, when the underlying potential to emit calculations assumes 50% control, reserves enforcement discretion to IDEM and prevents citizen enforcement of the permit without a decision by IDEM, thus allowing the source to negotiate the condition "off-permit." As a result, reserving enforcement and violation decisions as to haul roads for the agency renders the Permit unenforceable by citizens.

(3) Third, the TSD does not explain where the 50% figure comes from. The Applicant itself, assumed that the control from sweeping and dust control was only 25%, not the unsupported 50% claim in the TSD. See Federally Enforceable State Operating Permit Application, Muncie Ethanol LLC, October 2006 ("Application") at the unnumbered page entitled "Muncie Ethanol LLC, Fugitive Dust Emissions from Truck Traffic" ("Control from sweeping and Dust Control Plan: 25%"). If we accept the applicant's claim, which we will only for the sake of argument, the source becomes a major source.[7]

Response to Comment 2:

IDEM, OAQ has evaluated the silt loading value used in the emission calculations and investigated the claims made by the commenter with regard to the calculations included in the permit. IDEM, OAQ agrees with the commenter that there is a range of silt loading values presented in AP-42 Chapter 13. Public paved road silt loadings are dependent upon: traffic characteristics (speed, ADT, and fraction of heavy vehicles); road characteristics (curbs, number of lanes, parking lanes); local land use (agriculture, new residential construction) and regional/seasonal factors (snow/ice controls, wind blown dust). However, based on IDEM's evaluation, the default silt loading number of 0.6 grams per square meter value is consistent with the ranges prescribed in AP-42 for paved roads at this type of industrial facility. According to AP-42, Table 13.2.1-3, the default silt loading number is 0.6 g/m^2 for sites that have average daily traffic less than 500 vehicles per day. The averaged traffic at the proposed ethanol production plant will be about 307 vehicles per day. Furthermore, the types of trucks traveling onto the Muncie Ethanol property are not expected to be carrying in mud and dirt from unpaved roads because these trucks are traveling onto the Muncie Ethanol site location from paved roads. Nevertheless, IDEM, OAQ reserves the right to collect site-specific silt loading data if IDEM determines that there is a problem with heavy silt on haul roads.

IDEM, OAQ agrees with the commenter that the applicable version of AP-42 relative to fugitive emissions from paved roads is the November 2006 version. However, the November 2006 version does not change the methodology used in the calculations. Furthermore, no adjustment was made to the emission factor to account for the application of antiskid abrasive. As AP-42 indicates, this factor is only to be considered a "temporary" adjustment for each application of such material; therefore, IDEM considers any increase in PM and PM10 emissions from such activities to be negligible.

IDEM, OAQ is aware that the term "periodic" bears a certain amount of discretion; however, IDEM, OAQ believes it is unnecessary to define "periodic". It is unreasonable to require sweeping at a predetermined interval because each facility has different geographical surroundings and will experience different weather patterns. To define "periodic" as daily, monthly, or weekly would present unnecessary requirements; especially, during events such as a snow storm or rain event. IDEM, OAQ believes it is more practical for facility owners to assess their fugitive dust generation

[6] In re: Indeck-Elwood, LLC, EAB Slip Opinion, PSD Appeal No. 03-04 (Sept. 27, 2006) at 72 n. 101.
[7] PTE of PM after Control = 49.5 tons/yr x (1-25%) = 37.13 tpy.
96.9 + 37.13 – 24.74 = 109.29 tpy PM.

and implement control measures (sweeping) as needed; therefore, IDEM, OAQ has included a requirement for the source to keep records of their sweeping; and at anytime, IDEM, OAQ reserves the right to require more frequent sweeping if IDEM identifies a problem. IDEM believes that based on the requirements of Conditions C.6, C.7, D.1.4(e), D. 1.12(d), and the Fugitive Dust Control Plan (including daily visual inspections of the haul roads and sweeping/vacuuming when silt has accumulated to visible levels), 50% control is reasonable. Subsequent to submittal of the application, Muncie Ethanol has confirmed they will be able to achieve 50% control due to these mitigation measures.

No changes have been made to the permit as the result of this comment.

Comment 3:

The commenter stated that particulate matter emissions may exceed the major source threshold for the following reasons regarding grain receiving emissions:

(a) The draft Permit is based upon an incorrect calculation of grain receiving fugitive emissions. These fugitive emissions were estimated using emission factors from AP-42, Chapter 9.9.1 – Grain Elevators, Tables 9.9.1-1. The fugitive particulate matter emissions from the grain unloading and shipping areas, which are labeled EU01 and EU02, are uncaptured dust that does not pass through a stack or other controllable point source. The fugitive grain receiving calculation assumes 90% control but provides no basis for this assumption. There is no requirement in the draft permit to assure that the emissions from the grain receiving and shipping area are contained and routed to a control device such as baghouse C01. The PTE calculations are based on the assumption that 90% of the emissions generated from the grain receiving will go to the inlet of the baghouse and only 10% will become fugitive emissions. As explained above, this is not correct. However, if it were correct, then the permit would need to contain an enforceable emission limit that 90% of the emissions generated from the grain receiving must go to the inlet of the baghouse. This same analysis applies to the DDGS handling and loadout operations. Moreover, another recent ethanol applicant, Ultimate, claimed that their dump shed only captured 80% of the fugitive emissions. Using Ultimate's 80% capture would result in fugitive PM emissions from the grain receiving of 9.06 tpy, rather than 4.53 tpy, thus putting Muncie over the major source threshold for PM (96.9 + 9.06 – 4.53 = 101.43). However, because no basis is available for the 90% or 80% figure, and because no testing, monitoring or reporting is required, the only reasonable value to use is the uncontrolled value. This would make PM emissions 45.3 tpy and PM10 13.4 tpy, which again would put the source over the major source threshold for PM and over the major source threshold for PM10 in combination with the other corrections discussed in these comments. This same analysis applies to the DDGS handling and loadout operations.

(b) The TSD assumes 99% control from the baghouses in the grain receiving, handling and milling operations. However, the PM10 and PM PTE calculations from baghouses must include a safety factor. IDEM's calculations do not include a safety factor. Baghouses frequently malfunction and there is no continuous direct monitoring and no requirement to stop operations when there are bag failures in multi-compartment baghouses. Typical causes of malfunctions are torn bags that allow excess emissions from the control device outlet and plugging of the bags, which creates excess emissions at the source. Industry personnel, environmental control officials, and equipment vendors indicate that there is evidence that operating problems may result in significant periods during which the control equipment is shut down or operating inefficiently.[8] Therefore, the PTE calculation must include a safety factor for the operation of the baghouse and can not be solely

[8] D. Wallace and V. Ramananthan, Review of Compliance Monitoring Programs with Respect to Grain Elevators, U.S. Environmental Protection Agency Contract No. 68-01-4139, WA 14, U.S. Environmental Protection Agency, Research Triangle Park, NC, 1980, pp. 15-16; in: A. Buonicore and W. Davis (eds.), Air Pollution Control Manual, Grain Handling and Processing, Van Nostrand Reynold, New York, NY, 1992, pp. 517-528.

based on emission rates determined for proper functioning of the control device. Absent a demonstration that 99% control is achievable and enforceable at all times, the potential to emit calculations should be based on the maximum potential emissions, i.e., uncontrolled, or the Permit should be appropriately restricted to require shutdown during any baghouse malfunction of any baghouse. This is especially important in this case where the TSD found the PTE for PM as 96.9% of the allowable limit with the baghouses functioning perfectly at all times.

Response to Comment 3:

IDEM feels that 90% is a conservative control estimate for an unloading operation occurring within a building. A conservative estimate of a 90% capture rate was implemented to account for potential emissions that are not captured and controlled by the baghouse itself as done at other elevators/ethanol plants. Provided the source complies with the throughput limit and uses the grain receiving baghouse (C01) as required, it is expected that the grain receiving baghouse will capture 90% of the PM and PM10 emissions from the grain receiving process; therefore only 10% of the PM and PM10 emissions from the grain receiving operations are considered fugitive emissions. While the uncontrolled component of fugitive emissions were calculated using the AP-42 emission factor, the Department feels that using the site-specific baghouse design parameters provides a more reliable, and conservative, emissions estimate for each baghouse stack. Muncie Ethanol is required to conduct stack testing on the baghouse to verify compliance with the emission limit of 1.29 lb/hr.

In regards to the commenter's concern that the baghouses in the grain receiving, handling and milling emission calculations must include a safety factor, IDEM, OAQ feels that the specific monitoring requirements in the permit regarding baghouses ensures that baghouse malfunctions are minimized. IDEM, OAQ believes that monitoring the pressure drop across the baghouses, is important for determining the proper operation of the control equipment. The Permittee is required to take reasonable response steps when a compliance monitoring parameter is determined to be out of range or abnormal under Condition C.15 - Response to Excursions or Exceedances. This condition ensures that the control equipment is returned to proper operation as soon as practicable, while still allowing the Permittee the flexibility to respond to situations that were not anticipated. In addition, visible emission notations are also used as a trigger that the source perform some corrective action on the facility if visible emissions are abnormal, which helps ensure continuous compliance with the emission limitations.

No change was made to the permit as a result of this comment.

Comment 4:

The commenter stated that VOC emissions exceed the major source threshold for the following reasons:

(a) The draft Permit and TSD inappropriately calculate loading losses from ethanol loading. To show that VOC emissions from loading losses will remain under major source thresholds, the draft Permit depends upon the TSD calculations for trucks and railcars which are based on AP-42, Chapter 5.2. In AP-42, EPA clearly states that the formula used in the TSD, App. A, p. 6, has a probable error rate of +/- 30%. Potential to emit must be based on the maximum emissions. Thus, the TSD should account for the 30% error rate by assuming that the emission factor is 30% higher than the factor resulting from the AP-42 equation. Using an emission factor of 5.72 lbs/kgal,[9] VOC PTE after the given throughput limit of 115,500 kgal/yr and 98% control is 5.86 tpy.[10]

[9] The reported emission factor is 4.40 lbs/kgal. Increasing this rate by 30% yields a factor of lbs/kgal (4.40 x 1.3 = 5.72).
[10] PTE of VOC = 5.72 lbs/kgal x 115,500 kgal/yr * 1 ton/2000 lbs x 1-.98 = 6.6066 tpy.

This revised calculation reduces VOC loading losses by a 98% control efficiency, consistent with the TSD calculation. AP-42, however, clearly states that this control efficiency is too high:

> Control efficiencies for the recovery units range from 90 to over 99 percent, depending on both the nature of the vapors and the type of control equipment used. However, only 70 to 90 percent of the displaced vapors reach the control device, because-of leakage from both the tank truck and collection system. The collection efficiency should be assumed to be 90 percent for tanker trucks required to pass an annual leak test. Otherwise, 70 percent should be assumed.

The draft Permit does not require the trucks that will be used at the Muncie facility to pass an annual leak test so a 70% control efficiency should be used. Once again, this is because the TO itself may be able to reduce by 98% of the VOCs that reach it, but 100% of VOC emissions from loading loses will not reach the TO.

Even using the maximum control efficiency in AP-42 of 90% increases controlled VOC emissions from truck loading to 33.033 tpy (5.72 lbs/kgal x 115,500 kgal/yr x (1-90%) x 1 ton/2000 lbs = 33.033). This single change increases PTE for VOCs, consistent with all limits in the draft Permit, to 125.8 tpy which is above major source thresholds.[11] Note that even if one left the emission factor unchanged from the 4.40 lb/kgal and ignored the previous comment about the 30% correction factor, the PTE would still exceed the major source threshold. This change also results in increased HAP PTE because the PTE calculation for HAPs is equal to the HAP fraction of estimated VOC emissions.

(b) The application and TSD also completely ignore VOC emissions from evaporation of disconnection spillages from the ethanol loading rack. Other agency engineering analyses comparable to IDEM's TSD for ethanol facilities include VOC emissions during disconnection spillages in their PTE calculations. See e.g. San Joaquin Valley Air Pollution Control District, Authority to Construct — Application Review, 60,000,000 Gallon/Year Ethanol Production Facility, Pacific Ethanol Stockton, LLC, Application Nos. N-7365-1-0 through N-7365-28-0, Project No. 1054197, October 10, 2006. IDEM and the applicant have provided no justification for ignoring this source of VOCs for this Facility.

(c) The facility will receive 5,500,000 gallons of denaturant, which is gasoline, per year. However, the PTE does not consider VOC emissions from unloading loss and evaporation of disconnection spills from this gasoline. The unloading loss from this gasoline is uncontrolled. Even if the unloading loss from this gasoline is at a rate that is the same as loading loss from the ethanol incorrectly assumed in the TSD, the facility would still be over the major source threshold (4.4 lbs/kgal * 5,500 / 2000 = 12.1 tpy + 97.8 = 109.9 tpy).

(d) An ethanol facility has many sources of fugitive VOC emissions. These include the wet cake storage pile, the DDGS storage pile, the mash screen vent, the process building exhaust fan, treating cooling tower recirculating water, and wastewater treatment. The VOC emissions from some of these sources are high. Other facilities require these emissions to be vented to the thermal oxidizer. The draft Permit should be modified to require VOC testing of all potential fugitive sources, any significant VOC sources should be controlled by venting to the thermal oxidizers, and fugitive VOC emissions should be included in the source-wide inventory to demonstrate that emissions remain below major source thresholds.

Response to Comment 4:

The trucks receiving ethanol from Muncie Ethanol are managed and owned by different companies. These trucks are conservatively assumed to have carried gasoline prior to filling with denatured ethanol; therefore, pursuant to 326 IAC 8-4-9, the trucks dispensing gasoline and

[11] 97.8 + (33.03 – 5.08) = 125.753 tpy.

being loaded with denatured ethanol are required to have an annual pressure decay or leak test. Additionally, at least one of the thermal oxidizers (C09 and C10) is required to operate when the loading racks (EU45 and EU46) are in operation and there is a requirement in the permit that does not allow for the use of vapor balancing services during ethanol loading. Furthermore, according to manufacturing specifications, the thermal oxidizers (C09 and C10) are expected to achieve 100% capture efficiency.

As shown in the summary of Appendix A, IDEM, OAQ provides for a safety factor of 1 ton per year of VOC emissions (listed under "other insignificant activities"). IDEM, OAQ feels it is reasonable to consider VOC emissions from evaporation of disconnection spillages from the two ethanol loading racks and gasoline handling as part of these "other insignificant activities"; therefore, these emissions are accounted for in the sourcewide potential to emit. Furthermore, Muncie Ethanol is capable of producing both DDGS and WDGS; however, the emissions from the DDGS production are considered to be the worst case scenario given that most of the VOCs in the WDGS are driven off in the drying process. Therefore, the PTE of the wet cake storage is not included in the PTE for the entire source. This is consistent with other similar permitted facilities that have provided emission estimates for wet cake storage.

The sourcewide PTE does consider VOC emissions from the unloading losses of the denaturant storage tank, identified as TK003; the emissions for loading gasoline (RVP-10) into the gasoline tank are accounted for in the calculations provided by the applicant using EPA TANKS 4.0 software. TK003 is estimated to emit 0.84 tons VOC per year. TK003 emission estimates are based on 55 turnovers per year which is approximately 13,663,430 gallons of gasoline per year.

No change was made to the permit as a result of this comment.

Comment 5:

The TSD calculates the NOx PTE as 98.8 tpy. However, this calculation includes only 1.12 tpy NOx from "insignificant combustion activities" and no NOx from other insignificant sources. Insignificant activities are defined in the permit application as having emissions of less than 25 lb/day which translates into 4.6 tpy (25 * 365 / 2000 = 4.5625). The addition of the 4.56 tpy to the total PTE of 98.8 tpy exceeds the major source threshold (98.8 + 4.56 = 103.36).

Response to Comment 5:

IDEM, OAQ disagrees that the NOx sourcewide emissions should include an additional 4.56 tons per year. The "insignificant combustion activities" for Muncie Ethanol include natural gas fired space heaters with a total combined heat input capacity of 2.5 MMBtu/hr. As shown in Appendix A of the TSD, these space heaters have a potential to emit of 1.12 tpy NOx based on emission factors from Fifth Edition AP-42, Section 1.4, "Natural Gas Combustion", 7/98. Besides the boilers, RTO stack (including the DDGS dryers), emergency generators, and the insignificant combustion activities, there are no other NOx emitting units at this source.

No change was made to the permit as a result of this comment.

Comment 6:

The commenter stated that HAP emissions may exceed the major source threshold for the following reasons:

(a) The estimate excludes several important sources of HAP emissions including the cooling tower, space heater and emergency generators.

(b) The HAP emissions from ethanol loading losses are underestimated. Because the HAP PTE is factored from the VOC emissions from those processes, which are significantly underestimated, HAP emissions are much higher as well.

Response to Comment 6:

Negligible HAP emissions are expected from the cooling tower, space heater and emergency generators.

The HAP emissions from ethanol loading losses are estimated based on the speciation of the potential VOC emissions calculated using the worst case scenario of loading denatured ethanol to trucks. HAP emissions during loadout are mainly from the unloading process for trucks, which may have been used to ship gasoline previously. Total combined HAP emissions are limited to 2.14 lbs/hr from stack SV07 (including the HAP emissions from the DDGS dryers). Combined acetaldehyde emissions (the expected largest emitting HAP for this type of process) are limited to 0.93 lbs/hr from SV07. The Permittee is required to test the RTO system stack (SV07) to confirm compliance with the HAP emission limits. Compliance with these limits will ensure that the source remains a minor source of HAP.

No changes were made to the permit as the result of this comment.

Comment 7:

The commenter stated that CO emissions may exceed the major source threshold because the CO calculations include CO from "insignificant activities" based on an AP-42 calculation rather than an enforceable permit limit, which is not permissible. Insignificant activities are defined in the permit application as having emissions of less than 25 lb/day which is 4.6 tpy (25 * 365 / 2000 = 4.5625). The addition of the 4.6 tpy to the total PTE of 98.8 tpy exceeds the major source threshold.

Response to Comment 7:

IDEM, OAQ disagrees that the CO sourcewide emissions should include an additional 4.6 tons per year. The "insignificant combustion activities" for Muncie Ethanol include natural gas fired space heaters with a total combined heat input capacity of 2.5 MMBtu/hr. As shown in Appendix A of the TSD, these space heaters have a potential to emit of 0.94 tpy CO based on emission factors from Fifth Edition AP-42, Section 1.4, "Natural Gas Combustion", 7/98. Besides the boilers, RTO stack (including the DDGS dryers), emergency generators, and the insignificant combustion activities, there are no other CO emitting units located at this source.

No change was made to the permit as a result of this comment.

Comment 8:

The commenter stated that the draft permit does not contain all required emission limits and compliance provisions to qualify as a FESOP and the draft permit lacks emission limits for certain sources to limit the potential to emit to below major source thresholds:

(a) The draft Permit does not properly limit the PTE from the Emergency Generators. The draft permit limits operation to 100 hours per year but does not contain any other emission limits except for the limits in the New Source Performance Standard. Subpart IIII does not have an emission limit for SO_2. However, the TSD was based on an emission rate of 0.0004 lb/hp-hr for the Emergency Generator. Therefore, the permit must have these SO_2 limits.

Subpart IIII imposes a VOC limit of 2.0E-03. However, the TSD is based on a VOC limit of 7.05E-04 for the Emergency Generator. Therefore, the permit must have a VOC limit of 7.05E-04 for the Emergency Generator.

Subpart IIII imposes a CO limit of 1.8E-02 lb/hp-hr. However, the TSD is based on a CO limit of 5.5E-03 lb/hp-hr for the Emergency Generator. Therefore, the permit must impose CO emission limits equivalent to those used in the TSD which are more stringent than the limits in the NSPS.

The permit must also contain a HAP emission limit of zero, a NOx limit of 1.52E-02 lb/hp-hr and a PM/PM10 limit of 7E-04 lb/hp-hr.

(b) Paved roads within the facility are a source of PM and PM10 emissions. The Permit does not limit emissions from these roads. Thus, the Permit does not limit the potential to emit PM and PM10 from paved haul roads. The permit must contain enforceable emission limits based on the PTE used in the TSD.

(c) The 8.22 tpy PM/PM10 PTE for the Cooling Tower is based on a 30,000 gal/min water circulation flow rate, a drift loss of 0.005%, and a total dissolved solids (TDS) level of 2,500 ppm. However, the draft permit does not have any requirements for the cooling tower. In order for the 8.22 tpy PTE for the cooling tower to be enforceable as a practical matter, the permit must limit the flow rate to 30,000 gallons per minute, the drift loss to 0.005%, and the TDS to 2,500 ppm.

(d) The TSD calculates PTE for all pollutants based on AP-42 emission rates from the natural gas space heater. However, the draft permit does not have any emission limits for this unit. The draft permit must include emission limits for all of the emission rates used in TSD App A., p. 11.

Response to Comment 8:

As the commenter notes, emissions from the emergency generators are estimated using AP-42 emission factors that are below the emissions limitations set forth in 40 CFR Part 60, Subpart IIII (Standards of Performance for Stationary Compression Ignition Internal Combustion Engines). However, IDEM, OAQ does not feel emission limits are needed for the emergency generators given that they are only permitted to run a combined total of 100 hours per year.

An emission source which qualifies as a major source under Part 70 rules, and hence needs a Title V permit, may voluntarily accept federally enforceable limits on air pollutant emissions to obtain a FESOP rather than the Title V permit. The federally enforceable limits in a FESOP are derived from sourcewide emissions calculations that account for the maximum potential emissions from each emission unit at the source. Certain operations have minimal PTE; therefore, it is sometimes unnecessary to limit and/or require monitoring for these operations. However, any emissions from an unlimited emission unit are still counted in their entirety towards the sourcewide emissions when determining the permitting level. Therefore, concerning the comments regarding limiting emissions from paved roads, the cooling tower, and the space heaters, IDEM, OAQ believes it is unnecessary to limit emission units where sourcewide emissions are already below major source thresholds due to limitations imposed on other emission units at the source. When a PTE is limited, the Permittee is subject to record keeping and reporting requirements in order to demonstrate compliance with those limits. Collectively, the limited PTE of certain activities along with the unlimited PTE of the remaining activities located at the source must be below major thresholds to be considered a FESOP. No changes were made to the permit as a result of this comment.

No change was made to the permit as a result of this comment.

Comment 9:

The PTE for the Thermal Oxidizers is based on an emission rate of 14.0 lb/hour of SO_2. However, the draft permit contains no emission limit on SO_2 emissions from the Thermal Oxidizers' stacks. Therefore, the permit must have an emission limit for the total emissions from both thermal oxidizers of 14 lb/hour of SO_2.

Response to Comment 9:

IDEM agrees that the PTE for the Thermal Oxidizers is based on an emission rate of 14.0 lb/hour of SO_2, and has included an SO_2 limit in the permit, along with associated testing requirements.

The following changes were made to the permit as a result of this comment:

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

(a) Pursuant to 326 IAC 2-8-4 (FESOP), and in order to render the requirements of 326 IAC 2-2 (PSD) and 326 IAC 2-4.1 not applicable, the Permittee shall comply with the following emission limits for the thermal oxidizers (C09 and C10) **stack SV07**, which are used to control the emissions from the distillation scrubber (C08), the dryer and cooling systems, and ethanol loading racks (EU45 and EU46):

…

(5) SO_2 emissions shall not exceed 14.0 lbs/hr.

(~~5~~**6**) Acetaldehyde emissions shall not exceed 0.93 lbs/hr.

(~~6~~**7**) Total HAP emissions shall not exceed 2.14 lbs/hr.

Combined with the PM/PM10, VOC, CO, **SO_2,** and NOx emissions from other units, the PM/PM10, VOC, CO, **SO_2 and** NOx 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.3.9 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11] [326 IAC 2-2]

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, **SO_2,** and Acetaldehyde testing for the thermal oxidizer system stack (SV07) 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 condensible 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.

Comment 10:

The draft Permit does not recognize startup, shutdown and malfunction. The TSD does not disclose any analysis or design to minimize the frequency of such events and to minimize such excess emissions.

Further, the potential to emit calculations do not appear to have included startup and shutdown emissions, which by themselves could be high enough to exceed the major source threshold. For example, the TSD indicates CO emissions of 98.8 tpy, and VOC emissions of 97.8. Nothing in the Draft Permit or supporting material indicates that the potential to emit calculation or permit limits account for excess emissions that occur during periods of startup, shutdown or malfunction, nor explains how those periods affect emissions at the plant.

For example, as with many large pieces of equipment, the Muncie facility contains equipment that will produce more of certain pollutants when they are starting up or shutting down than when they are operating at a steady state. The combustion equipment, including the DDGS dryers, the emergency generators, thermal oxidizers, and natural gas boilers will generate more CO and VOC emissions during startup and shutdown because CO will not be fully oxidized and the VOCs will not be completely combusted until the equipment reaches steady state of operation. This equipment operates intermittently and may frequently operate at low loads that generate more CO and VOC emissions than at other times.

The Permit fails to place any limits on the increased CO and VOC emission levels that may result during periods of startup and shutdown and does not appear to consider those excess emissions

in calculating the potential to emit. Without limits on increased emissions during startup and shutdown, the Muncie facility may emit pollutants in an amount over the major source threshold. Thus, the Permit should be revised to address the startup and shutdown emissions. Without such revision, it is likely that CO and VOC emissions will exceed both the individual unit Permit limits and major source thresholds.

Response to Comment 10:

IDEM, OAQ does not feel that it is necessary to limit emissions from startup, shutdown, and malfunction. The combustion equipment for Muncie Ethanol is much smaller than a typical large utility boiler, and the duration of startup and shutdown are expected to be minimal. Furthermore, emission calculations for the boilers are based on continuous operation (8,760 hours per year); therefore, the calculations do not account for periods when the boilers are not operating, and may overestimate the actual annual emissions. Nevertheless, the sourcewide emissions are still calculated to be below FESOP thresholds even with these conservative assumptions.

No changes were made as a result of this comment.

Comment 11:

Condition D.3.4 should be clarified to explain that the emission limits are for the combined or total limits from both thermal oxidizers.

Response to Comment 11:

IDEM agrees that the language in Condition D.3.4 should be clarified to indicate that the emission limits apply to the stack SV07, which is the exhaust stack for both thermal oxidizers.

The following changes were made to the permit as a result of this comment:

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

(a) Pursuant to 326 IAC 2-8-4 (FESOP), and in order to render the requirements of 326 IAC 2-2 (PSD) and 326 IAC 2-4.1 not applicable, the Permittee shall comply with the following emission limits for the thermal oxidizers (C09 and C10) **stack SV07**, which are used to control the emissions from the distillation scrubber (C08), the dryer and cooling systems, and ethanol loading racks (EU45 and EU46):

Comment 12:

The commenter stated that the emission limits for the boilers were insufficient.

(a) The TSD calculates the PTE for VOCs for the 4 boilers based on a VOC emission rate of 0.74 lb/hr. However, the draft permit does not contain such an emission limit. Therefore, an emission limit of 0.74 lb/hr for the total emissions from all four boilers needs to be put into the permit in Condition D.4.4.

(b) Similarly, the TSD calculates the PTE for SO_2 for the 4 boilers based on a SO_2 emission rate of 0.22 lb/hr. However, the draft permit does not contain such an emission limit. Therefore, an emission limit of 0.22 lb/hr for the total emissions from all four boilers needs to be put into the permit in Condition D.4.4.

(c) Similarly, the TSD calculates the PTE for combined HAPs for the 4 boilers based on a combined HAPs emission rate of 0.68 lb/hr. However, the draft permit does not contain such an emission limit. Therefore, an emission limit of 0.68 lb/hr for the total emissions from all four boilers needs to be put into the permit in Condition D.4.4.

(d) Furthermore, all of the other emission limits in Condition D.4.4 must be in pounds per hour rather than pounds per mmBtu because the draft permit claims the heat input is not

an enforceable condition and because PTE is calculated in a mass unit, e.q. tons per year.

Response to Comment 12:

IDEM has calculated HAP emissions from the boilers using established AP-42 emission factors and does not feel HAP limits on the boilers are warranted, given that the PTE of HAPs is based on unlimited operation. IDEM agrees with the commenter that emissions limits for VOC and SO_2 should be added to the permit, and that the emission limits should be expressed in terms of pounds per hour.

The following changes were made to the permit as a result of this comment:

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

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

(a) The boilers shall burn only natural gas.

(b) NOx emissions from each boiler shall not exceed ~~0.024~~ **2.22 pounds per hour** ~~pounds per MMBtu~~.

(c) CO emissions from each boiler shall not exceed ~~0.018~~ **1.66 pounds per hour** ~~pounds per MMBtu~~.

(d) SO_2 emissions from each boiler shall not exceed 0.055 pounds per hour.

(e) VOC emissions from each boiler shall not exceed 0.18 pounds per hour.

(~~d~~**f**) PM emissions from each boiler shall not exceed ~~0.0019~~ **0.17 pounds per hour** ~~pounds per MMBtu~~.

(~~e~~**g**) PM10 emissions from each boiler shall not exceed ~~0.005~~ **0.46 pounds per hour** ~~pounds per MMBtu~~.

Combined with the PM, PM10, NOx**,** ~~and~~ CO**, SO_2, and VOC** emissions from other units, the PM, PM10, NOx**,** ~~and~~ CO**, SO_2, and VOC** emissions from the entire source are limited to less than one hundred (100) tons per year. Therefore, the requirements of 326 IAC 2-7 (Part 70 Program) and 326 IAC 2-2 (PSD) are not applicable.

Comment 13:

The TSD calculates that PTE for VOC and HAP from equipment leaks based on certain assumptions about component count, emission factors, Subpart VV Control Effectiveness, and VOC Weight %. However, the draft permit does not have any requirements regarding any of these assumptions. The draft permit must include enforceable standards for all of these assumptions.

Response to Comment 13:

As noted above in response to comment 8, IDEM, OAQ believes it is unnecessary to place limits on all emission units where sourcewide emissions are already below major source thresholds due to limitations imposed on other emission units at the source. When a PTE is limited, the Permittee is subject to record keeping and reporting requirements in order to demonstrate compliance with those limits. Collectively, the limited PTE of certain activities along with the unlimited PTE of the remaining activities located at the source must be below major thresholds to be considered a FESOP.

No changes were made to the permit as a result of this comment.

Comment 14:

The monitoring required in the draft Permit is not adequate to assure continuous compliance. Permit limits can only be enforced through appropriate monitoring, testing and reporting of emissions. An appropriate hierarchy for specifying monitoring to determine compliance is: (1) continuous direct measurement where feasible; (2) initial and periodic direct measurement where continuous monitoring is not feasible; (3) use of indirect monitoring, e.g. surrogate monitoring, where direct monitoring is not feasible; and (4) equipment and work practice standards where direct and indirect monitoring are not feasible. The draft Permit does not comport with this guidance, and in some instances does not require any testing to demonstrate that the emission limits will be complied with when the source is operating.

As mentioned above, an appropriate hierarchy for specifying monitoring to determine compliance begins with continuous direct measurement where feasible as the first option. Numerous factors indicate that a continuous direct measurement, in the form of a continuous emissions monitoring system ("CEMS") is necessary for at least NOx, SOx, and CO emissions from the TO stacks and for at least NOx and CO from the four natural gas fired boiler stacks. To begin with, the PTE calculated in the TSD, even if it were correct, which it is not, is very close to the major source threshold. The CO PTE is 1.2 percent below the major source threshold, the NOx PTE is 1.2 percent below the major source threshold and SO_2 is 37.8 percent. With this limited margin between the calculated amount and the allowable amount, the most reliable and stringent monitoring possible is called for. There can be no doubt that a CEMS for NOx, SOx, and CO is possible for the TO and boiler stacks. The CEMS would cost no more than $100,000. In a plant costing over $160 million, the cost of the CEMS is not a relevant factor for its exclusion. A CEMS is also important because, as explained above, combustion sources can have highly variable emissions during different levels of operation. Only a CEMS will accurately reflect these actual emissions on a continuous basis.

Response to Comment 14:

The boilers Muncie Ethanol proposes to install are subject to the requirements of the NSPS, Subpart Dc; however there are no State or Federal regulations that require continuous monitoring of emissions from these boilers or the thermal oxidizers. The thermal oxidizers are subject to several monitoring requirements, including visible emissions notations, temperature monitoring, and duct pressure or fan amperage monitoring. In addition, there are stack testing requirements in the permit for both the boilers (NOx, CO, PM, and PM10) and the thermal oxidizers (PM, PM10, VOC, NOx, CO, SO_2, and Acetaldehyde). IDEM, OAQ believes these testing and monitoring requirements are sufficient to ensure continuous compliance with all permit terms and conditions.

No change was made to the permit as a result of this comment.

Comment 15:

The method of demonstrating compliance with the source-specific emission limits is by an initial stack test, repeated once every 5 years or longer, and sometimes various parametric testing through indicator operating parameters (e.g., baghouse pressure drop, scrubber pressure drop and flow rate, thermal oxidizer temperature). The draft Permit does not require the demonstration of any relationship between the various parametric indicators and the relevant emission limits, nor does it state that a violation of the indicator constitutes a per se violation of the pollutant of interest. This missing, or minimal and infrequent testing does not satisfy the obligation for testing sufficient to "evaluate continuous compliance" nor does it allow IDEM, U.S. EPA or the public to ensure compliance with the Permit limits.

For some parameters, stack testing is missing. In addition to the missing monitoring discussed in a comment above, the draft permit is missing a requirement for total HAPs testing for SV16, the scrubber stack for the fermentation process, and SV07, the TO stack. In addition, Condition D.1.8 needs to require PM/PM10 testing for baghouse C04 which serves the surge bin, EU10.

More frequent stack tests is also necessary, especially if the comments regarding CEMS are rejected. Annual or more frequent testing is feasible, is commonly required for similar facilities, and should be required here. The draft permit currently requires stack testing on the natural gas boilers once every 20 years after initial testing. Using a stack test every 20 years to demonstrate continuous compliance is clearly arbitrary. Thus, the draft Permit should be modified to require more frequent direct emission testing.

Response to Comment 15:

IDEM, OAQ requires testing for the major emission points located at the source. IDEM believes that testing every five (5) years is sufficient for this source considering the stability of the operation and control devices. There are other types of operations that are not associated with an ethanol production plant that do require more frequent testing such as municipal waste combustors, sulfuric acid plants, and secondary lead smelters. However for the types of operations this source is proposing to construct, five (5) year testing along with frequent monitoring of the control equipment (to ensure the controls are operating correctly) is sufficient. As the four boilers are identical, IDEM believes that testing on any one of the four once every five (5) years is sufficient to estimate compliance with the emission limits for each boiler. IDEM also has the authority to require additional testing at any time if monitoring or other information indicates that a change may have occurred in the operation of the process and/or control device.

As stated in the permit, a parameter reading that is outside the determined range is not a deviation from the permit. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances would be considered a deviation from the permit. The parameter reading does not indicate a violation; however, monitoring the parameter ensures the equipment is operating normally.

The source has provided emissions estimates consistent with other ethanol plants that show Acetaldehyde as the major HAP emitted, and IDEM, OAQ believes that Acetaldehyde is the HAP that is emitted at the highest rate at dry-mill ethanol plants. Additionally, IDEM, OAQ believes that the current required HAP testing for this source is adequate because the vast majority of Acetaldehyde is emitted from the fermentation and distillation processes, and the dryer and cooling systems, all of which require stack testing. IDEM, OAQ acknowledges that certain operations will emit other types of HAPs; yet, it is unnecessary to limit these operations because HAP emissions from an unlimited emission unit are counted in their entirety towards the sourcewide emissions when determining the permitting level.

IDEM agrees with the commenter that PM/PM10 testing should be added to the permit for baghouse C04. The following changes were made to the permit as a result of this comment:

D.1.8 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11]

In order to demonstrate compliance with Conditions D.1.4(a) and D.1.5, the Permittee shall perform PM and PM10 testing for baghouses C01, **C04,** C05, and C06, and bin vent filters C02, C03, C13, and C14 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 condensible PM10.

Comment 16:

The commenter stated that the testing requirements in the permit are insufficient.

(a) The Permit does not identify any of the test methods that will be used to determine compliance with emission limits. Instead, such identification is deferred to a future protocol that will not be subject to public review. All test methods must be disclosed in the Permit to qualify for a FESOP. This is particularly critical for VOCs because there is no standard U.S. EPA or other test method to measure the type of oxygenated VOCs that occur in ethanol plant emissions. To comply with the Clean Air Act, the owner of an

emission source must calculate VOC emissions on a total VOC mass basis, not on the basis of a surrogate such as mass of carbon or mass of propane. One cannot determine if VOC emissions are less than the major source threshold or demonstrate that VOC emissions remain below this threshold unless one calculates VOCs on a total VOC mass basis.[12] The Application and TSD are silent as to the basis for VOC emission calculations and compliance in the Permit.

(b) The available VOC test methods in 40 CFR 60 -- Methods 18, 25, and 25a -- do not directly address the issue of reporting VOC emissions "as VOC." Further, these methods have well known limitations when applied to ethanol plant emissions and thus must be modified or an additional method must be added, such as the Midwest Scaling Protocol, to measure the actual mass of VOCs emitted. These issues exist for VOCs, individual HAPs, and total HAPs. Thus, the method that will be used to measure VOCs and HAPs is critical to disclose during public comments to assure that the compliance test method is consistent with the test method used to develop the VOC and HAP emission limits in the first place and to assure that the method is properly applied. Compliance, for example, would not be demonstrated if the VOC limits were developed based on testing using Method 25a reported as carbon, and compliance was determined with Method 18. The method used to scale measurements to the Permit limit basis is critical in determining compliance and should be disclosed.[13] We believe the draft Permit should be revised and recirculated to cure this serious omission.

Response to Comment 16:

The testing conditions in the permit specify that the Permittee will use test methods approved by the Commissioner. The specific test methods and testing environment will be specified in the test protocol submitted by the Permittee as required in Condition C.9 (Performance Testing) and will be evaluated by IDEM, OAQ prior to the stack test. The most up to date EPA approved test methods will be required for all stack tests; therefore, the test method is not specified in the permit.

No change was made to the permit as a result of this comment.

Comment 17:

The draft Permit requires vague visible emission readings, parametric monitoring, and broken or failed bag detection. These methods fail to assure compliance with the PM and PM10 emission limits, however, rendering the limits unenforceable for the following reasons:

(a) First, the opacity readings are taken only once a day, during daylight, and are only classified as to "normal" or "abnormal." "Abnormal" is defined with reference to prevailing conditions 80% of the time the process is in operation, thus excluding startup and shutdown. If an exceedance of this subjective standard is observed, Muncie must undertake the vague abatement procedures in Section C of the permit. This standard does not assure compliance with the mass emission limits in the permits.

(b) Second, the permit requires parametric monitoring. The proposed differential pressure monitoring of individual baghouses has been shown not to be an adequate indicator of bag leaks. The proposed method would not detect individual bag leaks, which could cause exceedances of the hourly emission limit and the 12 month major source threshold. Further, the draft Permit does not specify where pressure would be measured, but appears to only require differential pressure measurements across the entire

[12] Letter from Stephen D. Page, Direct, Office of Air Quality Planning and Standards, U.S. EPA, to Mary a. Gade, December 30, 2003.
http://www.epa.gov/Region7/programs/artd/airinsrinsrmemos/gade.pdf#search=%22mid west%20scaling %20protocol %22.
[13] E-mail Erik Hardin, U.S. EPA, to Richard Edgehill, San Joaquin Valley Air Pollution Control District, Re: Testing oxygenated organics, January 14, 2004.

baghouse, rather than individual baghouse compartments. This would not help isolate bag leaks.

Response to Comment 17:

The visible emission notations are used as a surrogate to ensure compliance with 326 IAC 5-1 and 326 IAC 6, without the requirement to have a person on site trained in opacity measurement. This requirement is designed as a trigger, prompting the source to perform some corrective action on the facility if visible emissions are abnormal, which helps ensure continuous compliance with emission limitations. As the visible emissions condition states, 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. This training does not need to include the training to become a certified opacity reader, nor does the training need to be done by a certified opacity reader. The purpose of specifying that a trained employee perform the visible emissions notations is to make sure that the employee would know the difference between "normal" and "abnormal" visible emissions from the particular process.

As stated in Response to Comment 3, the Permittee is required to take reasonable response steps when a compliance monitoring parameter is determined to be out of range or abnormal under Condition C.15 - Response to Excursions or Exceedances. This condition ensures that the control equipment is returned to proper operation as soon as practicable, while still allowing the Permittee the flexibility to respond to situations that were not anticipated.

No changes were made as a result of this comment.

Comment 18:

The draft permit does not contain any monitoring (e.g., of silt content, number and type of trucks, type and frequency of dust control measures), record keeping, and reporting to assure that PM/PM10 emissions from roads remain below the levels calculated in the TSD, as required by many states with a long history of regulating ethanol plants, e.g., Minnesota, Nebraska.[14] The draft permit must contain this monitoring and reporting.

Response to Comment 18:

IDEM, OAQ has included a requirement for the source to keep records of their sweeping (in addition to the amount of grain received and DDGS shipped) to demonstrate compliance with the FESOP limit; and at anytime, IDEM, OAQ reserves the right to require more frequent sweeping if IDEM identifies a problem (i.e. as a result of an inspection). Furthermore, IDEM, OAQ believes it is unnecessary to limit all emission units where sourcewide emissions are already below major source thresholds due to limitations imposed on other emission units at the source. See response to comment 8 for further elaboration on this point.

No changes were made to the permit as the result of this comment.

Comment 19:

The TSD claims the PTE for PM is 96.9 tpy, for VOC is 97.8 and for NOx and CO is 98.8 tpy. These values are extremely close to the major source threshold. In order to assure compliance with the synthetic minor caps, the testing and monitoring methods must be extremely accurate. For example, the testing and monitoring for PM must have a precision and accuracy of greater than 96.9% and for NOx and CO greater than 98.8%. In reality, this is not practical. For example, Method 5 is not going to be less than 5% inaccurate. Therefore, the Source must obtain PSD and Title V permits or must have emission limits sufficiently below the major source threshold to take into account the margin of error in monitoring and testing.

[14] See, for example: ADM Corn Processing, Columbus, Nebraska, Truck Traffic Fugitive Control Strategy and Monitoring Plan. ADM Haul Roads, January 10, 2006.

Response to Comment 19:

Indiana has developed a state operating permit program that is enforceable by U.S. EPA and allows sources to limit their air emissions to below the Title V threshold levels. The terms and conditions of the proposed FESOP for Muncie Ethanol limit air emissions to below the Title V and PSD threshold levels as documented by the emission estimates provided in Appendix A of the TSD. These emission estimates were derived from the best information available for this facility, including published emission factors, as well as stack test data from similar facilities and/or equipment manufacturers. Muncie Ethanol will be required to test all the major emission points at this facility, and that testing will be performed using testing methodologies developed and approved by the U.S. EPA and IDEM.

No change was made to the permit as a result of this comment.

Comment 20:

The commenter stated that the VOC emission limits set forth in the draft permit for fermentation, distillation, DDGS drying and cooling, and ethanol loadout are not consistent with the definition of BACT and do not constitute all practical and economically feasible methods to control air pollution because of the following reasons:

(a) The TSD acknowledges that BACT can include changes in process design. However, the applicant and the permit reviewer did not consider the use of a cellulosic ethanol production process, rather than the current production process, in their BACT analysis. Thus, the BACT analysis is incomplete and must be remanded back to the applicant. Broin, who is a project proponent for another ethanol plant proposed for Indiana, says cellulosic ethanol will create commercialization results that include 11 percent more ethanol from a bushel of corn and 27 percent more ethanol from an acre of corn while using 83 percent less energy than needed to operate a corn to ethanol plant.[15] Thus, on a factored basis, emissions from the natural gas sources would be 83 percent less and emissions from other sources would be 11 percent less using a cellulosic process. Also, the environmental impacts of this process would be less as it produces 27 percent more ethanol from an acre of corn.

(b) Fermentation process emissions vent to a wet scrubber. BACT for these processes is 98% VOC control or an outlet concentration of 20 ppmv. The distillation process vents to a wet scrubber and then thermal oxidizer. BACT for these processes is 98% VOC control or an outlet concentration of 10 ppmv. The 98% is not BACT for this process. 99% VOC control is BACT for these processes. Premier Ethanol, LLC., was issued a permit in September, 2006 requiring 99% control efficiency as BACT. IDEM seeks to backpedal in this draft permit, but BACT is the maximum reduction achievable, and the Premier Ethanol permit demonstrates that 99% control of VOCs from fermentation and distillation are achievable. The draft Permit must be revised to include 99% VOC control as BACT.

(c) IDEM must also remove the language from the permit that allows Muncie to emit up to 10 or 20 ppmv VOC. The language gives the source the option of achieving either 98% VOC control "or" a VOC outlet concentration of 10 or 20 ppmv. This effectively guts the 98% requirement because wet scrubbers can achieve VOC concentrations less than 10 ppmv.[16] The phrase "or the VOC outlet concentration shall not exceed 10 [or 20] ppmv" should be removed or changed to read "or the lowest emission rate in ppmv based on the maximum degree of reduction that is achievable" to comply with BACT, which is an emission limit based on the maximum degree of reduction that is achievable.

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[15] See http://thefraserdomain.typepad.com/energy12006/11/broin_companies.html last visited on 12/26/06.

[16] Interpoll Laboratories, Results of the March 3, 2006 Air Emission Compliance Testing at the Verasun Fort Dodge Facility in Fort Dodge, Iowa, April 13, 2006 (2.838 ppmw and 4.583 ppmd). See also other recent stack tests including the July 2006 source test at Horizon Ethanol, Jewell, Iowa (3.8 ppmvd).

(d) The TSD does not explain why the proposed wet scrubber and thermal oxidizer cannot be designed to achieve 99% (or greater) control when VOC inlet concentrations are low. IDEM has claimed in other ethanol plant cases that a control efficiency of 99% may not be achievable in practice at extremely low VOC concentrations. However, no support has ever been offered for this claim. Further, the stack tests that we have reviewed indicate that outlet VOC concentrations are routinely less than 10 ppmv when achieving 99% VOC control.

(e) The TSD does not explain how the 10 ppmv value was determined and whether 10 ppmv represents the lowest VOC concentration that is achievable using any wet scrubber or whether this is just the limit for one particular vendor's wet scrubber, based on the applicant's specific request in a proposal based on financial considerations.

(f) Even if the 10 ppmv limit were retained, the 10 ppmv limit is not enforceable as a practical matter because the draft Permit does not disclose the conditions under which this VOC concentration is stipulated. The Permit must be revised to state the following additional information if a concentration limit is retained: (1) oxygen content; (2) whether the value is reported wet or dry; (3) averaging time; and (4) molecular basis, e.g., reported as carbon, ethanol, methane, etc.

(g) The thermal oxidizers will also be used to control emissions from the DDGS Dryers. The draft Permit includes 98% control efficiency or 10 ppmv as BACT. There is at least one permit limit (Premier Ethanol — 99%), and two facilities with a higher achieved VOC control efficiencies for DOGS dryers using thermal oxidizers: Michigan Ethanol (99.6%), and New Energy Corp (98.8%, 99.2%). Other recent ethanol plant BACT analyses have also identified Agri-Energy, MN (99.59%). IDEM did not specifically explain why higher VOC control efficiencies for similar sources do not establish BACT for the Muncie facility. BACT is an emission limit based on the maximum degree of reduction that is achievable. These stack tests indicate that a VOC control efficiency higher than 98% is achievable, has been achieved, and thus should be required here as BACT for VOC emissions from the DDGS dryers.

Response to Comment 20:

The establishment of a VOC concentration limitation in conjunction with a control efficiency requirement is consistent with the compliance requirements established by the U.S. EPA as part of its national ethanol settlements and as part of the recently promulgated NESHAPs. The concentration requirement was established because at extremely low VOC concentrations, a control efficiency of 98% may not be achievable in practice. Many vendors and manufactures will not guarantee their control equipment to efficiencies of 98% at extremely low VOC concentrations.

The testing requirements conditions in the permit specify that the Permittee will use test methods approved by the Commissioner. The specific test methods and testing environment will be specified in the test protocol submitted by the Permittee as required in Condition C.9 (Performance Testing) and will be evaluated by IDEM, OAQ prior to the stack test. The most up to date U.S. EPA approved test method will be required for all stack tests; therefore, the test method is not specified in the permit.

On February 20, 2007, IDEM, OAQ adopted a new rule (326 IAC 8-5-6) for fuel grade ethanol production at dry mills. Muncie Ethanol will construct an ethanol production plant after April 1, 2007, will use dry mill operations, and has combined potential VOC emissions from the fermentation process, distillation process, DDGS dryers, and ethanol load-out operation greater than 25 tons per year. Therefore, the fermentation process, distillation process, DDGS dryers, and ethanol load-out operation at this source are subject to the requirements in 326 IAC 8-5-6 (Fuel Grade Ethanol Production at Dry Mills). Because the fermentation process, distillation process, DDGS dryers, and ethanol load-out operations are subject to the requirements in 326 IAC 8-5-6, these operations are not subject to the requirements of 326 IAC 8-1-6 (BACT).

The following requirements of 326 IAC 8-5-6 apply:

(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 with a wet scrubber and thermal oxidizer, and the DDGS dryers and ethanol load-out operation by a thermal oxidizer. Therefore, the following conditions apply:

(1) The VOC emissions from the fermentation process shall be controlled by a wet scrubber identified as C07.

(2) The VOC control efficiency for the wet scrubber (including the capture efficiency and absorption efficiency) shall each 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 a wet scrubber identified as C08 followed by one of either two (2) thermal oxidizers, identified as C09 and C10.

(4) The VOC control efficiency for the wet scrubber and thermal oxidizer systems (including the capture efficiency and control efficiency) shall each be at least 98%, or the VOC outlet concentration shall not exceed 10 ppmv.

(4) The VOC emissions from the DDGS Dryers and ethanol loading racks shall be collected and controlled by one of two (2) thermal oxidizers, identified as C09 and C10.

(5) The VOC control efficiency for each of the thermal oxidizers, identified as C09 and C10 (including the capture efficiency and destruction efficiency) shall be at least 98%, or the VOC outlet concentration shall not exceed 10 ppmv.

(b) Pursuant to 326 IAC 8-5-6(d), the Permittee shall determine initial compliance with the 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 control efficiency requirements by doing the following:

(1) The Permittee shall meet the following requirements for the scrubbers C07 and C08:

(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 that 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 that 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) thermal oxidizers, identified as C09 and C10:

(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 daily records of the duct pressure or fan amperage for the thermal oxidizer.

The following changes have been made to the permit as a result of this comment. The table of contents has also been updated accordingly.

D.2.5 VOC Emissions [326 IAC ~~8-1-6~~ **8-5-6**]

Pursuant to ~~326 IAC 8-1-6 (BACT)~~ **326 IAC 8-5-6 (Fuel Grade Ethanol Production at Dry Mills)**, the Permittee shall ~~control the VOC emissions from the fermentation processes using Best Available Control Technology (BACT), which has been determined to be~~ **comply with** the following:

(a) The VOC emissions from the fermentation process shall be controlled by scrubber C07.

(b) The overall VOC control efficiency for the scrubber C07 (including the capture efficiency and absorption efficiency) shall be at least 98%, or the VOC outlet concentration shall not exceed 20 ppmv.

~~(c) The total VOC emissions from the scrubber C07 stack (SV16) shall not exceed 8.26 lbs/hr.~~

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D.2.8 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11] [326 IAC 2-2] **[326 IAC 8-5-6]**

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D.2.10 Scrubber Pressure Drop and Flow Rate **[326 IAC 8-5-6]**

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D.3.5 VOC Emissions [326 IAC ~~8-1-6~~ **8-5-6**]

(a) Pursuant to ~~326 IAC 8-1-6 (BACT)~~ **326 IAC 8-5-6 (Fuel Grade Ethanol Production at Dry Mills),** the Permittee shall ~~control the VOC emissions from the distillation process with a Best Available Control Technology (BACT), which has been determined to be~~ **comply with** the following:

(1) The VOC emissions from the distillation process shall be controlled by a wet scrubber identified as C08 followed by one of ~~either~~ two (2) thermal oxidizers, identified as C09 and C10.

(2) The overall VOC control efficiency for the wet scrubber and thermal oxidizer system (including the capture efficiency and destruction efficiency) shall be at least 98%, or the VOC outlet concentration shall not exceed 10 ppmv.

(b) Pursuant to ~~326 IAC 8-1-6 (BACT)~~ **326 IAC 8-5-6 (Fuel Grade Ethanol Production at Dry Mills),** the Permittee shall ~~control the VOC emissions from the DDGS dryers and~~

~~ethanol loading racks with a Best Available Control Technology (BACT), which has been determined to be~~ **comply with** the following:

(1) The VOC emissions from the DDGS dryers (EU43 and EU48) shall be controlled by one of ~~either~~ two (2) thermal oxidizers, identified as C09 and C10.

(2) The VOC emissions from the ethanol loading racks shall be controlled by one of ~~either~~ two (2) thermal oxidizers, identified as C09 and C10.

(3) The overall VOC control efficiency for each of the thermal oxidizers, identified as C09 and C10 (including the capture efficiency and destruction efficiency) shall be at least 98%, or the VOC outlet concentration shall not exceed 10 ppmv.

~~(c) The total VOC emissions from stack SV07 shall not exceed 11.8 lbs/hr.~~

...

D.3.9 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11] [326 IAC 2-2] **[326 IAC 8-5-6]**

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, **SO_2,** and Acetaldehyde testing for the thermal oxidizer system stack (SV07) 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 condensible 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.

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D.3.11 Thermal Oxidizer Temperature **[326 IAC 8-5-6]**

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D.3.12 Parametric Monitoring **[326 IAC 8-5-6]**

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D.3.13 Scrubber Pressure Drop and Flow Rate **[326 IAC 8-5-6]**

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Comment 21:

Muncie proposed to construct its facility in Delaware County, Indiana. Delaware County is a maintenance area for the 8-hour ozone National Ambient Air Quality Standard. The U.S. EPA originally designated Delaware County only under "Subpart I" of the ozone nonattainment provisions of the Clean Air Act. However, the United States Court of Appeals for the District of Columbia Circuit just declared this illegal and is requiring the U.S. EPA to designate Delaware County pursuant to both Subpart I and II of the ozone nonattainment provisions. (See South Coast Air Quality Management District v. EPA - D.C. Cir. Dec. 22, 2006). This means that the current maintenance plan, which was established to comply with only Subpart I requirements, is inadequate.

Subpart II requires that State Implementation Plans (SIPs) include reasonable further progress provisions for reducing VOC emissions. At a minimum, this reasonable further progress provision has to reduce VOC emission by at least 15 percent from baseline within 6 years. (42 U.S.C. § 7511(b)(1)(A)). IDEM cannot issue a FESOP for Muncie Ethanol until IDEM knows whether Muncie's emissions will conflict with the reasonable further progress requirements that will ultimately be included in the Delaware County maintenance plan. It is important to note that U.S. EPA based its attainment designation on a reduction of VOC emissions of 96 tons per year (70 Fed. Reg. at 69,448). IDEM claims that Muncie Ethanol will add 97.8 tons per year of VOC to Delaware County. If a reduction of 96 tons per year is enough to bring the county into attainment, than an increase of 97.8 should be enough to bring the county back into nonattainment. Thus, the permit should not be issued. At a minimum, IDEM and US EPA should enhance Delaware

County's ozone monitoring network to include an additional ozone monitor in the area most likely to be impacted by Muncie's emissions. This is especially important during construction when there will be significant non-road mobile source emissions of NOx and VOCs. The same is true with NOx. The redesignation was based on a reduction of 114 tons per year but Muncie Ethanol will add 98.8 tons per year or approximately as much as was reduced. EPA estimated that NOx emissions would only increase by approximately 9% between 2002 and 2010 for point sources but the addition of Muncie actually represents an increase of approximately 53% by itself.

Response to Comment 21:

IDEM, OAQ has developed rules and regulations to maintain the National Ambient Air Quality Standards (NAAQS). Those rules have been reviewed with respect to their applicability to the proposed Muncie Ethanol facility, and are addressed in the current permit. Therefore, all currently applicable State and Federal rules that apply to the proposed facility are addressed in the proposed permit.

Any further changes to Indiana's SIP with regards to possible changes in the ozone attainment status of Delaware County will be reviewed upon promulgation of such changes. At the current time, IDEM, OAQ must regulate air pollution sources considering the current rules and regulations in Title 326.

No changes were made to the permit as the result of this comment.

Comment 22:

IDEM has not established that the additional traffic this facility will cause will conform with the existing Motor Vehicle Emission Budget (MVEB). The truck and rail traffic that Muncie will produce represents a significant increase in mobile source NOx and VOC emissions.

Response to Comment 22:

This permitting action is being undertaken to permit the construction and operation of the proposed Muncie Ethanol stationary source. Emissions from mobile sources with respect to the 2015 Motor Vehicle Emission Budgets for Delaware County, will be handled under Indiana's State Implementation Plan and are not part of the air permitting process.

No change was made to the permit as a result of this comment.

<u>Jim Rybarczyk Comments:</u>

During the Public Notice period, Jim Rybarczyk (referred to as the "Commenter") submitted several sets of comments on the proposed FESOP. The summary of the comments is as follows (bolded language has been added, the language with a line through it has been deleted):

Comment 1:

The commenter noted that the various materials in the application referred to different organizations/companies including Providence Group LLC; U.S. Ethanol Holdings, LLC; Geneva Capital, LLC; and Muncie Ethanol LLC. Who is the owner of this facility?

Response to Comment 1:

This facility is owned by Muncie Ethanol, LLC. David Khalilzad is the founder and chairman of Muncie Ethanol, LLC. On April 30, 2007, Muncie Ethanol, LLC submitted a revised Air Permit Application Cover Sheet and a revised OAQ General Source Data Application that clarified the information about the source owner.

No change was made to the permit as a result of this comment.

Comment 2:

The commenter noted that the permit requires that fugitive dust is not allowed to leave the property, and questioned how this would be monitored and enforced?

Response to Comment 2:

The Fugitive Dust Emissions condition and the Fugitive Particulate Matter Emissions Limitations, both located in Section C of the permit require control of fugitive dust. A fugitive dust control plan is attached to the permit as Attachment A. As part of the terms of that plan, the facility must pave all the haul roads on the site, limit travel on any unpaved surface, sweep any excess dust in the areas near the grain receiving pits and DDGS loadout spouts, visually inspect the haul roads each day and sweep or vacuum the haul roads whenever dust is visible on the road. IDEM, OAQ's compliance inspector will respond to any citizen complaints of fugitive dust leaving the facility by doing a complaint inspection. In every inspection, whether the result of a complaint or not, the IDEM, OAQ compliance inspector will monitor the facility to determine if it is complying with the plan. Should the fugitive dust control plan prove insufficient in practice, IDEM, OAQ will modify the plan as needed to prevent fugitive dust emissions.

No change was made to the permit as a result of this comment.

Comment 3:

Where are the emission estimates for these sweeping activities?

Response to Comment 3:

Sweeping activities will not result in any emissions that are not already included in the fugitive paved road emission estimates included in Appendix A of the TSD. As documented on page 8 of Appendix A of the TSD, PM emissions from paved roads (including sweeping) are estimated to be 24.7 tons per year, and PM10 emissions are estimated to be 4.81 tons per year.

No change was made to the permit as a result of this comment.

Comment 4:

In Appendix A, page 6, where is the molar mass of gasoline from? What is natural gasoline?

Response to Comment 4:

The molar mass of 66 is for Gasoline (RVP 10) from the TANKS software database. Natural gasoline has similar characteristics to gasoline, and Muncie Ethanol has not yet determined which type of gasoline will be used as the denaturant.

No change was made to the permit as a result of this comment.

Comment 5:

In Appendix A, page 6, how is the temperature given as 517.72 degrees? Where did the equation to calculate loading losses come from?

Response to Comment 5:

The temperature is in terms of degrees Rankine, which equates to degrees Fahrenheit + 460. The equation for calculating loading losses is from AP-42, Section 5.2. Section 5.2 of AP-42 may be found online at:

http://www.epa.gov/ttn/chief/ap42/ch05/final/c05s02.pdf

No change was made to the permit as a result of this comment.

Comment 6:

The commenter asked where the equation on page 29 of the permit came from (Condition D.1.5) and how the emissions estimates in the table will be complied with.

Response to Comment 6:

The equation in Condition D.1.5 comes from the allowable particulate rule found in 326 IAC 6-3-2. The maximum allowable emissions shown in the permit were calculated using this equation. Note that the emission limits in Condition D.1.4(a) ensure that emissions will not exceed those allowed under 326 IAC 6-3-2.

No change was made to the permit as a result of this comment.

Comment 7:

With all the ethanol plants up and running around the country, why are artificial AP-42 modeling values being used instead?

Response to Comment 7:

The applicant is required to use the best available data for estimating emissions. IDEM has reviewed the emissions estimates in the application for accuracy, and has approved or corrected the estimates to be consistent with IDEM methodology and approach. Emissions are based on a mix of AP-42 emission factors, emission estimation equations, and manufacturer's emissions data. AP-42 emission factors are typically developed using stack test data from a group of similar sources, with emission factors developed and ranked considering both the quantity and quality of background testing data. All AP-42 emissions factors have been reviewed approved by the United States Environmental Protection Agency. In addition, testing is required for many of these units which will verify the emission estimates. Emission sources subject to testing include all the grain handling baghouses, the fermentation scrubber, the thermal oxidizer stack, and the natural gas-fired boilers. These units account for the majority of emissions of all pollutants emitted at the proposed facility.

No change was made to the permit as a result of this comment.

Comment 8:

What HAPs are emitted from the boilers? No data is presented on boiler HAPs. Is there any testing required of the natural gas? What volume of natural gas will be burned in one year?

Response to Comment 8:

The Hazardous Air Pollutants (HAPs) emission estimates from the boilers are presented on page 4 of Appendix A of the TSD. The HAP emission estimates were calculated using emission factors from U.S. EPA's AP-42, Chapter 1.4. Section 1.4 of AP-42 may be found at http://www.epa.gov/ttn/chief/ap42/ch01/final/c01s04.pdf on the internet. All AP-42 emissions factors have been reviewed and approved by the United States Environmental Protection Agency. Since the HAPs emission estimates are based on emission factors that are considered very reliable, no stack testing for HAPs is required. However, stack testing is required for nitrogen oxides (NOx), carbon monoxide (CO), sulfur dioxide (SO_2), particulate matter (PM), particulate matter less than ten (10) microns in aerodynamic diameter (PM_{10}), and volatile organic compounds (VOCs). The natural gas utilized at this facility will be "pipeline quality" which has standard quality specifications, therefore, there is no need to require the source to test the

properties of the natural gas used. If operated at full capacity, the boilers could potentially burn 3,174.2 million cubic feet of natural gas per year.

No change was made to the permit as a result of this comment.

Comment 9:

Why are PM emissions from the DDGS handling and loadout only controlled to 90% efficiency, and not to 98% or 99% as the rest of the facility?

Response to Comment 9:

Particulate matter (PM) emissions from the DDGS handling and loadout operations are controlled by a baghouse, with an estimated control efficiency of 99%. However, IDEM, OAQ estimates that only 90% of the emissions generated from these operations can be physically collected by the control device. The remainder is emitted as fugitive emissions. IDEM does not have the authority to require capture and control efficiencies beyond what is necessary to comply with all applicable rules, such as Prevention of Significant Deterioration (PSD) limits in 326 Indiana Administrative Code 2-2-1 and Federally Enforceable State Operating Permit (FESOP) limits set out in 326 Indiana Administrative Code 2-8-1.

No change was made to the permit as a result of this comment.

Comment 10:

The commenter notes that the market for DDGS is uncertain and asks what emissions will occur from decomposition of the DDGS, and how will those emissions be affected by temperature variations? What controls will be placed on DDGS storage?

Response to Comment 10:

There are no emission factors that suggest storage of DDGS results in VOC emissions, and it is assumed that all the VOC's are driven out of the DGS during the high-temperature drying process. Therefore, ambient temperature variations would have no effect on VOC emissions from DDGS storage. The DDGS handling and loadout operations will be controlled by a baghouse, and PM and PM10 emissions from DDGS handling and loading are based on the annual throughput of DDGS, which is limited to 360,487 tons per twelve (12) consecutive month period. There are no other controls on DDGS storage.

No change was made to the permit as a result of this comment.

Comment 11:

The commenter questioned why there is no mention of wastewater treatment in the proposed permit?

Response to Comment 11:

This facility has been designed with a closed-loop system, such that no wastewater treatment is necessary. Other ethanol facilities employ a different design, which include the use of an anaerobic digester. For Muncie Ethanol, make-up water is added to the system to replace water lost through evaporation, but there will not be any wastewater treatment or wastewater discharge from the ethanol process.

No change was made to the permit as a result of this comment.

Comment 12:

The permit application materials mention CO_2 recovery, what is that for and why is it not found in the draft permit?

Response to Comment 12:

The facility will not be performing any CO_2 recovery. The fermentation scrubber is identified in the application as "CO_2 scrubber", but this does not involve any collection of CO_2. If Muncie Ethanol adds a CO_2 collection and recovery system, they will need to apply for and obtain the appropriate permit approvals prior to construction and operation of the new equipment.

No change was made to the permit as a result of this comment.

Comment 13:

The commenter noted that there would be significant emissions from the engines in the trucks and railcars coming onto the site. Emissions from these trucks and railcars should be addressed, and any health effects addressed. The commenter also requested that U.S. EPA test each truck for emissions, and that the emissions be controlled while the vehicles are on-site.

Response to Comment 13

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 has no authority to regulate such emissions. Mobile sources are specifically excluded from the definition of "source" in 326 Indiana Administrative Code 1-2-73. More information about the regulation of mobile sources by the U.S. EPA can be found at http://www.epa.gov/otaq/ on the internet, the webpage for the Office of Transportation and Air Quality.

No change was made to the permit as a result of this comment.

Comment 14:

The commenter expressed concern that the maintenance attainment status of Delaware County would be in jeopardy as a result of emissions from the proposed facility, and regardless of that, that the current background information on ozone concentration in this area is suspect. In addition, the commenter requested that air monitors be set up in Shideler before the facility is permitted, and felt that the ambient air quality in Shideler at ground level will be far beyond any standards. The commenter noted that the local meteorological conditions, combined with the increase in emissions that will result from the proposed facility, will cause Delaware County to become nonattainment for ozone.

Response to Comment 14:

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 (PM2.5), nitrogen oxides (NOX) 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 all criteria pollutants 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 federal Clean Air Act requires the United States Environmental Protection Agency (U.S. EPA) to determine whether the ambient air in any area of the United States fails to meet any of the National Ambient Air Quality Standards (NAAQS). Any area that fails to meet one or more of the NAAQS will be designated as in "nonattainment" for that pollutant. Large air pollution sources in a nonattainment area are subject to additional regulations and U.S. EPA may require that additional steps be taken that will result in the area meeting the NAAQS.

On April 30, 2004, Delaware County was designated as nonattainment for the 8-hour ozone Standard. This designation was based on ground level ozone data collected by IDEM, OAQ in Delaware County for a three year period from 2001 through 2003. At that time it was already apparent from the continued air monitoring that the air quality was improving. For the years 2002 through 2004, monitoring data showed that the area met the NAAQS for ozone.

On August 25, 2005, IDEM submitted a request to the U.S. EPA to redesignate Delaware County to attainment of the 8-hour ozone National Ambient Air Quality Standard (NAAQS) as well as a request that U.S. EPA approve a revision to an Indiana State Implementation Plan (SIP) to establish a 10-year ozone maintenance plan for Delaware County. U.S. EPA reviewed IDEM's request, including a review of all the monitoring data. U.S. EPA approved the redesignation of the Delaware County into attainment for the NAAQS for ozone, effective January 3, 2006. U.S. EPA published a notice of its intent to redesignate the area into attainment in the Federal Register on November 16th, 2005. This notice is available at http://a257.g.akamaitech.net/7/257/2422/01jan20051800/edocket.access.gpo.gov/2005/05-22696.htm on the internet.

IDEM, OAQ has no indication that the Muncie Ethanol plant will cause or contribute to a violation of the NAAQS for ozone. The ozone related emissions from the plant are limited by the terms of the permit to a relatively low level, less than 100 tons per year for volatile organic compounds (VOCs) and nitrogen oxides (NOx). VOCs and NOx are the two precursor pollutants for ozone formation. Ground level ozone forms in the presence of sunlight on warm days when there is little or no wind. Information about current and expected air pollution levels is available on IDEM's SmogWatch site at http://www.in.gov/apps/idem/smog/ on the internet. The site is designed to provide Hoosiers with an easy-to-read forecast of air quality in their communities. The site provides information about ground-level ozone and particulate matter forecasts.

IDEM, OAQ conducts ambient air monitoring for ozone, course particulate matter, fine particulate matter, sulfur dioxide, nitrogen oxides, carbon monoxide, lead and air toxics at locations around Indiana. Information and maps of these monitoring sites is located at http://www.in.gov/idem/programs/air/amb/index.html on the internet. IDEM, OAQ has been monitoring the ambient air in Delaware County since 1999. The data collected from the current monitor, located at the Albany Elementary School, is available at http://www.in.gov/idem/programs/air/amb/data/ozone/datasite/albany.html on the internet. The placement of air monitors is done by IDEM, OAQ's Monitoring Branch. The Monitoring Branch Chief is Richard Zeiler. Mr. Zeiler can be reached at (800) 451-6027, extension 308-3238 or directly at (317) 308-3238, or at dzeiler@idem.in.gov by e-mail. A copy of the commenter's request for additional monitors has been forwarded to Mr. Zeiler.

No changes were made to the permit as the result of this comment.

Comment 15:

The commenter asks if the scrubber, the baghouses, and the thermal oxidizers are the main emissions control devices at this facility.

Response to Comment 15:

Yes, the scrubber, the baghouses, and the thermal oxidizers are the main emissions control devices at this facility.

No change was made to the permit as a result of this comment.

Comment 16:

The commenter questions the effectiveness of the malfunction provisions in the permit for the control devices mentioned in Comment 15 (such as those for the distillation scrubber found in Condition D.3.14), and what emissions will be released during emergency situations.

Response to Comment 16:

IDEM has included provisions in the permit, such as those found in Conditions D.2.11 and D.3.14 to address the steps the source must take when a malfunction occurs in an air pollution emissions scrubber. As noted in those conditions, the failed equipment and the associated process must be shut down immediately until the equipment has been repaired or replaced. Operations could only continue if the situation qualifies as an emergency and, in addition, only under exceptional circumstances.

Pursuant to 326 Indiana Administrative Code 2-7-1(12), an emergency is defined as follows:

> "any situation, including acts of God, arising from sudden and reasonably unforeseeable events beyond the reasonable control of the source, which:
>
> (A) requires immediate corrective action to restore normal operation; and
>
> (B) causes the source to exceed an emission limit under a Part 70 permit due to unavoidable increases in emissions attributable to the emergency.
>
> An emergency shall not include noncompliance to the extent caused by improperly designed equipment, failure to implement an adequate preventive maintenance plan, careless or improper operation, or operator error."

The source many continue operations during an emergency only if the source takes all reasonable steps to minimize levels of emissions that could exceed any emission limit or other requirement of the permit and to resolve the emergency situation. In any enforcement proceeding against the source for a permit violation, the burden will always be on the source to prove that a permit violation was caused by an emergency and that the source took all reasonable steps to correct the emergency and minimize emissions.

An emergency is an unforeseeable event, so there is no way to estimate what emissions will be released during an emergency. The source is required to notify IDEM, OAQ of any emergency that lasts for one hour or more, as well as note any emergency, no matter the duration, in its log of operations or other records. IDEM, OAQ responds to every notification of an emergency.

In condition B.13 and in each of the D section of the permit, IDEM, OAQ requires that the source prepare and maintain Preventive Maintenance Plans for all its process equipment and control devices. The only equipment that is not required to have a preventive maintenance plan is the emergency generators that operate to provide electricity in the event of a failure of the electrical utility. Proper preventive maintenance and source operation are expected to keep the source in compliance with its permit and prevent malfunctions and any need to operate during any emergency. IDEM, OAQ can require any source to revise and improve its preventive maintenance plans in response to an emergency.

No change was made to the permit as a result of this comment.

Comment 17:

The commenter asked IDEM, OAQ to describe the purpose of visible emissions notations, the criteria for normal or abnormal emissions, and how the visible emissions observers are trained. The commenter also notes that this inexact method of observing emissions weakens the permit.

Response to Comment 17:

The visible emission notations are used to ensure compliance with the permit limits for particulate matter for those emission units that are controlled by a baghouse or a bin filter. The baghouses use air flow to bring particulate matter emissions into the baghouse structure and through filter bags. The bags capture almost all the particulate matter. The bin filters capture particulate matter as air passes through the filter and out of the bin. The source is required to test each baghouse and bin filter to make sure they are operating properly. This test is done between 60 and 180 days of the source's initial startup. If IDEM, OAQ finds that the test shows that the source is in compliance, follow up tests are required at least every five years. Before the initial test and in between tests, IDEM, OAQ requires the source to conduct preventive maintenance and parametric monitoring to ensure that the baghouses and bin filters are operating properly. Parametric monitoring has two components. The first is a requirement that the source monitors the pressure drops across the baghouses and bin filters on a daily basis. The second is that the source makes daily visible emission notations of the baghouse and bin filter exhausts, noting whether the exhaust's emissions look "normal" or abnormal".

The visible emission notation requirement is designed as a trigger for the source to perform some corrective action on the facility if visible emissions are abnormal, which helps ensure continuous compliance with emission limitations. As the visible emissions condition states, 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. The employee does not need to be trained as a certified opacity reader, nor does the employee's training need to be done by a certified opacity reader.

The purpose of specifying that a trained employee perform the visible emissions notations is to make sure that the employee will know the difference between "normal" and "abnormal" visible emissions from the particular process. This reading does not need to be an exact determination of the opacity of the emissions. When a baghouse or bin filter has failed, the resulting change in the visible emission is quite noticeable as being different from the normal emission from that device. This "abnormal" reading is a prompt for the source to take responsive action to put the device back into proper operation. It is a permit violation if the source fails to take such action.

No change was made to the permit as a result of this comment.

Comment 18:

The commenter expressed concern that the nearby Shideler Grain elevator should be considered one source with the proposed Muncie Ethanol facility.

Response to Comment 18:

The Muncie Ethanol plant will be located about 650 feet from Shideler Grain Company. IDEM, OAQ examined whether these two plants should be considered one "major source" as defined at 326 Indiana Administrative Code (IAC) 2-7-1(23). In order for these two plants to be considered one major source, they must meet all three of the following criteria:

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

The two plants are not owned by the same company nor does either plant appear to be under the common control of the other or a third party. The two plants are located on adjacent properties, as they are separated by only 650 feet.

The two plants do not have the same two-digit Standard Industrial Classification (SIC) Code. The Muncie Ethanol plant is primarily engaged in the production of ethanol. It has the two-digit SIC Code of 28 for Chemicals and Allied Products. Shideler Grain is primarily engaged in grain wholesaling. It has the two-digit SIC Code of 51 for Wholesale Trade-non-durable Goods.

Neither plant serves as a support facility for the other. A support facility is a plant that dedicates at least 50% of its output to another plant. Neither plant has made any pledge, agreement or contract to provide any support to the other. If Shideler Grain, at some point in the future, does send 50% or more of its total output to the Muncie Ethanol plant, IDEM, OAQ will reexamine the relationship between the two sources.

IDEM, OAQ finds that the Muncie Ethanol plant and Shideler Grain do not meet all the criteria of 326 IAC 2-7-1(23). They are not one major source and Muncie Ethanol will be permitted as a separate source.

No change was made to the permit as a result of this comment.

Comment 19:

The commenter noted that the BACT Appendix included several examples of control efficiencies of 99%, exceeding the 98% required in the permit.

Response to Comment 19:

On February 20, 2007, IDEM, OAQ adopted a new rule (326 IAC 8-5-6) for fuel grade ethanol production at dry mills. Muncie Ethanol will construct an ethanol production plant after April 1, 2007, will use dry mill operations, and has combined potential VOC emissions from the fermentation process, distillation process, DDGS dryers, and ethanol load-out operation greater than 25 tons per year. Therefore, the fermentation process, distillation process, DDGS dryers, and ethanol load-out operation at this source are subject to the requirements in 326 IAC 8-5-6 (Fuel Grade Ethanol Production at Dry Mills). Because the fermentation process, distillation process, DDGS dryers, and ethanol load-out operations are subject to the requirements in 326 IAC 8-5-6, these operations are not subject to the requirements of 326 IAC 8-1-6 (BACT).

See response to Berger and Berger's comment #20 for full details on the requirements of 326 IAC 8-5-6 as applicable to Muncie Ethanol.

Comment 20:

The commenter expressed concerns that the equipment leak provisions found in Section E.1 of the proposed permit were insufficient to protect the health and safety of the surrounding population.

Response to Comment 20:

Section E.1 implements the provisions of U.S. EPA's Standards of Performance for Equipment Leaks in the Synthetic Organic Chemicals Manufacturing Industry. The draft permit fully incorporates all applicable requirements from this federal rule, and IDEM does not have any authority to impose any additional requirements. These regulations were developed by the U.S. EPA and adopted by the State of Indiana as the best technical standards to find and eliminate equipment leaks, thereby protecting human health and promoting the safe operation of all affected industries. There is no evidence that these standards are insufficient.

No change was made to the permit as a result of this comment.

Comment 21:

In addition to the commenter's concerns on the equipment leak provisions, the commenter also noted that the emergency provisions of Section B.14 of the draft permit endanger the long-term health and safety of surrounding residents by allowing the facility to continue to operate to prevent the "…loss of product or raw material of substantial economic value." Specifically, the commenter asks who makes the judgment of what constitutes a substantial loss of product or raw material.

Response to Comment 21:

As stated in the Response to Comment 16, above, a source may continue operations during an emergency only under limited circumstances and only if the source takes all reasonable steps to minimize the levels of emissions that could exceed any emission limit or other requirement of the permit and to resolve the emergency situation. In any enforcement proceeding against the source for a permit violation, the burden will always be on the source to prove that a permit violation was caused by an emergency, that the source took all reasonable steps to correct the emergency and minimize emissions, and that continued operation was necessary to prevent a substantial economic loss. If IDEM did not agree that such a continued operation was necessary to prevent such a loss, IDEM would continue with the enforcement action against the source for the permit violations. It would then be up to an Environmental Law Judge in Indiana's Office of Environmental Adjudication to make a judgment regarding this issue.

No change was made to the permit as a result of this comment.

Comment 22:

The commenter asks for a description of how the water scrubber system works, and where the water comes from and ends up. In addition, the commenter asks if there are any pollutants contained in any steam plumes released from the facility, and how the process water at this facility is handled.

Response to Comment 22:

A wet scrubber is an absorption system in which the waste stream is dissolved in a solvent by passing it through a medium containing the solvent. Water is the most commonly used solvent in wet scrubbers, and is the only solvent used in the scrubber at the proposed Muncie Ethanol facility.

The facility did not identify where their water will come from as part of the air permit application, and they are not required to do so under the requirements of Title 326 of the Indiana Administrative Code.

Any emissions of regulated air pollutants contained in any steam exhausts are quantified in Appendix A of the TSD (for example, VOC from the fermentation scrubber exhaust). Muncie Ethanol will use a closed-loop water system, so no water is released from this facility.

No change was made to the permit as a result of this comment.

Comment 23:

What type of fuel will be used in the emergency generators? Shouldn't the fuel be restricted to a better grade of fuel, or even biodiesel?

Response to Comment 23:

Diesel fuel will be burned in the emergency generators. IDEM does not have the authority to require the use of other types of fuels in the generators. There are restrictions in the permit that limit the hours of operation of each emergency generator to less than 100 hours per year.

No change was made to the permit as a result of this comment.

Comment 24:

Are the burners in the boilers low NOx burners? If not, why not?

Response to Comment 24:

IDEM does not have the authority to require the use of low NOx burners. The applicant will be required to test the boilers for NOx emissions to verify that the boilers comply with all applicable state and federal air quality requirements as delineated in the draft permit.

No change was made to the permit as a result of this comment.

Comment 25:

The permit application mentions anhydrous ammonia, propane, sulfuric acid, and sodium hydroxide storage tanks. Why aren't these found in the draft permit?

Response to Comment 25:

These are small tanks (i.e., two (2) pound propane tanks) used for maintenance activities. There are no expected emissions from these proposed storage tanks, and there are no requirements in any state or federal air quality regulations that would apply to these tanks.

No change was made to the permit as a result of this comment.

Comment 26:

The commenter questioned why the distillation processes at this facility are excluded from the applicability of NSPS, Subpart NNN (New Source Performance Standards for Volatile Organic Liquid Storage Vessels VOC Emissions from Synthetic Organic Chemical Manufacturing Industry. The commenter felt that the distillation processes should be subject to the rule, and questioned the determination made by George Czerniak as cited in the TSD.

Response to Comment 26:

George Czerniak made this determination as Chief of U.S. EPA's Air Enforcement and Compliance Assurance Branch, Region 5. In making this determination, Mr. Czerniak noted that the background documentation created during the development of both the NSPS Subparts RRR and NNN standards indicates that the creation of ethanol by fermentation (biological synthesis) was excluded from the scope of both NSPS standards. This determination, in a letter dated March 12, 2004, addressed to Max Felty, Vice President of Operations, Liquid Resources of Ohio, LLC, 909 West Smith Road, Medina, Ohio 44256, may be found on the internet at:

http://cfpub.epa.gov/adi/index.cfm?CFID=403444&CFTOKEN=81568332&jsessionid=6030f67fe7976421b173TR60306630c230&requesttimeout=180

No change was made to the permit as a result of this comment.

Comment 27:

The commenter noted that there will be a 213,673 gallon gasoline storage tank on-site, and questioned why this facility is not classified as a "Bulk Gasoline Terminal" as it is define by 326 Indiana Administrative Code 1-2-8 and subject to requirements for Bulk Gasoline Terminals.

Response to Comment 27:

This facility does not meet the definition of a Bulk Gasoline Terminal as it does not deliver gasoline to bulk gasoline plants or to commercial or retail accounts. The gasoline received by Muncie Ethanol is incorporated into their product to produce and deliver denatured ethanol. Therefore, this is not a Bulk Gasoline Terminal as defined in 326 IAC 1-2-8.

No change was made to the permit as a result of this comment.

Comment 28:

The commenter noted that the permit application indicates the design throughput of this facility is 100 million gallons per year, page 98 of the draft permit indicates it is 110 million gallons per year, and that the loadout limit is 115.5 million gallons per year. He questions which figure is correct.

Response to Comment 28:

This facility is designed to produce 110 million gallons per year of undenatured ethanol, which is added to 5.5 millions gallons per year of natural gasoline to produce 115.5 million gallons per year of denatured ethanol. All calculations reflect this throughput. IDEM notes that the application does have introductory text which describes the facility as having a design capacity of 100 million gallons of undenatured ethanol, but all calculations are based on a throughput of 115.5 million gallons per year of denatured ethanol.

No change was made to the permit as a result of this comment.

Comment 29:

The commenter asked what types of yeasts and enzymes are used in this process, at what quantities, how they are handled, and what happens when they are released into the environment.

Response to Comment 29:

Yeast and enzymes are not regulated air pollutants, and therefore, the applicant is not required to include any information on yeast or enzymes in their application. The extent to which these materials may be released as a particulate is unknown, but all particulate emissions have been quantified and limited where necessary, and yeast and/or enzymes would not be specified as individual pollutants.

No change was made to the permit as a result of this comment.

Comment 30:

The commenter noted that the Clean Air Act requires protection of public health and welfare, as well as economic values and personal comfort and well-being, and asks where IDEM has taken this into consideration when drafting this permit.

Response to Comment 30:

The rules and regulations incorporated into the permit are found in Title 326 of the Indiana Administrative Code (IAC). These rules and regulations are discussed in the TSD and included as federally enforceable permit terms and conditions in the permit. The rules in Title 326 of the IAC

were adopted by the Indiana Air Pollution Control Board (or its predecessor) pursuant to the statutory authority granted by the Indiana legislature in the Indiana Code (IC). This grant of rule making authority is found principally at IC 13-15-2-1 as well as in other statutory provisions. The Indiana legislature has not adopted the federal Clean Air Act. Indiana law does set out the Indiana's environmental policy in IC 13-12-3-1, which states:

> The purpose of this title is:
> (1) to provide for evolving polices for comprehensive environmental development and control on a statewide basis;
> (2) to unify, coordinate, and implement programs to provide for the most beneficial use of the resources of Indiana, and
> (3) to preserve, protect, and enhance the quality of the environment so that, to the extent possible, future generations will be ensured clean air, clean water, and a healthful environment.

No change was made to the permit as a result of this comment.

Comment 31:

The commenter noted that Terry Murphy, a Delaware County employee, participated in the April 9th public meeting, giving inaccurate statements regarding the public notice period, and subsequently has been on WLBC radio asking citizens to send favorable comments to IDEM.

Response to Comment 31:

IDEM published all appropriate information regarding the public notice period for the draft permit in the Muncie Star Press newspaper on March 15, 2007, including how to provide comments, and who to contact with questions on the draft permit. On March 12, 2007, IDEM mailed the same information directly to every person on IDEM's mailing list. A notice of the April 9, 2007 public meeting was also published in the Muncie Star Press newspaper on April 4, 2007. That notice repeated the information on how to provide comments, and who to contact with questions on the draft permit. On April 2, 2007, IDEM mailed the same information directly to every person on IDEM's mailing list. Information regarding the public meeting was also available on IDEM's website at www.in.gov/idem on the internet. At the April 9, 2007 public meeting IDEM repeated the information on how to make written comments during the public comment period. Information regarding the public comment period and how to make written comments has was also included with the draft permit documents available at the Maring-Hunt Library, 2005 High Street, Muncie, throughout the public comment period, as well as at www.in.gov/idem/permits/air/pending.html on the internet. The public comment period ended on April 16, 2007. IDEM is not responsible for controlling public discussion or correcting any information provided by non-IDEM personnel.

No change was made to the permit as a result of this comment.

<u>Connie Geesaman Comments:</u>

On April 14, 2007, Connie Geesaman submitted comments on the proposed FESOP. The summary of the comments is as follows (bolded language has been added, the language with a line through it has been deleted):

Comment 1:

How many permits does IDEM and specifically the Office of Air Quality receive per year? How many are approved? How many are denied? Have any ever been denied? How many operations has IDEM shut down in the past 2 years because of environmental concerns? How many CAFO's have been shut down? How many ethanol refinery permits have been received and processed by IDEM? How many have been denied by IDEM? How many ethanol refineries will IDEM permit and how close together, before they overwhelm the air quality of Central

Indiana? Does IDEM consider the synergistic relationship between all of these emissions, and the effects on the ozone alerts? Why are all of these ethanol plants being approved?

Response to Comment 1:

During the period from April 26, 2002, to April 26, 2007 IDEM received approximately 5,729 air permit applications, or slightly over 1,100 per year. During this timeframe, IDEM denied 16 permits and issued 6,434 permits. IDEM has received 32 applications for ethanol facilities, and to date has issued 16 permits to these facilities. IDEM has never denied an application for an ethanol plant. One confined animal feeding operation (CAFO) has been shut down for environmental reasons relating to water quality issues.

As stated in the Response to Comment 14 on page 27, above, 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 (PM2.5), nitrogen oxides (NOX) 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 all criteria pollutants 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.

IDEM, OAQ has no indication that the Muncie Ethanol plant, even in combination with the other air pollution control permits that IDEM has issued, will cause or contribute to a violation of any NAAQS. The emissions from the plant are limited by the terms of the permit to a relatively low level, less than 100 tons per year for all criteria pollutants. Information about current and expected air pollution levels is available on IDEM's SmogWatch site at http://www.in.gov/apps/idem/smog/ on the internet. The site is designed to provide Hoosiers with an easy-to-read forecast of air quality in their communities. The site provides information about ground-level ozone and particulate matter forecasts.

No change was made to the permit as a result of this comment.

Marita Fields Comments:

On April 11, 2007, Marita Fields submitted comments on the proposed FESOP. The summary of the comments is as follows:

Comment 1:

The commenter questioned whether each permit is issued based on the assumption that the air is clean before the new project is in place and working.

Response to Comment 1:

IDEM, OAQ does not issue air pollution control permits based on any assumption that the ambient air is clean. The ambient air in Delaware County is in compliance with all the National Ambient Air Quality Standards (NAAQS), as described in the response to Connie Geesaman's comment, above. IDEM, OAQ issues air pollution control permits when the applicant has demonstrated that it will be able to comply with all applicable air pollution control regulations and when the emissions from the proposed source will not cause or contribute to a violation of any National Ambient Air Quality Standard. IDEM, OAQ will not issue a permit if it has any reason to believe that the air pollution emissions from the plant would pose a threat to human health or the environment.

Dale Foster Comments:

On April 9, 2007, Dale Foster submitted comments on the proposed FESOP. The summary of the comments is as follows:

Comment 1:

How many stacks are associated with this plant? What is opacity? What is opacity measured in? Is this plant going to use opacity monitoring equipment or a Continuous Emissions Monitor, or U.S. EPA Method 9? What is EPA Method 9 in terms of opacity? What is a smoke reader? Who certifies smoke readers, IDEM or U.S. EPA? How often do smoke readers have to be recertified? How long does it take for an average smoke reader to come up with opacity for a stack? Why isn't IDEM making plants use Continuous Emissions Monitors or opacity monitoring equipment?

Response to Comment 1:

There are 16 stacks associated with the proposed ethanol facility. Opacity is a condition in which material is partially or wholly impervious to rays of light. Opacity causes obstruction of observer's view and is measured in the percentage of that obstruction. U.S. EPA Method 9 is a set of parameters used to make a visible emission evaluation that results in an opacity reading. In order to use Method 9, an individual must go through an EPA Approved Visible Emission Evaluation (Smoke School) Training course. Smoke schools provide training, testing and certification of each successful smoke reader. Smoke readers must be recertified every six months. Smoke readings are done in a series of 6 minute readings and it takes about half an hour to complete. The source may use U.S. EPA Method 9 to verify compliance with the requirements under 40 CFR, Subpart Dc.

There are no rules or regulations that require this source to use opacity monitoring equipment or Continuous Emissions Monitors and none are required by the permit.

Julie Alexander Comments:

On April 10, 2007, Julie Alexander submitted comments on the proposed FESOP. The summary of the comments is as follows:

Comment 1:

The commenter noted that given the Easter Holiday schedule at the Maring-Hunt library, there were only a few days available between notice of the public meeting (April 3, 2007) and the public meeting (April 9, 2007). The commenter feels this timeframe was insufficient to allow review of the permit application materials.

Response to Comment 1:

The participants at the public meeting were not required to review the draft permit documents prior to the meeting. During the meeting, which lasted several hours, IDEM described the how the permit conditions will limit the air pollution emissions from the plant, how IDEM determines compliance with the permit limits, and how the source is required to conduct compliance monitoring, record keeping and reporting. IDEM responded to every question and comment made during the meeting. The meeting did not end until every person had an unrestricted opportunity to make comments and ask questions, without any time limit. In addition, there was ample time to review the draft permit documents after the April 9, 2007 public meeting and still provide written comments to IDEM by the end of the public comment period on April 16, 2007.

The notice of the public meeting was not the first notice about the public notice period for review of the draft permit documents. IDEM published all appropriate information regarding the public notice period for the draft permit in the Muncie Star Press newspaper on March 15, 2007,

including how to provide comments, and who to contact with questions on the draft permit. On March 12, 2007, IDEM mailed the same information directly to every person on IDEM's mailing list. A notice of the April 9, 2007 public meeting was also published in the Muncie Star Press newspaper on April 4, 2007. That notice repeated the information on how to provide comments, and who to contact with questions on the draft permit. On April 2, 2007, IDEM mailed the same information directly to every person on IDEM's mailing list. Information regarding the public meeting was also available on IDEM's website at www.in.gov/idem on the internet. At the April 9, 2007 public meeting IDEM repeated the information on how to make written comments during the public comment period. Information regarding the public comment period and how to make written comments has was also included with the draft permit documents available at the Maring-Hunt Library, 2005 High Street, Muncie, throughout the public comment period, as well as at www.in.gov/idem/permits/air/pending.html on the internet. The public comment period ended on April 16, 2007.

No change was made to the permit as a result of this comment.

Comment 2:

How many requests were received for a public meeting? How many requests were received for a public hearing? Are we losing our right to a public hearing?

Response to Comment 2:

IDEM received 47 requests for a public hearing. There were no requests for a public meeting. 326 Indiana Administrative Code 2-8-13(c)(4) states that "(t)here shall be an opportunity for a public hearing if deemed necessary by the commissioner." IDEM reviewed the requests for a public hearing but did not deem that a public hearing was necessary. IDEM did feel that a public meeting would be helpful to explain the air pollution control permit process and discuss issues of air quality. That public meeting was held on April 9, 2007. The meeting was attended by over 100 people and lasted for nearly five (5) hours. IDEM received additional requests for a public hearing during and after the public meeting. IDEM reviewed these additional requests but did not deem that a public hearing was necessary.

Comment 3:

What is natural gasoline?

Response to Comment 3:

Natural gasoline is wet gas recovered from the oil and gas fields, also known as casinghead gas, and is chiefly a mixture of methane, ethane, and the volatile hydrocarbons propane, butane, pentane, hexane, and heptane.

No change was made to the permit as a result of this comment.

<u>Other Public Comments:</u>

On April 14, 2007, Barbara and Rochard Haggard, Marita Fields, Jane Burt, Kathie Burt, Julie Burt, Connie Gessaman, Gregg Burt, Carol Burt, John Meanes, Gary Alexander, Jim Hall, and Kathy Hall, (collectively referred to as the "Commenters") submitted comments on the proposed FESOP. The summary of the comments is as follows:

Comment 1, Air Quality Issues:

The commenters are concerned that the facility is being located too close to a populated area and that the public welfare is not being protected. The commenters are uncertain as to the current air quality; the commenters feel that the emissions of toxic air pollutants would have uncertain health effects. The commenters are concerned that dust from the facility would settle in their homes. The

commenters are concerned that the surrounding roads will need to be widened and the increase in truck traffic will increase emissions. The commenters are concerned about the emissions that will occur from decomposition of the DDGS.

Response to Comment 1:

The air pollution control permit will ensure that the construction and operation of all equipment at the Muncie Ethanol facility will comply with all state and federal air quality rules and regulations. OAQ and the U.S. EPA have established rules and regulations to protect air quality and the health of Indiana citizens based on current knowledge of air pollution impacts. As applicable to the proposed facility, these rules and regulations have been incorporated into the proposed permit. These rules are designed to protect human health and the environment. The National Ambient Air Quality Standards, as described above in the Response to Comment 14 on page 27, are put in place to protect everyone, including those persons living closest to a source of air pollution. The air pollution emissions from this plant, as regulated by the permit, will not pose any threat to human health or the environment. The fugitive dust control plan and the emission limits in the permit are designed to prevent any dust from the source from entering any home.

IDEM has no authority to regulate truck traffic on surrounding roads, road widening, or to regulate the dust or engine emissions from trucks as they travel on public roads.

The DDGS handling and loadout operations will be controlled by a baghouse, and PM and PM_{10} emissions from DDGS handling and loading are based on the annual throughput of DDGS, which is limited to 360,487 tons per twelve (12) consecutive month period. All the volatile organic compounds (VOCs) are driven out of the DDGS during the high-temperature drying process.

No change was made to the permit as a result of this comment.

Comment 2, Quality of Life and Property Value Issues:

The commenters are concerned that noise from the proposed facility would affect the quality of life for those living near the plant and ask how noise will be measured. The commenters also stated that their property values will be affected.

Response to Comment 2:

IDEM has no authority to regulate noise. IDEM has no authority to consider or regulate the impact that a source will have on property values.

Comment 3, Drinking Water Contamination:

The commenters are concerned that their drinking water may be contaminated.

Response to Comment 3:

IDEM's Office of Water Quality, Ground Water Section, protects and assesses Indiana's source water. The Ground Water Section provides guidance for public water systems in establishing Wellhead Protection Plans, Source Water Assessment Plans, as well as providing guidance to private well owners. More information is available at IDEM's website at http://www.in.gov/idem/programs/water/swp/index.html on the internet or by contacting IDEM at (800) 451-6027 and asking for the Ground Water Section.

Any leakage, dumping, drainage, seepage or discharge of any petroleum, hazardous substance or objectionable substance onto or into the ground or surface waters should be immediately reported to IDEM's Office of Emergency Response, by telephone, at 1-888-233-7745. This spill reporting number is answered 24 hours a day, every day.

Comment 4, Yeast:

One commenter questioned what type of yeast was used, and what happens when it is released into the environment.

Response to Comment 4:

IDEM's authority to regulate air pollutants is limited to those pollutants defined in 326 Indiana Administrative Code 2. IDEM has no authority to regulate yeast directly. All regulate air pollutants, including those caused by the fermentation process, have been accounted for in IDEM's emission estimates.

Comment 5, Cooling Tower:

The commenters asked if the proposed cooling tower water have any additives in it like Chromium and want to know what is being emitted to the air from this cooling tower.

Response to Comment 5:

The proposed cooling tower water may contain a small amount of additives dependent upon the water source, but chromium will not be used. As documented in Appendix A of the Technical Support Document, the cooling tower has a potential to emit PM and PM_{10} of 8.22 tons per year.

No changes were made to the permit as the result of these comments.

Comment 6:

During the Public Notice Period for the proposed Muncie Ethanol facility, the following persons requested that IDEM approve the Muncie Ethanol permit without further delay.

Thomas R. Miller	Paul & Diane Russell
Anne Nahvi	Michael O. Lunsford
Bryan J. Douglass	Drew Cleveland
Dan C. Canan	Ron & Susan Orebaugh
David Bruce Baldwin	Adam Sieber
Robert S. Curtis	Jody Clevenger
Joe Evans	Fritz G. Schnepf Jr.
Richard F. Taylor, Jr.	Paulette Lees
John H. Bowles	Traci Lutton
Lynn Vollmar	Rona Buttry
Kaye Whitehhead	Debbie Gant
Donn Roberts	Barbara Street
L. Marshall Roch	David Schnepf
Brent L. Batman	Bruce McGill
Scott Sorensen	Tom L. Bennington
Keith L. Gary	John C. Parsons
O'Neal Smitherman	Sharon Russell
Terry Murphy	Fabiane Russell
Stephen R. Lowry	Johneldia L. Bernard
Carolyn Grieves	Bill H. Bernard
Joseph Russell	

Response to Comment 6:

IDEM, OAQ must ensure that the proposed permit addresses all applicable state and federal air quality rules and regulations before it is issued. Once IDEM has had the opportunity to review all comments made on the draft permit and has completed its evaluation of all applicable state and federal air quality rules and regulations, a final determination will be made regarding this permit.

No change was made to the permit as a result of this comment.

Comment 7:

During the Public Notice Period for the proposed Muncie Ethanol facility, the following persons requested that IDEM hold a public hearing on the proposed permit:

Marita Fields	Amy Shyon
Jane Bart	Bryon Beaty
Kathie Bart	Betty Cooper
Jule Bart	Cindy Link
Gregg Bart	Kevin Tub
Carol Bart	Dal Past
Dole Foster	David Upchurch
Gary Alexander	Elsie Welch
Sidney Shepp	Richard Morris
Julie Alexander	Sharon Morris
Belinda Walburn	Charles Link
James Hall	Sharolyn Coulter
Kathy Hall	Joyce Vance
Jamie Foster	Vickie Walburn
Vickie Walburn	Louie Wright
Barbara Haggard	James Hall
Rochard Haggard	Ed Stepp
Dean Welsh	Jerry Evans
Connie Geesaman	Dennis Tyler
Teresa Welsh	Dr. James P. Rybarczyk
Kay Teagle	Cindy L. Duvall
Gary Gardner	Stephanie Welch
Emmalee Gardner	Sue Errington
Michael Foster	

Response to Comment 7:

As stated above, IDEM received 47 requests for a public hearing. 326 Indiana Administrative Code 2-8-13(c)(4) states that "(t)here shall be an opportunity for a public hearing if deemed necessary by the commissioner." IDEM reviewed the requests for a public hearing but did not deem that a public hearing was necessary. IDEM did feel that a public meeting would be helpful to explain the air pollution control permit process and discuss issues of air quality. That public meeting was held on April 9, 2007. The meeting was attended by over 100 people and lasted for nearly five (5) hours. IDEM received additional requests for a public hearing during and after the public meeting. IDEM reviewed these additional requests but did not deem that a public hearing was necessary.

Upon further review, IDEM has decided to make the following revisions to the permit (bolded language has been added, the language with a line through it has been deleted):

1. In order to clarify recordkeeping requirements specific to parametric monitoring, Conditions D.1.12(e) and (f), and D.2.12(a) and (b), and D.3.15(b), (c), (d), and (e) were revised.

D.1.12 Record Keeping Requirements

...

(e) To document compliance with Condition D.1.9, the Permittee shall maintain records of the once per day visible emission notations of the baghouse and bin vent filter stack

exhausts ~~or maintain a record of the reason why the visible emissions notations were not taken~~. **The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g., the process did not operate that day).**

(f) To document compliance with Condition D.1.10, the Permittee shall maintain once per day records of pressure drop 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).**

D.2.12 Record Keeping Requirements

(a) To document compliance with Condition D.2.9, the Permittee shall maintain records of once per day visible emission notations of the stack SV16 ~~or maintain a record of the reason why the visible emissions notations were not taken~~. **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.2.10, the Permittee shall maintain daily records of pressure drop and flow rate for scrubber C07 during normal operation. **The Permittee shall include in its daily record when a pressure drop or flow rate reading is not taken and the reason for the lack of a pressure drop or flow rate reading (e.g., the process did not operate that day).**

D.3.15 Record Keeping Requirements

...

(b) To document compliance with Condition D.3.10, the Permittee shall maintain records of once per day visible emission notations of the stack SV07 ~~or maintain a record of the reason why the visible emissions notations were not taken~~. **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).**

(c) To document compliance with Condition D.3.11, the Permittee shall maintain continuous temperature records for each thermal oxidizer and the 3-hour average temperature used to demonstrate compliance during the most recent compliant stack test. **The Permittee shall include in its daily record when a temperature reading is not taken and the reason for the lack of a temperature reading (e.g., the process did not operate that day).**

(d) To document compliance with Condition D.3.12, the Permittee shall maintain daily records of the duct pressure or fan amperage for each of the thermal oxidizer systems (C09 and C10). **The Permittee shall include in its daily record when a duct pressure or fan amperage reading is not taken and the reason for the lack of a duct pressure or fan amperage reading (e.g., the process did not operate that day).**

(e) To document compliance with Condition D.3.13, the Permittee shall maintain daily records of pressure drop and flow rate for the scrubber C08 during normal operation. **The Permittee shall include in its daily record when a pressure drop or flow rate reading is not taken and the reason for the lack of a pressure drop or flow rate reading (e.g., the process did not operate that day).**

2. In order to clarify that the thermal oxidizers stack (SV07) always vent outside the building, Condition D.3.10(a) was revised.

D.3.10 Visible Emissions Notations

(a) Visible emission notations of the thermal oxidizer stack (SV07) shall be performed once per day during normal daylight operations ~~when exhausting to the atmosphere~~. A trained employee shall record whether emissions are normal or abnormal.

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for a New Source Review and a Federally Enforceable State Operating Permit (FESOP)

Source Background and Description

Source Name:	Muncie Ethanol, LLC
Source Location:	Intersection of State Hwy 3 and E 800 North, Muncie, Indiana 47302
County:	Delaware
SIC Code:	2869
Operation Permit No.:	F035-23723-00080
Permit Reviewer:	ERG/MP

The Office of Air Quality (OAQ) has reviewed a FESOP application from Muncie Ethanol, LLC relating to the operation of an ethanol production plant.

History

Muncie Ethanol, LLC submitted an application on September 13, 2006, to IDEM, OAQ applying for a Federally Enforceable State Operating Permit to construct and operate a new ethanol production plant at the Intersection of State Hwy 3 and E 800 North, Muncie, Indiana 47302. This is the first air permit approval for this source.

Permitted Emission Units and Pollution Control Equipment

There are no permitted emission units at this source during this review process.

Unpermitted Emission Units and Pollution Control Equipment

There are no unpermitted emission units operating at this source during this review process.

New Emission Units and Pollution Control Equipment

The application includes information relating to the prior approval for the construction and operation of the following equipment pursuant to 326 IAC 2-8-4(11):

(a) One (1) grain receiving and handling operation, approved for construction in 2007, controlled by baghouse C01, exhausting through stack SV01, and consisting of the following:

(1) Two (2) grain receiving pits, identified as EU01 (Truck Dump Pit) and EU02 (Rail Dump Pit), approved for construction in 2007, each with a maximum throughput rate of 20,000 bushels of corn per hour.

(2) Two (2) conveyors and elevator systems, identified as EU03-EU06, approved for construction in 2007, each with a maximum throughput rate of 20,000 bushels of corn per hour.

(b) One (1) corn scalper, identified as EU07, approved for construction in 2007, with a maximum throughput rate of 20,000 bushels of corn per hour, controlled by baghouse C01, and exhausting through stack SV01.

(c) Three (3) corn bins, identified as EU08, EU09, and EU59, approved for construction in 2007, with a capacity of 500,000 bushels of corn each, controlled by Bin Vent Filters C02, C03, and C14, respectively, and exhausting through stacks SV02, SV03, and SV15, respectively.

(d) One (1) surge bin, identified as EU10, approved for construction in 2007, with a capacity of 20,000 bushels of corn per hour, controlled by Bin Vent Filter C04, and exhausting through stack SV04.

(e) Three (3) hammermills, identified as EU13, EU14, and EU15, approved for construction in 2007, each with a maximum throughput rate of 66 tons per hour, controlled by baghouses C05 and C06, and exhausting through stacks SV05 and SV06. The hammermills are fed by two conveyors, identified as EU11 and EU12, and approved for construction in 2007.

(f) One (1) fermentation process, approved for construction in 2007, with a maximum throughput rate of 13,000 gallons per hour (as ethanol), controlled by scrubber C07, with emissions exhausted through stack SV16. This process consists of the following:

(1) One (1) Yeast tank, identified as EU26, approved for construction in 2007.

(2) Seven (7) fermenters, identified as EU18 through EU24, approved for construction in 2007.

(3) One (1) beer well, identified as EU25, approved for construction in 2007.

Under NSPS, 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.

(g) Four (4) natural gas fired boilers, identified as EU53, EU54, EU55, and EU56, approved for construction in 2007, each with a maximum heat input rate of 92.4 MMBtu/hr, with emissions exhausting to stacks SV09, SV10, SV11, and SV12, respectively. Under 40 CFR, Subpart Dc, the boilers are considered to be new steam generating units.

(h) One (1) distillation process, approved for construction in 2007, with a maximum throughput rate of 13,000 gallons of ethanol per hour, controlled by a scrubber (C08) and two thermal oxidizers (C09 and C10), each with a maximum heat input capacity of 18 MMBtu/hr, with emissions exhausted through stack SV07. This process consists of the following:

(1) One (1) slurry tank, identified as EU16, approved for construction in 2007.

(2) Two (2) liquefaction tanks, identified as EU17 and EU60, approved for construction in 2007.

(3) One (1) beer stripper, identified as EU27, approved for construction in 2007.

(4) One (1) side stripper, identified as EU28, approved for construction in 2007.

(5) One (1) rectifier column, identified as EU29, approved for construction in 2007.

(6) Four (4) molecular sieves, identified as EU30, EU31, EU32, and EU33, approved for construction in 2007.

(7) One (1) multiple-effect evaporator, identified as EU34, approved for construction in 2007.

(8) One whole stillage tank, identified as EU35, approved for construction in 2007.

(9) One centrate stillage tank, identified as EU36, approved for construction in 2007.

(10) Four (4) centrifuges, identified as EU37, EU38, EU39, and EU40, approved for construction in 2007.

(11) One syrup tank, identified as EU41, approved for construction in 2007.

(12) One 200 proof condenser, identified as EU42, approved for construction in 2007.

Under NSPS, 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.

(i) Two (2) DDGS dryer and cooling systems, with a maximum throughput rate of 360,487 tons of DDGS per year, consisting of the following:

(1) One (1) natural gas fired DDGS dryer, identified as EU43, with a maximum heat input rate of 95 MMBtu/hr and one (1) DDGS cooler, identified as EU44, with emissions controlled by one (1) thermal oxidizer (C09) with a maximum heat input capacity of 18 MMBtu/hr, exhausting through stack SV07.

(2) One (1) natural gas fired DDGS dryer, identified as EU48, with a maximum heat input rate of 95 MMBtu/hr and one (1) DDGS cooler, identified as EU49, with emissions controlled by one (1) thermal oxidizer (C10) with a maximum heat input capacity of 18 MMBtu/hr, exhausting through stack SV07.

(j) One (1) DDGS handling and storage operation, approved for construction in 2007, with a maximum throughput rate of 100 tons/hr of DDGS, and consisting of the following:

(1) One (1) DDGS elevator, identified as EU51, approved for construction in 2007, controlled by baghouse C13, with emissions exhausted to stack SV08.

(2) One (1) DDGS loadout spout, identified as EU52, approved for construction in 2007, controlled by baghouse C13, with emissions exhausted to stack SV08.

(k) One (1) ethanol loading rack for trucks, identified as EU45, approved for construction in 2007, with a maximum throughput rate of 36,000 gallons per hour, with emissions venting through either of two (2) thermal oxidizers identified as C09 and C10, each with a maximum heat input capacity of 18 MMBtu/hr, exhausting through stack SV07.

Under NSPS, 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.

(l) One (1) ethanol loading rack for railcars, identified as EU46, approved for construction in 2007, with a maximum throughput rate of 60,000 gallons per hour, with emissions venting through either of two (2) thermal oxidizers identified as C09 and C10, each with a maximum heat input capacity of 18 MMBtu/hr, exhausting through stack SV07.

Under NSPS, 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.

(m) Two (2) emergency generators, identified as EU57 and EU58, approved for construction in 2007, with a maximum power output rate of 3,196 horsepower each, and exhausting to stacks SV13 and SV14, respectively.

Under 40 CFR 60, Subpart IIII, the emergency generators EU57 and EU58 are considered to be emergency stationary internal combustion engines.

Insignificant Activities

The source also consists of the following insignificant activities, as defined in 326 IAC 2-7-1(21):

(a) Natural gas-fired combustion sources with heat input equal to or less than ten million Btu per hour.

(b) Storage tanks with capacity less than or equal to 1,000 gallons and annual throughputs less than 12,000 gallons.

(c) Vessels storing lubricating oils, hydraulic oils, machining oils, and machining fluids.

(d) Solvent recycling systems with batch capacity less than or equal to 100 gallons.

(e) Forced and induced draft cooling tower system not regulated under a NESHAP.

(f) Replacement or repair of bags in baghouses and filters in other air filtration equipment.

(g) Heat exchanger cleaning and repair.

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

(i) Blowdown for any of the following: sight glass; boiler; compressors; pumps; and cooling tower.

(j) Other emission units, not regulated by a NESHAP, with PM10, NOx, and SO_2 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) One (1) tank for 200-proof ethanol, identified as TK001, approved for construction in 2007, with a maximum capacity of 213,673 gallons of 200-proof ethanol.

(2) One (1) tank for 200-proof ethanol, identified as TK002, approved for construction in 2007, with a maximum capacity of 213,673 gallons of 200-proof ethanol.

(3) One (1) denaturant tank, identified as TK003, approved for construction in 2007, with a maximum capacity of 248,426 gallons of natural gasoline. [326 IAC 8-4-3]

(4) One (1) denatured ethanol tank, identified as TK004, approved for construction in 2007, with a maximum capacity of 1,104,000 gallons of denatured ethanol.

(5) One (1) denatured ethanol tank, identified as TK005, approved for construction in 2007, with a maximum capacity of 1,104,000 gallons of denatured ethanol.

Under 40 CFR 60, Subpart Kb, storage tanks TK001 through TK005 are considered to be new volatile organic liquid storage tanks.

Existing Approvals

No air approvals have been issued to this source.

Enforcement Issue

There are no enforcement actions pending.

Recommendation

The staff recommends to the Commissioner that the FESOP be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An administratively complete FESOP application for the purposes of this review was received on October 4, 2006.

Emission Calculations

See Appendix A of this document for detailed emission calculations (pages 1 through 11). The PTE for the storage tanks is 2.00 tons per year (tons/yr) of VOC, which was calculated using EPA TANKS 4.0 software.

Potential to Emit

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as "the maximum capacity of a stationary source or emissions 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, inclulding 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, the department, or the appropriate local air pollution control agency."

Pollutant	Potential to Emit (tons/yr)
PM	Greater than 100
PM-10	Greater than 100
SO_2	Less than 100
VOC	Greater than 100
CO	Greater than 100
NO_x	Greater than 100

HAPs	Potential to Emit (tons/yr)
Acetaldehyde	Greater than 10
Acrolein	Greater than 10
Formaldehyde	Greater than 10
Methanol	Greater than 10
All Other HAPs	Less than 10
Total HAPs	Greater than 25

(a) The potential to emit (as defined in 326 IAC 2-7-1(29)) of PM10, VOC, CO, and NOx are equal to or greater than 100 tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-7. The source will be issued a FESOP because the source will limit its emissions below the Title V levels.

(b) The potential to emit (as defined in 326 IAC 2-7-1(29)) of any single HAP is greater than ten (10) tons per year and the potential to emit (as defined in 326 IAC 2-7-1(29)) of a combination of HAPs is greater than twenty-five (25) tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-7. The source will be issued a FESOP because the source will limit its HAP emissions below the Title V levels.

(c) Fugitive Emissions
Since this type of operation is in one of the twenty-eight (28) listed source categories under 326 IAC 2-2, the fugitive particulate matter (PM) and volatile organic compound (VOC) emissions are counted toward determination of PSD and Emission Offset applicability.

Potential to Emit After Issuance

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

	Potential To Emit (tons/year)						
Process/Emission Unit	PM	PM10	SO_2	NOx	VOC	CO	HAPs
Grain Receiving and Handling	9.80	9.80	-	-	-	-	-
Grain Receiving - Fugitive	4.53	1.34	-	-	-	-	-
Fermentation	-	-	-	-	36.2	-	5.91
RTO Sytem (Distillation, Dryers, Cooling, Loadout)	42.0	42.0	61.3	53.9	51.7	67.0	9.37
Boilers	3.02	8.09	0.97	38.9	3.2	29.1	3.00
DDGS Handling and Loadout	1.28	1.28	-	-	-	-	-
DDGS Loadout - Fugitive	1.55	0.52	-	-	-	-	-
Wet Cake Storage*	-	-	-	-	See Note	-	See Note
Ethanol Loadout**	-	-	-	-	See Note	-	See Note
Paved Roads (Fugitive)	24.7	4.81	-	-	-	-	-
Unpaved Roads (Fugitive)	0.43	0.12	-	-	-	-	-
Cooling Tower	8.22	8.22	-	-	-	-	-
Emergency Generators	0.22	0.22	0.13	4.86	0.23	1.76	Negligible
Insignificant Space Heaters	0.02	0.08	0.01	1.12	0.06	0.94	
Storage Tanks	-	-	-	-	2.00	-	0.27
Leaks	-	-	-	-	3.39	-	0.20
Other Insignificant Activities	1.00	1.00	-	-	1.00	-	-
Total Emissions	96.9	77.6	62.4	98.8	97.8	98.8	18.8

Note: "-" pollutant not emitted by the facility.
* This plant is capable of producing both DDGS and WDGS. The 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 Ethanol Loadout are included in the total for the RTO system.

County Attainment Status

The source is located in Delaware County.

Pollutant	Status
PM10	Attainment
PM2.5	Attainment
SO_2	Attainment
NO_2	Attainment
8-hour Ozone	Maintenance
CO	Attainment
Lead	Attainment

(a) Delaware County has been classified as unclassifiable or attainment for PM2.5. 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 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 and NOx emissions are considered when evaluating the rule applicability relating to the ozone standards. Delaware County has been designated as maintenance for the 8-hour ozone standard. Therefore, VOC and NOx emissions were reviewed pursuant to Prevention of Significant Deterioration (PSD). See the State Rule Applicability – Entire Source section.

(c) Delaware County has been classified as attainment or unclassifiable in Indiana for all remaining 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.

Source Status

New Source PSD Definition (emissions after controls, based on 8760 hours of operation per year at rated capacity and/or as otherwise limited):

Pollutant	Emissions (tons/yr)
PM	96.9
PM10	77.6
SO_2	63.6
VOC	97.8
CO	98.8
NO_x	98.8
Single HAP	Less than 10
Combination HAPs	Less than 25

This new source is not a PSD major stationary source because no regulated pollutant is emitted at a rate of one hundred (100) tons per year or greater, and it is in one of the twenty-eight (28) listed source categories.

Federal Rule Applicability

(a) 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.

(b) The four (4) boilers, identified as boilers EU53, EU54, EU55, and EU56, each have a maximum heat input capacity greater than 10 MMBtu/hr and less than 100 MMBtu/hr and will be constructed after the June 9, 1989 applicability date. Therefore, these boilers are subject to the New Source Performance Standards for Small Industrial - Commercial - Institutional Steam Generating Units (326 IAC 12, 40 CFR 60.40c-48c, Subpart Dc).

Nonapplicable portions of the NSPS will not be included in the permit. Since boilers EU53, EU54, EU55, and EU56 only burn natural gas, they are subject to the following portions of 40 CFR 60, Subpart Dc.

(1) 40 CFR 60.40c
(2) 40 CFR 60.41c
(3) 40 CFR 60.43c(d)
(4) 40 CFR 60.43c(e)(1)
(5) 40 CFR 60.45c(a)
(6) 40 CFR 60.45c(d)
(7) 40 CFR 60.47c(d)
(8) 40 CFR 60.48c(a)
(9) 40 CFR 60.48c(b)
(10) 40 CFR 60.48c(g)
(11) 40 CFR 60.48c(i)
(12) 40 CFR 60.48c(j)

The provisions of 40 CFR 60 Subpart A – General Provisions, which are incorporated as 326 IAC 12, apply to EU53, EU54, EU55, and EU56 except when otherwise specified in 40 CFR 60, Subpart Dc.

(c) Tanks TK001 through TK005 have capacities greater than 75 cubic meters (19,813 gallons) and will be used to store volatile organic liquids. Therefore, these tanks are subject to the New Source Performance Standards for Volatile Organic Liquid Storage Vessels for which Construction, Reconstruction, or Modification Commenced after July 23, 1984 (326 IAC 12, 40 CFR 60.110b - 117b, Subpart Kb).

Nonapplicable portions of the NSPS will not be included in the permit. The proposed storage tanks (TK0001 through TK005) are subject to the following portions of 40 CFR 60, Subpart Kb.

(1) 40 CFR 60.110b
(2) 40 CFR 60.111b
(3) 40 CFR 60.112b(a)(1)
(4) 40 CFR 60.113b(a)
(5) 40 CFR 60.115b(a)
(6) 40 CFR 60.116b(a-e)
(7) 40 CFR 60.117b

The provisions of 40 CFR 60, Subpart A – General Provisions, which are incorporated as 326 IAC 12-1, apply to the storage tanks TK001 through TK005, except when otherwise specified in 40 CFR 60, Subpart Kb.

(d) Ethanol is one of the chemicals listed in 40 CFR 60.489. Therefore, this ethanol production plant is subject to the requirements of New Source Performance Standards for Volatile Organic Liquid Storage Vessels for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry (326 IAC 12, 40 CFR 60.480 - 489, Subpart VV).

Nonapplicable portions of the NSPS will not be included in the permit. The proposed ethanol production plant is subject to the following portions of 40 CFR 60, Subpart VV.

(1) 40 CFR 60.480

(2) 40 CFR 60.481
(3) 40 CFR 60.482-1
(4) 40 CFR 60.482-2
(5) 40 CFR 60.482-3
(6) 40 CFR 60.482-4
(7) 40 CFR 60.482-5
(8) 40 CFR 60.482-6
(9) 40 CFR 60.482-7
(10) 40 CFR 60.482-8
(11) 40 CFR 60.482-9
(12) 40 CFR 60.482-10
(13) 40 CFR 60.483-1
(14) 40 CFR 60.483-2
(15) 40 CFR 60.485
(16) 40 CFR 60.486
(17) 40 CFR 60.487

The provisions of 40 CFR 60, Subpart A – General Provisions, which are incorporated as 326 IAC 12-1, apply to this source, except when otherwise specified in 40 CFR 60, Subpart VV.

(e) The two (2) emergency generators, identified as EU57 and EU58, will commence construction after July 11, 2005 and will be manufactured after April 1, 2006. Therefore, the emergency generators identified as EU57 and EU58 are subject to the New Source Performance Standards for Stationary Compression Ignition Internal Combustion Engines (326 IAC 12, 40 CFR 60.4200 - 4209, Subpart IIII).

Nonapplicable portions of the NSPS will not be included in the permit. The proposed emergency generators (EU57 and EU58) are subject to the following portions of 40 CFR 60, Subpart IIII:

(1) 40 CFR 60.4200(a)(2)
(2) 40 CFR 60.4200(a)(3)
(3) 40 CFR 60.4200(b)
(4) 40 CFR 60.4205(a)
(5) 40 CFR 60.4206
(6) 40 CFR 60.4207(a)
(7) 40 CFR 60.4207(b)
(8) 40 CFR 60.4207(c)
(9) 40 CFR 60.4208
(10) 40 CFR 60.4209(a)
(11) 40 CFR 60.4211(a)
(12) 40 CFR 60.4211(b)
(13) 40 CFR 60.4211(e)
(14) 40 CFR 60.4212
(15) 40 CFR 60.4214(b)
(16) 40 CFR 60.4218
(17) 40 CFR 60.4219
(18) Tables 1, 5, and 8

The provisions of 40 CFR 60, Subpart A – General Provisions, which are incorporated as 326 IAC 12-1, apply to this source, except when otherwise specified in 40 CFR 60, Subpart IIII.

(f) Ethanol is one of the chemicals listed in 40 CFR 60.667. However, according to the EPA memorandum from Mr. George T. Czerniak dated December 6, 2002, the manufacture of ethanol using a fermentation process (biological synthesis) was excluded from the scope of NSPS, Subpart NNN. Therefore, the distillation unit at this new ethanol production plant is not subject to the requirements of New Source Performance Standards for Volatile Organic Liquid Storage Vessels VOC Emissions From Synthetic Organic

Chemical Manufacturing Industry (SOCMI) Distillation Operations (326 IAC 12, 40 CFR 60.660 - 667, Subpart NNN).

(g) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs) (326 IAC 14 and 20, and 40 CFR Part 61 and 63) included in this permit.

(h) This source will limit HAP emissions from the entire source to less than 10 tons/yr for a single HAP and less than 25 tons/yr for total HAPs. Therefore, the requirements of National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines (40 CFR 63, Subpart ZZZZ) are not included in this permit.

(i) The requirements of 40 CFR Part 63, Subpart F (National Emission Standards for Organic Hazardous Air Pollutants From Synthetic Organic Chemical Manufacturing Industry), 40 CFR Part 63, Subpart G (National Emission Standards for Organic Hazardous Air Pollutants from Synthetic Organic Chemical Manufacturing Industry for Process Vents, Storage Vessels, Transfer Operations, and Wastewater), and 40 CFR Part 63, Subpart H (National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks), are not included in this permit because (1) this source has accepted limits that make it a minor source of hazardous air pollutants; (2) the source does not manufacture as a primary product any of the chemicals listed in Table 1 of 40 CFR 63, Subpart F, Tetrahydro-benzaldehyde, or Crotonaldehyde; and (3) the source does not use as a reactant, manufacture as a product or co-product any of the chemicals listed in Table 2 of 40 CFR 63, Subpart F.

(j) The requirements of 40 CFR 63, Subpart I – National Emission Standards for Organic Hazardous Air Pollutants for Certain Processes Subject to the Negotiated Regulation for Equipment Leaks are not included in this permit. The source does not operate any of the processes specified in 40 CFR 63.190(b).

(k) This source has accepted limits that make it a minor source of hazardous air pollutants. Therefore, the requirements for the NESHAP for Industrial Process Cooling Towers (40 CFR 63, Subpart Q) are not included in this permit.

(l) This source has accepted limits that make it a minor source of hazardous air pollutants. Therefore, the requirements of the NESHAP for Organic Liquids Distribution (non-gasoline) (40 CFR 63, Subpart EEEE) are not included in this permit.

(m) This source has accepted limits that make it a minor source of hazardous air pollutants. Therefore, the requirements of the NESHAP for Miscellaneous Organic Chemical Manufacturing (40 CFR 63, Subpart FFFF) are not included in this permit.

(n) This source has accepted limits that make it a minor source of hazardous air pollutants. Therefore, the requirements of the NESHAP for Industrial, Commercial, and Institutional Boilers and Process Heaters (40 CFR 63, Subpart DDDDD) are not included in this permit.

State Rule Applicability – Entire Source

326 IAC 2-2 (Prevention of Significant Deterioration (PSD))

The source will be approved for construction in 2007. The source is in one of the twenty-eight (28) source categories as defined in 326 IAC 2-2-1 and the potential to emit PM, PM10, VOC, CO, and NOx from the entire source before control is greater than one hundred (100) tons/yr.

In order to make the requirement of 326 IAC 2-2 (PSD) not applicable, the source shall comply with the following emission limitations:

(a) The PM emissions from the grain receiving, handling, and DDGS load-out operations shall not exceed the emission limits listed in the table below:

Unit ID	Unit Description	Control Device ID	PM Emission Limit (lbs/hr)
EU01, EU02, EU03, EU04, EU05, EU06, EU07	Grain Receiving, Conveyors, Elevators, and Corn Scalper	C01	1.29
EU08	Corn Storage Bin #1	C02	0.05
EU09	Corn Storage Bin #2	C03	0.05
EU59	Corn Storage Bin #3	C14	0.05
EU010	Surge Bin	C04	0.03
EU13, EU14, EU15	Hammermill Baghouse #1	C05	0.39
EU13, EU14, EU15	Hammermill Baghouse #2	C06	0.39
EU51, EU52	DDGS Handling and Loadout	C13	0.29

This is equivalent to 11.1 tons/yr of PM. The source will use baghouses and bin vent filters to ensure compliance with these limits. With baghouse and bin vent filter control, the source is capable of complying with these limits.

(b) The PM emissions from the thermal oxidizer stack (SV07), which is used to control emissions from the DDGS Dryers, coolers, the distillation process, and ethanol loadout, shall not exceed 9.60 lbs/hr. This is equivalent to 42.0 tons/yr of PM emissions.

(c) The PM emissions from the boilers shall not exceed 0.005 pounds per MMBtu.

(d) The Permittee shall use periodic sweeping to control PM emissions from the paved roads. The sweeping shall be performed in a manner and at a frequency sufficient to ensure compliance with 326 IAC 2-2.

Combined with the PM emissions from the boilers, cooling tower, emergency generators, grain receiving/loadout fugitives, DDGS loadout fugitives, unpaved roads, and other insignificant activities at this source, the PM emissions from the entire source are limited to less than one hundred (100) tons/yr.

The source also accepted limits on the throughput and on the emission rates of PM10, VOC, CO, and NOx, which limit emissions of all regulated pollutants from the entire source to less than one hundred (100) tons/yr (see the discussion of 326 IAC 2-8-4 below). Therefore, the requirements of 326 IAC 2-2 are not applicable.

326 IAC 2-4.1 (New Sources of Hazardous Air Pollutants)

The source has accepted FESOP limits on the HAP emissions from the entire source, which limits the emissions from the source to less ten (10) tons/yr for a single HAP and less than twenty-five (25) tons/yr for any combination of HAPs (see the discussion of 326 IAC 2-8-4 below). Therefore, the requirements of 326 IAC 2-4.1 are not applicable.

326 IAC 2-8-4 (FESOP)

The potential to emit PM10, VOC, CO, and NOx, before controls, for the entire source is greater than one hundred (100) tons/yr. In addition, the potential to emit HAP before control from this source is greater than ten (10) tons/yr for a single HAP (Acetaldehyde) and greater than twenty-five (25) tons/yr for total HAPs. Pursuant to 326 IAC 2-8-4 (FESOP), the source shall comply with the following:

(a) The PM10 emissions from the grain receiving, handling, and DDGS handling and load-out operations shall not exceed the emission limits listed in the table below:

Unit ID	Unit Description	Control Device ID	PM10 Emission Limit (lbs/hr)
EU01, EU02, EU03, EU04, EU05, EU06, EU07	Grain Receiving, Conveyors, Elevators, and Corn Scalper	C01	1.29
EU08	Corn Storage Bin #1	C02	0.05
EU09	Corn Storage Bin #2	C03	0.05
EU59	Corn Storage Bin #3	C14	0.05
EU010	Surge Bin	C04	0.03
EU13, EU14, EU15	Hammermill Baghouse #1	C05	0.39
EU13, EU14, EU15	Hammermill Baghouse #2	C06	0.39
EU51, EU52	DDGS Handling and Loadout	C13	0.29

This is equivalent to 11.1 tons/yr of PM10. The source will use baghouses and bin vent filters to ensure compliance with these limits. With baghouse and bin vent filter control, the source is capable of complying with these limits.

(b) The total grain received by straight trucks shall not exceed 346,067 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

(c) The total grain received by hopper trucks shall not exceed 807,491 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

(d) The total DDGS loadout shall not exceed 360,487 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

(e) The Permittee shall use periodic sweeping to control PM and PM10 emissions from the paved roads. The sweeping shall be performed in a manner and at a frequency sufficient to ensure compliance with 326 IAC 2-8.

(f) The Permittee shall comply with the following requirements for the fermentation scrubber:

(1) The VOC emissions from the scrubber shall not exceed 8.26 lbs/hr.

(2) Total HAP emissions shall not exceed 1.35 lbs/hr, and Acetaldehyde emissions shall not exceed 1.28 lbs/hr.

(g) The emissions from thermal oxidizer stack (SV07), which is used to control emissions from the DDGS Dryers, coolers, the distillation process, and ethanol loadout, shall not exceed the following:

(1) PM10 emissions shall not exceed 9.60 lbs/hr. This is equivalent to 42.0 tons/yr of PM.

(2) VOC emissions shall not exceed 11.8 lbs/hr. This is equivalent to 51.7 tons/yr of VOC.

(3) CO emissions shall not exceed 15.3 lbs/hr. This is equivalent to 67.0 tons/yr of CO.

(4) NOx emissions shall not exceed 12.3 lbs/hr. This is equivalent to 53.9 tons/yr of NOx.

(5) Total HAP emissions shall not exceed 2.14 lbs/hr. This is equivalent to 9.37 tons/yr. Acetaldehyde emissions shall not exceed 0.93 lbs/hr, which is equivalent to 4.07 tons/yr.

(h) The Permittee shall comply with the following requirements for the ethanol loading racks (EU45 and EU46):

(1) The denatured ethanol load-out rate shall not exceed 115,500,000 gallons per twelve (12) consecutive month period with compliance determined at the end of each month.

(2) The Permittee shall use thermal oxidizers C09 and C10 to control the emissions from the loading racks when loading denatured ethanol to trucks or railcars.

(3) The ethanol loading racks (EU45 and EU46) shall utilize submerged loading methods.

(4) The railcars and trucks shall not use vapor balance services during ethanol loading.

(i) The Permittee shall comply with the following requirements for the boilers, identified as EU53, EU54, EU55, and EU56:

(1) The boilers shall burn only natural gas.

(2) NOx emissions shall not exceed 0.024 pounds per MMBtu.

(3) CO emissions shall not exceed 0.018 pounds per MMBtu.

(4) PM emissions shall not exceed 0.005 pounds per MMBtu.

(5) PM10 emissions shall not exceed 0.0019 pounds per MMBtu

(j) The operating hours for the emergency generators, identified as EU57 and EU58, shall not exceed 100 hours each per twelve (12) consecutive month period with compliance determined at the end of each month.

Combined with the PM10, VOC, CO, NOx, and HAP emission units, the emissions from the entire source are limited to less than one hundred (100) tons/yr for PM10, VOC, CO and NOx, and less than ten (10) tons/yr for a single HAP and less than twenty-five (25) tons/yr total HAPs. Therefore, the requirements of 326 IAC 2-7 (Part 70 Program) and 326 IAC 2-2 (PSD) are not applicable.

326 IAC 2-6 (Emission Reporting)

This source is located in Delaware County, is not required to operate under a Part 70 permit, and emits less than 5 tons per year of lead. Therefore, the source is only subject to the requirements of 326 IAC 2-6-5 (Additional Information Requests).

326 IAC 5-1 (Opacity Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity for sources 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.

326 IAC 6-4 (Fugitive Dust Emissions)

Pursuant to 326 IAC 6-4, the source shall not generate fugitive dust to the extent that some portion of the material escapes beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located.

326 IAC 6-5 (Fugitive Particulate Emissions Limitations)

The potential fugitive particulate emissions, as defined in 326 IAC 6-5-2, from the source are greater than 25 tons/yr. Therefore, the requirements of 326 IAC 6-5 are applicable to this source. Pursuant to 326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations), fugitive particulate matter emissions shall be controlled according to the plan submitted on February 13, 2007. The plan is included as Attachment A of the permit.

State Rule Applicability - Grain Receiving and Handling Operations

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)

Pursuant to 326 IAC 6-3-2, particulate emissions from each of the 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)
EU01, EU02, EU03, EU04, EU05, EU06, EU07	Grain Receiving, Conveyors, Elevators, and Corn Scalper	560	70.3
EU08	Corn Storage Bin #1	187	57.8
EU09	Corn Storage Bin #2	187	57.8
EU59	Corn Storage Bin #3	187	57.8
EU010	Surge Bin	560	70.3
EU13	Hammermill #1	44	43.4
EU14	Hammermill #2	44	43.4
EU15	Hammermill #3	44	43.4

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:

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

According to the emission calculations (see Appendix A), the potential to emit PM after control from these grain receiving and handling operations is less than the emission limits above. Therefore, these operations can comply with 326 IAC 6-3-2 using the grain receiving and handling baghouses C01, C05, C06 and bin vent filters C02, C03, C04, and C14.

State Rule Applicability – Boilers

326 IAC 6-2-4 (PM Emissions for Sources of Indirect Heating)

Pursuant to 326 IAC 6-2-4(a), indirect heating facilities constructed after September 12, 1983, shall be limited by the following equation:

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

Where Pt = PM emission rate limit (lbs/MMBtu)
Q = total source heat input capacity (MMBtu/hr)

The total source heat input capacity is 92.4 + 92.4 + 92.4 + 92.4 = 369.6 MMBtu/hr. Therefore, the PM emission limit for each of the boilers identified as EU53, EU54, EU55, and EU56 is calculated as follows:

$$Pt = \frac{1.09}{369.6^{0.26}} = 0.234 \text{ lbs/MMBtu.}$$

A PM emission limit of 0.234 lbs/MMBtu is equivalent to 21.6 lbs/hr (0.234 lbs/MMBtu x 92.4 MMBtu/hr = 21.6 lbs/hr) of PM emissions from each of the boilers identified as EU53, EU54, EU55, and EU56. According to the emission calculations in Appendix A, the total PM emissions from EU53, EU54, EU55, and EU56 are 0.74 lbs/hr. Therefore, the boilers are capable of complying with the PM requirements in 326 IAC 6-2-4.

326 IAC 7-1.1 (Sulfur Dioxide Emission Limitations)

The boilers have a potential to emit less than 25 tons of SO2 per year. Therefore, the boilers are not subject to 326 IAC 7-1.1-1.

326 IAC 12 (New Source Performance Standards)

EU53, EU54, EU55, and EU56 are subject to the requirements of 326 IAC 12 because they each have a heat input capacity greater than 10 MMBtu per hour but less than 100 MMBtu per hour, are approved for construction after June 9, 1989, and are defined as a "steam generating unit" pursuant to 40 CFR 60.41c. Pursuant to this rule, the Permittee is required to keep daily records of the fuel burned in the boilers. 326 IAC 12 incorporates by reference a version of 40 CFR 60, Subpart Dc that predates the revisions made to 40 CFR 60, Subpart Dc on February 27, 2006.

State Rule Applicability – Fermentation Process

326 IAC 8-1-6 (General Reduction Requirements for VOC Emissions)

The fermentation process will be constructed after January 1, 1980 and has potential VOC emissions greater than twenty-five (25) tons per year. Therefore, this fermentation process is subject to 326 IAC 8-1-6 and the Permittee is required to control VOC emissions through the use of Best Available Control Technology (BACT). According to the BACT analysis in Appendix B, the BACT for this process has been determined to be the following:

(a) The VOC emissions from the fermentation process shall be controlled by a wet scrubber.

(b) The overall VOC control efficiency for the wet scrubber (including the capture efficiency and absorption efficiency) shall be at least 98% or the VOC outlet concentration shall not exceed 20 ppmv.

(c) The VOC emissions from the outlet of the wet scrubber shall not exceed 8.26 lbs/hr.

State Rule Applicability – Distillation Process

326 IAC 8-1-6 (General Reduction Requirements for VOC Emissions)

The distillation process will be constructed after January 1, 1980 and has potential VOC emissions greater than twenty-five (25) tons per year. Therefore, this distillation process is subject to 326 IAC 8-1-6 and the Permittee is required to control VOC emissions through the use of Best Available Control Technology (BACT). According to the BACT analysis in Appendix B, the BACT for this process has been determined to be the following:

(a) The VOC emissions from the distillation process shall be controlled by a wet scrubber identified as C08 followed by one of either two (2) thermal oxidizers, identified as C09 and C10.

(b) The overall VOC control efficiency for the wet scrubber and thermal oxidizer system (including the capture efficiency and destruction efficiency) shall be at least 98%, or the VOC outlet concentration shall not exceed 10 ppmv.

(c) The VOC emissions from the outlet of the thermal oxidizer stack (SV07) shall not exceed 11.8 lbs/hr.

State Rule Applicability – DDGS Drying, Cooling, and loadout Process

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)

Pursuant to 326 IAC 6-3-2, particulate emissions from each of the DDGS dryers (EU43 and EU48), the DDGS coolers (EU44 and EU49), and the DDGS loadout operations (EU51 and EU52) 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)
EU43	DDGS Dryer	41.15	42.8
EU44	DDGS Cooler	41.15	42.8
EU48	DDGS Dryer	41.15	42.8
EU49	DDGS Cooler	41.15	42.8
EU51, EU52	DDGS Handling and Loadout	100	51.3

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:

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

According to the emission calculations (see Appendix A), the potential to emit PM after control from these DDGS drying, cooling, handling, and loadout operations is less than the emission limits above. Therefore, these operations can comply with 326 IAC 6-3-2 using the thermal oxidizer system (C09 and C10), and the DDGS storage and handling baghouse (C13).

326 IAC 8-1-6 (General Reduction Requirements for VOC Emissions)

The DDGS dryers (EU43 and EU48) will be constructed after January 1, 1980 and each of them has potential VOC emissions greater than 25 tons per year. There are no other rules in 326 IAC 8 applicable to these dryers. Therefore, these dryers are subject to 326 IAC 8-1-6 and the Permittee is required to control VOC emissions using the Best Available Control Technology (BACT). Based on the information in Appendix B, BACT for the DDGS dryers has been determined to be the following:

(a) The VOC emissions from the DDGS dryers (EU43 and EU48) shall be controlled by one of either two (2) thermal oxidizers, identified as C09 and C10.

(b) The overall VOC control efficiency for each of the thermal oxidizers, identified as C09 and C10 (including the capture efficiency and destruction efficiency) shall be at least 98%, or the VOC outlet concentration shall not exceed 10 ppmv.

(c) The VOC emissions from the outlet of the thermal oxidizer stack (SV07) shall not exceed 11.8 lbs/hr.

The DDGS coolers (EU44 and EU49) will be constructed after January 1, 1980 and have potential VOC emissions less than 25 tons per year. Therefore, the coolers are not subject to 326 IAC 8-1-6.

State Rule Applicability – Ethanol Loading Rack (EU45 and EU46)

326 IAC 8-1-6 (General Reduction Requirements for VOC Emissions)

The ethanol loading racks at this source will be constructed after January 1, 1980 and have potential VOC emissions greater than 25 tons per year each. There are no other rules in 326 IAC 8 applicable to these units. Therefore, these units are subject to 326 IAC 8-1-6 and the Permittee is required to control VOC emissions using Best Available Control Technology (BACT). Based on the information provided in Appendix B, BACT for these ethanol loading racks (EU45 and EU46) has been determined to be the following:

(a) The VOC emissions from the ethanol loading racks shall be controlled by one of either two (2) thermal oxidizers, identified as C09 and C10.

(b) The overall VOC control efficiency for each of the thermal oxidizers, identified as C09 and C10 (including the capture efficiency and destruction efficiency) shall be at least 98%, or the VOC outlet concentration shall not exceed 10 ppmv.

(c) The VOC emissions from the outlet of the thermal oxidizer stack (SV07) shall not exceed 11.8 lbs/hr.

State Rule Applicability - Cooling Tower (Insignificant Activity)

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)

Pursuant to 326 IAC 6-3-1(b)(11), particulate emissions from the noncontact cooling tower systems are exempt from the requirements of 326 IAC 6-3.

State Rule Applicability – Emergency Generators (Insignificant Activity)

326 IAC 7-1.1 (Sulfur Dioxide Emission Limitations)

The emergency generators have a potential to emit less than 25 tons of SO2 per year. Therefore, the emergency generators are not subject to 326 IAC 7-1.1-1.

326 IAC 9-1-2 (Carbon Monoxide Emission Requirements)

This source is not among the listed source categories in 326 IAC 9-1-2. Therefore, the emergency generators (EU57 and EU58) are not subject to the requirements of 326 IAC 9-1-2.

326 IAC 10-1 (Nitrogen Oxide Emission Requirements)

This source is not located in Clark or Floyd County. Therefore, the emergency generators (EU57 and EU58) are not subject to the requirements of 326 IAC 10-1.

State Rule Applicability – Storage Tanks TK001 through TK005 (Insignificant Activities)

326 8-4-3 (Petroleum Liquid Storage Facilities)

The denaturant storage tank (TK003) 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 TK003 is subject to the requirements of 326 IAC 8-4-3. Tank TK003 will be equipped with an internal floating roof.

(a) Pursuant to 326 IAC 8-4-3(b)(1)(B), storage tank TK003 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, shall be equipped with covers, lids, or seals such that:

(1) The cover, lid or seal shall be in the closed position at all times except when in actual use;

(2) Automatic bleeder vents shall be closed at all times except when the roof is floated off or landed on the roof leg supports;

(3) Rim vents, if provided, shall be 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), the Permittee shall maintain the following records for a period of two (2) years for tank TK003:

(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. Tanks TK001, TK002, TK004, and TK005 will not be used to store petroleum. Therefore, these tanks are not subject to requirements of 326 IAC 8-4-3.

326 IAC 8-9 (Volatile Organic Liquid Storage Vessels)

The source is not located in Clark, Floyd, Lake, or Porter County. Therefore, the requirements of 326 IAC 8-9-1 are not applicable to the tanks at this source.

Testing Requirements

In order to demonstrate compliance with the FESOP and PSD minor limits, and 40 CFR 60, Subpart Dc, the Permittee shall perform the following tests within 60 days after achieving the maximum capacity but not later than 180 days after initial startup of the ethanol production plant:

(a) PM and PM10 tests for baghouses C01, C05, C06, and C13, which are used to control the particulate emissions from the grain receiving pits identified as EU01 (Truck Dump Pit) and EU02 (Rail Dump Pit), the two (2) conveyors and elevator systems identified as EU03-EU06, the corn scalper identified as EU07, the three (3) hammermills identified as EU13, EU14, and EU15, the DDGS elevator identified as EU51, and the DDGS loadout spout identified as EU52.

(b) PM and PM10 tests for bin vent filters C02, C03, C14, and C04 which are used to control the particulate emissions from the three (3) corn bins, identified as EU08, EU09, and EU59, and the surge bin identified as EU10.

(c) VOC and acetaldehyde tests for the fermentation scrubber system stack (C07). The fermentation scrubber (C07) is used to control the emissions from the fermentation operations.

(d) PM, PM10, VOC, NOx, CO, and HAP tests for the thermal oxidizer system stack (SV07). The thermal oxidizer system (C09 and C10) is used to control the emissions from the distillation process, the DDGS dryers and coolers (EU43, EU44, EU48, and EU49), and the ethanol loading racks (EU45 and EU46).

(e) PM, PM10, NOx, and CO tests for the boilers.

These tests shall be repeated at least once every five (5) years from the date of the last valid compliance demonstration.

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 approporiate corrective actions within a specific time period.

The compliance monitoring requirements applicable to this source are as follows:

1. The grain receiving pits identified as EU01 (Truck Dump Pit) and EU02 (Rail Dump Pit), the two (2) conveyors and elevator systems identified as EU03-EU06, the corn scalper identified as EU07, the three (3) hammermills identified as EU13, EU14, and EU15, the DDGS elevator identified as EU51, the DDGS loadout spout identified as EU52, the three (3) corn bins identified as EU08, EU09, and EU59, and the surge bin identified as EU10 have applicable compliance monitoring conditions as specified below. These units are controlled by baghouses C01, C05, C06, and C13, and bin vent filters C02, C03, C04, and C14.

   Visible Emissions Notations

   (a) Visible emission notations of the baghouse stack exhausts (stacks SV01, SV05, SV06, and SV08) and bin vent filter exhausts (stacks SV02, SV03, SV04, and SV15) 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 pits identified as EU01 (Truck Dump Pit) and EU02 (Rail Dump Pit), the two (2) conveyors and elevator systems identified as EU03-EU06, the corn scalper identified as EU07, the three (3) hammermills identified as EU13, EU14, and EU15, the DDGS elevator identified as EU51, and the DDGS loadout spout identified as EU52 and the bin vent filters used in conjunction with the corn storage bins #1-3 (EU08, EU09, and EU59) and the surge bin (EU10) 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 pits identified as EU01 (Truck Dump Pit) and EU02 (Rail Dump Pit), the two (2) conveyors and elevator systems identified as EU03-EU06, the corn scalper identified as EU07, the three (3) hammermills identified as EU13, EU14, and EU15, the DDGS elevator identified as EU51, and the DDGS loadout spout identified as EU52, and the bin vent filters controlling the three corn bins identified as EU08, EU09, and EU59 and the surge bin identified as EU10 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 fermentation process, which is controlled by scrubber C07, has applicable compliance monitoring conditions as specified below:

<u>Visible Emissions Notations</u>

(a) Visible emission notations of the stack exhaust from the scrubber stack (SV16) 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 scrubber C07 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 35 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.

These monitoring conditions are necessary because the scrubber C40 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).

3. The distillation process, DDGS dryers (EU43 and EU48), DDGS coolers (EU44 and EU49), and the ethanol loading racks (EU45 and EU46), which are controlled by thermal oxidizers C09 and C10, have applicable compliance monitoring conditions as specified below:

Visible Emissions Notations

(a) Visible emission notations of the stack exhaust from the thermal oxidizer system stack (SV07) 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) A continuous monitoring system shall be calibrated, maintained, and operated on the thermal oxidizer system (C09 and C10) for measuring operating temperature. For the purpose of this condition, continuous means no less than once per minute. 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.

(b) 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.

(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) 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.

(e) The duct pressure or fan amperage 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.

(f) The Permittee shall monitor and record the pressure drop and the flow rate of the scrubber C08 at least once per day when the distillation 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 35 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.

(g) 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.

(h) 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

These monitoring conditions are necessary because the scrubber (C08) and thermal oxidizers (C09 and C10) must operate properly at all times the distillation process is in operation, and the thermal oxidizers (C09 and C10) must operate properly at all times DDGS dryers (EU43 and EU48), DDGS coolers (EU44 and EU49), and the ethanol loading racks (EU45 and EU46) are in operation to ensure compliance with 326 IAC 2-2 (PSD), 326 IAC 2-8-4 (FESOP), 326 IAC 8-1-6 (BACT), and 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes).

Conclusion

The construction and operation of this ethanol production plant shall be subject to the conditions of the FESOP 035-23723-00080.

Appendix B
Best Available Control Technology (BACT) Determinations

Source Background and Description

Source Name:	Muncie Ethanol, LLC
Source Location:	Intersection of State Hwy 3 and E 800 North, Muncie, Indiana 47302
County:	Delaware
SIC Code:	2869
Operation Permit No.:	F035-23723-00080
Permit Reviewer:	ERG/MP

The Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) has performed the following Best Available Control Technology (BACT) reviews for a new ethanol production plant. Pursuant to 326 IAC 8-1-6 (New Facilities; General Reduction Requirements), BACT is required for all facilities constructed after January 1, 1980 that have potential VOC emissions of equal to or greater than twenty-five (25) tons per year and are not regulated by other rules in 326 IAC 8. Based on the calculations (see Appendix A) and the analysis of applicable state regulations (see State Rule Applicability section of TSD), the following facilities are subject to the requirements of 326 IAC 8-1-6:

- Fermentation Process;
- Distillation and Dehydration Process;
- DDGS Dryers; and
- Ethanol Loadout.

IDEM, OAQ conducts BACT analyses in accordance with the *"Top-Down" Best Available Control Technology Guidance Document* outlined in the 1990 draft US EPA *New Source Review Workshop Manual*, which outlines the steps for conducting a top-down BACT analysis. Those steps are listed below:

(a) Identify all potentially available control options;
(b) Eliminate technically infeasible control options;
(c) Rank remaining control technologies by control effectiveness;
(d) Evaluate the most effective controls and document the results as necessary; and
(e) Select BACT.

In accordance with EPA guidance, the BACT analysis should take into account the energy, environmental, and economic impacts. Emission reductions may be achieved through the application of available control techniques, changes in process design, and/or operational limitations.

A summary of the BACT review for the fermentation process is provided in Section B.1, the BACT review for the distillation and dehydration process is provided in Section B.2, the BACT review for the DDGS dryers is provided in Section B.3, and the BACT review for the ethanol loadout is provided in Section B.4. These BACT determinations are based on the following information:

(a) The EPA RACT/BACT/LAER (RBLC) Clearinghouse; and
(b) State and local air quality permits.

Appendix B.1
Best Available Control Technology (BACT) Determination
For the Fermentation Process

Introduction:

Muncie Ethanol, LLC will use a fermentation process to produce ethanol from grain. The potential VOC emissions from this activity are estimated to be greater than 25 tons per year. Since this facility will be constructed after the January 1, 1980 applicability date and there are no other 326 IAC 8 rules applicable to this process, Muncie Ethanol, LLC is required to control the VOC emissions from the fermentation process using BACT, pursuant to 326 IAC 8-1-6.

Step 1 – Identify Control Options

The following available technologies were identified and evaluated to control VOC emissions from the fermentation process at ethanol production plants:

(a) IDEM, OAQ reviewed the following six control technologies:

1. Carbon Adsorption:

   Carbon adsorption is a process by which VOC is retained on a granular carbon surface, which is highly porous and has a very large surface-to-volume ratio. Organic vapors retained on the adsorbent are thereafter desorbed and both the adsorbate and absorbent are recovered.

   Carbon adsorption systems operate in two phases: adsorption and desorption. Adsorption is rapid and removes most of the VOCs in the stream. Eventually, the adsorbent becomes saturated with the vapors and the system's efficiency drops. The adsorbent must be regenerated or replaced soon after efficiency begins to decline. In regenerative systems, the adsorbent is reactivated with steam or hot air and the absorbate (solvent) is recovered for reuse or disposal. Non-regenerative systems require the removal of the adsorbent and replacement with fresh or previously regenerated carbon.

2. Wet Scrubbers:

   A wet scrubber is an absorption system in which the waste stream is dissolved in a solvent by passing it through a medium containing the solvent. Water is the most commonly used solvent. Other solvents may be used depending on the components of the waste stream.

3. Thermal Oxidation:

   An efficient thermal oxidizer design must provide adequate residence time for complete combustion, sufficiently high temperatures for VOC destruction, and adequate velocities to ensure proper mixing without quenching combustion. The type of burners and their arrangement affect combustion rates and residence time. The more thorough the contact between the flame and VOC, the shorter the time required for complete combustion. Natural gas is required to ignite the flue gas mixtures and maintain combustion temperatures. Typically, a heat exchanger upstream of the oxidizer uses the heat content of the oxidizer flue gas to preheat the incoming VOC-laden stream to improve the efficiency of the oxidizer.

   Of all the VOC control technologies evaluated, thermal oxidization is least affected by waste stream characteristics. A properly designed thermal oxidizer can handle almost all solvent mixtures (except for fluorinated or chlorinated solvents) and concentrations, and therefore meet all regulatory standards. In addition to the energy penalty associated with thermal oxidization, NOx emissions will be generated from the combustion of natural gas

used to fuel the oxidizer. A thermal oxidizer normally provides a VOC destruction efficiency of at least 98%.

4. Catalytic Oxidation:

In a catalytic oxidizer, a catalyst is used to lower the activation energy for oxidation. When a preheated gas stream is passed through a catalytic oxidizer, the catalyst bed initiates and promotes the oxidation of VOCs without being permanently altered itself. In catalytic oxidization, combustion occurs at significantly lower temperatures than that of direct flame units and can also achieve a destruction efficiency of 98%. However, steps must be taken to ensure complete combustion. The types of catalysts used include platinum, platinum alloys, copper chromate, copper oxide, chromium, manganese, and nickel. These catalysts are deposited in thin layers on an inert substrate, usually a honeycomb shaped ceramic.

5. Flare:

Flares can be used to control almost any VOC stream and can handle fluctuations in VOC concentration, flow rate, heat content, and inert content. Flaring is appropriate for continuous, batch, and variable flow vent stream application. Some streams, such as those containing halogenated or sulfur-containing compounds, are usually not flared because they corrode the flare tip or cause formation of secondary pollutants (such as acid gases or sulfur dioxide). A flare normally provides a VOC destruction efficiency greater than 98%.

6. Refrigeration Condenser:

Condensation is the process by which the temperature of the waste stream is lowered to below the boiling points of the waste constituents. A refrigeration condenser normally provides a VOC control efficiency greater than 90%.

(b) The search for the fermentation process in EPA's RACT/BACT/LAER Clearinghouse (RBLC) and Indiana Air Permits identified the following:

Plant	PBLD ID or Permit #	Date Issued and State	Facility	Control Technology and Permit Date	Stack Test Results and Dates
Ultimate Ethanol, LLC	F095-23482-00127	1/29/07 (IN)	Fermentation	Wet scrubber combined with a thermal oxidizer with an overall control efficiency of 98% or VOC < 10 ppmv. VOC emissions < 10.5 lbs/hr.	Under Construction
Cardinal Ethanol, LLC	F135-23226-00033	1/26/07 (IN)	Fermentation	Wet scrubber with a control efficiency of 98% or VOC < 20 ppmv. VOC emissions < 11.4 lbs/hr.	Under Construction
Abengoa Bioenergy of Indiana	F129-23484-00050	1/25/07 (IN)	Fermentation	Two (2) wet scrubbers combined with sodium bisulfite injection each with an overall control efficiency of 99% or VOC < 10 ppmv. VOC emissions < 8.21 lbs/hr.	Under Construction
DRS Ventures, LLC	F139-22981-00020	11/13/06 (IN)	Fermentation	Wet scrubber combined with a thermal oxidizer with an overall control efficiency of 98% or VOC < 10 ppmv. VOC emissions < 6.12 lbs/hr.	Under Construction
Central Indiana Ethanol, LLC	SPR 053-22564-00062	07/20/06 (IN)	Fermentation	Wet scrubber with a control efficiency of 98% or VOC < 20 ppmv. VOC emissions < 7.62 lbs/hr.	Under Construction
Premier Ethanol, LLC	F075-22858-00032	9/18/06(IN)	Fermentation	Wet scrubber combined with a thermal oxidizer with an overall control efficiency of 99% or VOC < 10 ppmv. VOC emissions < 10.5 lbs/hr.	Under Construction
Putnam Ethanol, LLC	SPM 133-22480-00003	3/23/06 (IN)	Fermentation	Wet scrubber with a control efficiency of 98% or VOC < 20 ppmv. VOC emissions < 5.85 lbs/hr.	Under Construction

Plant	PBLD ID or Permit #	Date Issued and State	Facility	Control Technology and Permit Date	Stack Test Results and Dates
The Andersons Clymers Ethanol, LLC	F017-21536-00023	2/15/06 (IN)	Fermentation	Wet scrubber with a control efficiency of 98% or VOC < 20 ppmv. VOC emissions < 7.5 lbs/hr.	Under Construction
ASA Linden, LLC	F017-21453-00061	2/8/06 (IN)	Fermentation	Wet scrubber with a control efficiency of 98% or VOC < 20 ppmv. VOC emissions < 10.2 lbs/hr.	Under Construction
Hartford Energy, LLC	F009-21592-00024	1/31/06 (IN)	Fermentation	Wet scrubber with a control efficiency of 98%. VOC emissions < 2.22 lbs/hr.	Under Construction
Central Indiana Ethanol, LLC	F053-21057-00062	08/04/05 (IN)	Fermentation	Wet scrubber with a control efficiency of 98% or VOC < 20 ppmv. VOC emissions < 6.0 lbs/hr.	Under Construction
United Wisconsin Grain Producers	WI-0204	8/14/03 (WI)	Fermentation	Wet scrubber (packed tower). VOC Emissions < 7.4 lbs/hr	Not Available
Michigan Ethanol	MI-0359	11/04/02 (MI)	Fermentation	BACT determined to be a scrubber with 97% control efficiency and VOC emissions < 6.0 lbs/hr	97.4% (03/19/03)
Grain Processing Corporation	IN-0075	06/10/97 (IN)	Fermentation	Scrubber with 95% control efficiency	Not Available
Cargill, Inc.	NE-0016	04/25/96 (NE)	Fermentation	BACT determined to be a wet scrubber with a VOC emission limit of 11.8 lbs/hr	Not Available

In addition to the RBLC data, IDEM obtained the following information for the fermentation processes at other ethanol production plants from ICM (an ethanol plant manufacturer):

Source, State	Max. Ethanol Production Rate (MMgal/yr)	Control Technology	Emission Limits	Stack Test Results and Dates
Agri-Energy*, MN	22	Wet scrubber and thermal oxidizer	95% removal or 10 ppm	0.58 lbs/hr (01/30/03)
Al-Corn*, MN	34.5	Wet scrubber	95% removal or 20 ppm for less than 200 ppm inlet	99.2%; 6.65 lbs/hr (01/21/03)
Central MN Ethanol*, MN	22	Wet scrubber	95% removal or 20 ppm for less than 200 ppm inlet	99.0%; 2.04 lbs/hr (11/27/02)
Corn Plus, MN	44	Wet scrubber	95% removal or 20 ppm for less than 200 ppm inlet	Not Available
CVEC, MN	49.5	Wet scrubber	95% removal or 20 ppm for less than 200 ppm inlet	Not Available
Diversified Energy Co.**, MN	20	Wet scrubber	95% removal or 20 ppm for less than 200 ppm inlet	2.74 lbs/hr (01/04)
Ethanol 2000**, MN	35	Wet scrubber	95% removal or 20 ppm for less than 200 ppm inlet	98.28%; 5.40 lbs/hr (12/04/02)
Agra Resources Coop. (dba EXOL), MN	50	Wet scrubber	95% removal or 20 ppm for less than 200 ppm inlet	Not Available
Pro-Corn, MN	50	Wet scrubber	95% removal or 20 ppm for less than 200 ppm inlet	5.11 lbs/hr (04/01/03)
ACE Ethanol*, WI	20	Wet scrubber	95% removal or 20 ppm for less than 200 ppm inlet	1.07 lbs/hr (11/20/02)
CMEC, MN	22	Wet scrubber	4.3 lbs/hr	98.98%; 2.88 lbs/hr (11/26/02)
MN Energy, MN	19	Wet scrubber	NA	23 lbs/hr (04/07/03)
Gopher State, MN	NA	2 wet scrubbers in series	98% collection efficiency	99.5%; 0.81 lbs/hr (07/09/03)

* lbs/hr as ethanol
** lbs/hr as carbon multiplied by the Midwest Scaling Factor of 2.0

Step 2 – Eliminate Technically Infeasible Control Options

After reviewing the above technologies, IDEM, OAQ eliminated carbon adsorption as not technically feasible for fermentation processes. The reasons for eliminating carbon adsorption are as follows:

Carbon Adsorption: Carbon adsorption uses intermolecular forces to accumulate organic material at the surface of an adsorbent (typically activated carbon). These intermolecular forces include the small momentary dipoles that result from the movement of electrons within molecular bonds (van der Waals

interactions). The incidence of van der Waals interactions increases with larger molecules because there are more bonds within each molecule. For this reason, carbon adsorption is most effective for larger molecules. The VOC compounds emitted from the fermentation system include several small molecules, such as ethanol (MW = 46), acetaldehyde (MW = 44), and formaldehyde (MW = 30). Due to the small size of these molecules, the van der Waals interactions are weak. Since carbon adsorption typically requires a VOC concentration of at least 200 to 1,000 ppmv and average VOC molecular weights of at least 50 to 60 atomic units, this technology is considered infeasible for controlling the VOC emissions from the fermentation system.

Step 3 – Rank Remaining Control Technologies by Control Effectiveness

Using the control efficiencies reported for similar sources, IDEM, OAQ has ranked the remaining control technologies as follows:

Control Technology	Control Efficiency
Wet Scrubber and Thermal Oxidizer	99% or <10 ppmv
Wet Scrubber	99% or <10 ppmv
Thermal Oxidizer	99% or <10 ppmv
Catalytic Oxidizer	98%
Flare	98%
Refrigeration Condenser	90%

Step 4 – Evaluate the Most Effective Controls and Document Results

IDEM is aware that some vendors have guaranteed control efficiencies of 99% to control similar processes for other proposed ethanol plants. However, BACT limitations do not necessarily need to reflect the highest possible control efficiency achievable by the technology on which the emission limitation is based. The permitting authority has discretion to base the emission limitation on a control efficiency that is somewhat lower than the optimal level. A wet scrubber, a thermal oxidizer, and the combination of a wet scrubber and thermal oxidizer are each capable of achieving the same level of control.

Step 5 – Select BACT

The Permittee proposes to use a wet scrubber as the BACT for the fermentation process. Pursuant to 326 IAC 8-1-6, IDEM, OAQ has determined that the following requirements represent BACT for the fermentation process at this source:

(a) The VOC emissions from the fermentation process shall be controlled by a wet scrubber.

(b) The overall VOC control efficiency for the wet scrubber (including the capture efficiency and absorption efficiency) shall be at least 98%, or the VOC outlet concentration shall not exceed 20 ppmv.

(c) The VOC emissions from the outlet of the wet scrubber shall not exceed 8.26 lbs/hr.

Appendix B.2
Best Available Control Technology (BACT) Determination
For Distillation and Dehydration Process

Introduction:

Muncie Ethanol, LLC will use distillation to concentrate the ethanol produced in the fermentation process. The potential VOC emissions from the distillation process are estimated to be greater than 25 tons per year. Since this facility will be constructed after the January 1, 1980 applicability date and there are no other 326 IAC 8 rules applicable to this process, Muncie Ethanol, LLC is required to implement BACT to comply with 326 IAC 8-1-6.

Step 1 – Identify Control Options

The following available technologies were identified and evaluated to control VOC emissions from the distillation and dehydration process at ethanol production plants:

(a) IDEM, OAQ reviewed the following six (6) control technologies. The detail description of each control technology can be found in Step 1 of Appendix B.1.

1. Carbon Adsorption;
2. Wet Scrubbers (packed tower);
3. Thermal Oxidation;
4. Catalytic Oxidation;
5. Flare; and
6. Refrigeration Condenser.

(b) The search for distillation processes in EPA's RACT/BACT/LAER Clearinghouse (RBLC) and Indiana Air Permits identified the following:

Plant	PBLD ID or Permit #	Date Issued and State	Facility	Control Technology and Permit Date	Stack Test Results and Dates
Ultimate Ethanol, LLC	F095-23482-00127	1/29/07 (IN)	Distillation	Wet scrubber combined with a thermal oxidizer with an overall control efficiency of 98% or VOC < 10 ppmv. VOC emissions < 10.5 lbs/hr.	Under Construction
Cardinal Ethanol, LLC	F135-23226-00033	1/26/07 (IN)	Distillation	TO/HRSG system with a control efficiency of 98% or VOC < 10ppmv. VOC emissions < 5.3 lbs/hr.	Under Construction
Abengoa Bioenergy of Indiana	F129-23484-00050	1/25/07 (IN)	Distillation	Wet scrubber combined with sodium bisulfite injection with an overall control efficiency of 99% or VOC < 10 ppmv. VOC emissions < 1.3 lbs/hr.	Under Construction
DRS Ventures, LLC	F139-22981-00020	11/13/06 (IN)	Distillation	Wet scrubber combined with a thermal oxidizer with an overall control efficiency of 98% or VOC < 10 ppmv. VOC emissions < 6.12 lbs/hr.	Under Construction
Central Indiana Ethanol, LLC	SPR 053-22564-00062	07/20/06 (IN)	Distillation/Dryers	RTOs with a control efficiency of 98% or VOC < 10 ppmv. VOC emissions < 7.5 lbs/hr.	Under Construction
Premier Ethanol, LLC	F075-22858-00032	9/18/06 (IN)	Distillation	Wet scrubber combined with a thermal oxidizer with an overall control efficiency of 99% or VOC < 10 ppmv. VOC emissions < 10.5 lbs/hr.	Under Construction

Plant	PBLD ID or Permit #	Date Issued and State	Facility	Control Technology and Permit Date	Stack Test Results and Dates
Putnam Ethanol, LLC	SPM 133-22480-00003	3/23/06 (IN)	Distillation	TO/HRSG system with a control efficiency of 98% or VOC < 10ppmv. VOC emissions < 10.5 lbs/hr	Under Construction
The Andersons Clymers Ethanol, LLC	F017-21536-00023	2/15/06 (IN)	Distillation and Evaporation processes	Two TO/HRSG systems with a control efficiency of 98% or VOC < 10ppmv. VOC emissions < 8.15 lbs/hr	Under Construction
ASA Linden, LLC	F017-21453-00061	2/8/06 (IN)	Distillation	Two TO/HRSG systems with a control efficiency of 98% or VOC < 10ppmv. VOC emissions < 8.5 lbs/hr	Under Construction
Hartford Energy, LLC	F009-21592-00024	1/31/06 (IN)	Distillation	TO/HRSG system with a control efficiency of 98%. VOC emissions < 10.56 lbs/hr	Under Construction
Central Indiana Ethanol, LLC	F053-21057-00062	08/04/05 (IN)	Fermentation/ Distillation	Wet scrubber with a control efficiency of 98% or VOC < 20 ppmv. VOC emissions < 6.0 lbs/hr.	Under Construction
United Wisconsin Grain Producers	WI-0204	8/14/03 (WI)	Distillation/Dryers	RTO with a control efficiency of 98% or VOC emissions < 5 ppm	Not Available
Michigan Ethanol	MI-0359	11/04/02 (MI)	Distillation	Wet scrubber with a control efficiency of 98%. VOC emissions < 0.46 lbs/hr	94.0% (03/19/03)
Grain Processing Corp.	IN-0075	06/10/97 (IN)	Distillation	Wet scrubber with a control efficiency of 95%	Not Available
Cargill, Inc.	NE-0016	04/25/96 (NE)	Distillation	Wet scrubber and a VOC emission limit of 2.22 lbs/hr	Not Available

In addition to the RBLC data, IDEM obtained the following information for distillation processes at other ethanol production plants from ICM (an ethanol plant manufacturer):

Source, State	Max. Ethanol Production Rate (MMgal/yr)	Control Technology	Emission Limits	Stack Test Results and Dates
Agri-Energy*, MN	22	Wet scrubber and thermal oxidizer	95% removal or 10 ppm	0.58 lbs/hr (01/30/03)
Al-Corn*, MN	34.5	Wet scrubber	95% removal or 20 ppm for less than 200 ppm inlet	99.2%; 6.65 lbs/hr (01/03)
Central MN Ethanol*, MN	22	Wet scrubber	95% removal or 20 ppm for less than 200 ppm inlet	99.0%; 2.04 lbs/hr (11/27/02)
Corn Plus, MN	44	Wet scrubber	95% removal or 20 ppm for less than 200 ppm inlet	Not Available
CVEC, MN	49.5	Wet scrubber	95% removal or 20 ppm for less than 200 ppm inlet	Not Available
Diversified Energy Co.**, MN	20	Wet scrubber	95% removal or 20 ppm for less than 200 ppm inlet	2.74 lbs/hr (01/04)
Ethanol 2000**, MN	35	Wet scrubber	95% removal or 20 ppm for less than 200 ppm inlet	5.40 lbs/hr (12/05/02)
Agra Resources Coop. (dba EXOL), MN	50	Wet scrubber	95% removal or 20 ppm for less than 200 ppm inlet	Not Available
Pro-Corn, MN	50	Wet scrubber	95% removal or 20 ppm for less than 200 ppm inlet	Not Available
ACE Ethanol*, WI	20	Wet scrubber	95% removal or 20 ppm for less than 200 ppm inlet	1.07 lbs/hr (11/20/02)

* lbs/hr as ethanol
** lbs/hr as carbon multiplied by the Midwest Scaling Factor of 2.0

Step 2 – Eliminate Technically Infeasible Control Options

IDEM, OAQ believes that carbon adsorption is not technically feasible for the control of VOC emissions from the distillation process. The primary VOC constituents emitted from this process are ethanol and acetaldehyde. Carbon adsorption is only technically feasible for VOC concentrations of 200 to 1,000 ppmv and an average VOC molecular weight of 50 to 60 atomic units.

Step 3 – Rank Remaining Control Technologies by Control Effectiveness

Using the control efficiencies reported for similar sources, IDEM, OAQ has ranked the remaining control technologies as follows:

Control Technology	Control Efficiency
Wet Scrubber and Thermal Oxidizer	99% or <10 ppmv
Wet Scrubber	99% or <10 ppmv
Thermal Oxidizer	99% or <10 ppmv
Catalytic Oxidizer	98%
Flare	98%
Refrigeration Condenser	90%

Step 4 – Evaluate the Most Effective Controls and Document Results

IDEM is aware that some vendors have guaranteed control efficiencies of 99% to control similar processes for other proposed ethanol plants. However, BACT limitations do not necessarily need to reflect the highest possible control efficiency achievable by the technology on which the emission limitation is based. The permitting authority has discretion to base the emission limitation on a control efficiency that is somewhat lower than the optimal level. A wet scrubber, a thermal oxidizer, and the combination of a wet scrubber and thermal oxidizer are each capable of achieving the same level of control.

Step 5 – Select BACT

The Permittee proposes to use a thermal oxidizer as the BACT for the distillation process. The exhausts from the distillation process, the DDGS dryers, and the ethanol loading racks will be controlled using the same thermal oxidizers (C09 and C10). The thermal oxidizers will vent to stack SV07. Pursuant to 326 IAC 8-1-6, IDEM, OAQ has determined that the following requirements represent BACT for the distillation process at this source:

(a) The VOC emissions from the distillation process shall be controlled by a wet scrubber identified as C08 followed by one of either two (2) thermal oxidizers, identified as C09 and C10.

(b) The overall VOC control efficiency for the wet scrubber and thermal oxidizer system (including the capture efficiency and destruction efficiency) shall be at least 98%, or the VOC outlet concentration shall not exceed 10 ppmv.

(c) The VOC emissions from the outlet of the thermal oxidizer stack (SV07) shall not exceed 11.8 lbs/hr.

Appendix B.3
Best Available Control Technology (BACT) Determination
For the DDGS Dryers (EU43 and EU48)

Introduction:

VOCs will be emitted from the DDGS drying process as trace quantities of alcohol from the fermentation process are evaporated. Other sources of VOC emissions result from the combustion of fuel in the dryers and the partial oxidation of organic material during the drying process. The potential VOC emissions from the DDGS dryers are greater than 25 tons per year and there are no other rules in 326 IAC 8 applicable to DDGS dryers; therefore, the Permittee is required to control the VOC emissions from the DDGS dryers with BACT.

Step 1 – Identify Control Options

The following available technologies were identified and evaluated to control VOC emissions from the dryers at ethanol production plants:

(a) IDEM, OAQ reviewed the following six (6) control technologies. The detail description of each control technology can be found in Step 1 of Appendix B.1.

1. Carbon Adsorption;
2. Wet Scrubbers;
3. Thermal Oxidation;
4. Catalytic Oxidation;
5. Flare; and
6. Refrigeration Condenser.

(b) The search for DDGS dryers in EPA's RACT/BACT/LAER Clearinghouse (RBLC) and Indiana Air Permits identified the following:

Plant	PBLD ID or Permit #	Date Issued and State	Facility	Control Technology and Permit Date	Stack Test Results and Dates
Ultimate Ethanol, LLC	F095-23482-00127	1/29/07 (IN)	Dryers	Thermal Oxidation with an overall control efficiency of 98% or VOC < 10 ppmv. VOC emissions < 10.5 lbs/hr.	Under Construction
Cardinal Ethanol, LLC	F135-23226-00033	1/26/07 (IN)	Dryers	TO/HRSG system with a control efficiency of 98% or VOC < 10ppmv. VOC emissions < 5.3 lbs/hr.	Under Construction
Abengoa Bioenergy of Indiana	F129-23484-00050	1/25/07 (IN)	Dryers	Thermal Oxidation with an overall control efficiency of 98% or VOC < 10 ppmv. VOC emissions < 1.97 lbs/hr.	Under Construction
DRS Ventures, LLC	F139-22981-00020	11/13/06 (IN)	Dryers	Thermal Oxidation with an overall control efficiency of 98% or VOC < 10 ppmv. VOC emissions < 2.0 lbs/hr.	Under Construction
Central Indiana Ethanol, LLC	SPR 053-22564-00062	07/20/06 (IN)	Distillation/Dryers	RTOs with a control efficiency of 98% or VOC < 10 ppmv. VOC emissions < 7.5 lbs/hr.	Under Construction
Premier Ethanol, LLC	F075-22858-00032	9/18/06 (IN)	Dryers	Thermal oxidizer with an overall control efficiency of 98% or VOC < 10 ppmv. VOC emissions < 10.5 lbs/hr.	Under Construction
Putnam Ethanol, LLC	SPM 133-22480-00003	3/23/06 (IN)	Dryers	TO/HRSG system with a control efficiency of 98% or VOC < 10 ppmv. VOC emissions < 10.5 lbs/hr	Under Construction
The Andersons Clymers Ethanol, LLC	F017-21536-00023	2/15/06 (IN)	Dryers	Two TO/HRSG systems with a control efficiency of 98% or VOC < 10 ppmv. VOC emissions < 8.15 lbs/hr	Under Construction

Plant	PBLD ID or Permit #	Date Issued and State	Facility	Control Technology and Permit Date	Stack Test Results and Dates
ASA Linden, LLC	F017-21453-00061	2/8/06 (IN)	Dryers	Two TO/HRSG systems with a control efficiency of 98% or VOC < 10 ppmv. VOC emissions < 8.5 lbs/hr	Under Construction
Hartford Energy, LLC	F009-21592-00024	1/31/06 (IN)	Dryers	TO/HRSG system with a control efficiency of 98%. VOC emissions < 10.56 lbs/hr	Under Construction
Central Indiana Ethanol, LLC	F053-21057-00062	08/04/05 (IN)	Dryers	RTO with a control efficiency of 98%. VOC emissions < 6.0 lbs/hr	Under Construction
United Wisconsin Grain Producers	WI-0204	8/14/03 (WI)	Distillation/Dryers	RTO with a control efficiency of 98% or VOC emissions < 5 ppm	Not Available
Michigan Ethanol	MI-0359	11/04/02 (MI)	Dryer	RTO with a control efficiency of 95%	99.6% (03/19/03)
Archer Daniels Midland Co.	IL-0087	12/27/02 (IL)	Feed Dryer	RTO with a control efficiency of 95% and VOC < 10 ppm	Not Available
New Energy Corp.	T141-6956-00033	Draft (IN)	DDGS Dryers	RTO with a control efficiency of 95%	98.8% (RTO1) 99.2% (RTO2) (06/30/04)

In addition to the RBLC data, IDEM obtained the following information for the DDGS drying processes at other ethanol production plants from ICM (an ethanol plant manufacturer):

Source, State	Max. Ethanol Production Rate (MMgal/yr)	Control Technology	Emission Limits	Stack Test Results and Dates
Ace Ethanol, WI	NA	RTO	96% reduction	NA
Agri-Energy, MN	22	RTO	95% destruction or 10 ppm	99.59% (01/28/03)
Al-Corn, MN	30	TO	95% destruction or 10 ppm	0.11 lbs/hr (08/03/04)
Central MN Ethanol, MN	22	Wet scrubber	95% destruction or 10 ppm	NA
Corn Plus, MN	44	TO or Boiler	95% destruction or 10 ppm	NA
CVEC, MN	49.5	RTO	95% destruction or 10 ppm	NA
Diversified Energy Co., MN	20	RTO	95% destruction or 10 ppm	NA
Ethanol 2000, MN	35	RTO	95% destruction or 10 ppm	97.74 %; 5.94 lbs/hr (10/31/02)
Agra Resources Coop. (dba EXOL), MN	50	RTO	95% destruction or 10 ppm	NA
Pro-Corn, MN	50	RTO	95% destruction or 10 ppm	97.7%; 3.54 lbs/hr (04/01/03)
Gopher State, MN	NA	RTO	95% destruction and 7.7 lbs/hr	1.225 lbs/hr (09/21/01)
EXOL, MN	NA	RTO	NA	0.42 lbs/hr (08/26/03)
DENCO, MN	30	RTO	6.0 lbs/hr	97.3%; 1.93 lbs/hr (01/20/04)

Step 2 – Eliminate Technically Infeasible Control Options

After reviewing the above technologies, IDEM, OAQ eliminated carbon adsorption, catalytic oxidation, flares, and refrigeration condensers as not technically feasible for DDGS drying processes. The reasons for eliminating these control technologies are as follows:

Carbon adsorption: Carbon adsorption typically requires a VOC concentration of at least 200 to 1,000 ppm and an average VOC molecular weight of at least 50 to 60 atomic units. Therefore, IDEM, OAQ concludes that carbon adsorption is not an effective control for the DDGS dryers due to the characteristics of the dryer exhaust gases.

Catalytic Oxidizer: Catalytic oxidizers use a catalyst to lower the operating temperature of the oxidation unit. The catalyst must remain effective during operation in order for the control efficiency of the device be maintained. Fouling of the catalyst will rapidly decrease the control efficiency. The catalyst material used for catalytic oxidation has small channels for the waste gas stream to flow through. As a result, particulate matter in the dryer exhaust gasses is likely to accumulate in the catalyst material, thereby fouling the catalyst and reducing the control efficiency. For this reason, IDEM, OAQ has concluded that

catalytic oxidation is an unreliable control technology for the dryers because of the presence of particulates in the exhaust gases.

Flares: Since flares do not maintain a constant combustion zone temperature, they require supplemental natural gas to enrich the waste gas stream if the VOC concentration is low. In order to increase the heat value of the DDGS dryer exhaust, natural gas must be added to the exhaust gases prior to the flare.

Refrigeration Condensers: OAQ believes that condensers would be technically infeasible because the dryer exhaust characteristics of low VOC concentration and high volumetric flow rate would make them ineffective.

Step 3 – Rank Remaining Control Technologies by Control Effectiveness

IDEM, OAQ has ranked the remaining control technologies by control efficiency as follows:

Control Technology	Control Efficiency
Thermal Oxidation	99% or < 10 ppmv
Wet Scrubber	Less than 96%*

* A wet scrubber applied to this type of operation will not achieve the level of control that a thermal oxidizer will because of the large flow rate and dilute VOC concentration. Mass transfer in a contact scrubber is driven by concentration. Elevated temperature and particulate matter are also negative properties of this gas stream that make wet scrubbing a less appropriate control technology than the alternatives. The control efficiency is based on a wet scrubber that was applied to a spent grain dryer at an ethanol plant in Luverne, MN.

Step 4 – Evaluate the Most Effective Controls and Document Results

IDEM is aware that some vendors have guaranteed control efficiencies of 99% to control similar processes for other proposed ethanol plants. However, BACT limitations do not necessarily need to reflect the highest possible control efficiency achievable by the technology on which the emission limitation is based. The permitting authority has discretion to base the emission limitation on a control efficiency that is somewhat lower than the optimal level.

Step 5 – Select BACT

The Permittee proposes to use a thermal oxidizer with a control efficiency of 98% to control the VOC emissions from the DDGS dryers. The exhausts from the distillation process, the DDGS dryers, and the ethanol loading racks will be controlled using the same thermal oxidizers (C09 and C10). The thermal oxidizers will vent to stack SV07. Pursuant to 326 IAC 8-1-6, IDEM, OAQ has determined that the following requirements represent BACT for the DDGS dryers at this source:

(a) The VOC emissions from the DDGS dryers (EU43 and EU48) shall be controlled by one of either two (2) thermal oxidizers, identified as C09 and C10.

(b) The overall VOC control efficiency for each of the thermal oxidizers, identified as C09 and C10 (including the capture efficiency and destruction efficiency) shall be at least 98%, or the VOC outlet concentration shall not exceed 10 ppmv.

(c) The VOC emissions from the outlet of the thermal oxidizer stack (SV07) shall not exceed 11.8 lbs/hr.

Appendix B.4
Best Available Control Technology (BACT) Determination
For Ethanol Loadout

Introduction:

Muncie Ethanol, LLC will ship denatured ethanol using either tank trucks or railcars. During loading, VOCs will be emitted as ethanol vapors and gases present in the tanks from previous cargos are displaced by liquid ethanol. The railcars are dedicated tanks, but the trucks may have previously been used to transport gasoline. The potential VOC emissions from this activity were calculated using the methodology in AP-42, Section 5.2, Transportation and Loading of Petroleum Liquids (1/95) and are estimated to be greater than 25 tons per year from the denatured ethanol loading operations (see calculations in Appendix A).

The potential VOC emissions from the ethanol loading rack are greater than 25 tons per year. Since this unit will be constructed after the January 1, 1980 applicability date and there are no other rules in 326 IAC 8 applicable to this unit, the Permittee is required to control the VOC emissions from the ethanol loading rack with BACT.

Step 1 – Identify Control Options

(a) IDEM, OAQ reviewed the following five (5) control technologies. The detailed description of each control technology can be found in Step 1 of Appendix B.1.

1. Carbon Adsorption;
2. Wet Scrubbers;
3. Thermal Oxidation;
4. Flare; and
5. Refrigeration Condenser.

(b) The search for ethanol loading processes in EPA's RACT/BACT/LAER Clearinghouse (RBLC) and Indiana Air Permits identified the following:

Plant	PBLD ID or Permit #	Date Issued and State	Facility	Control Technology and Permit Date	Stack Test Results and Dates
Ultimate Ethanol, LLC	F095-23482-00127	1/29/07 (IN)	Ethanol Loading Rack	Flare with a control efficiency of 98%. VOC emissions < 2.81 lbs/hr.	Under Construction
Cardinal Ethanol, LLC	F135-23226-00033	1/26/07 (IN)	Ethanol Loading Rack	Flare with a control efficiency of 98%. VOC emissions < 0.78 lbs/hr.	Under Construction
Abengoa Bioenergy of Indiana	F129-23484-00050	1/25/07 (IN)	Ethanol Loading Racks	Two (2) flares, each with a control efficiency of 98%. VOC emissions Truck and Railcar Loading < 8.96 lbs/hr. VOC emissions Barge Loading < 9.63 lbs/hr.	Under Construction
DRS Ventures, LLC	F139-22981-00020	11/13/06 (IN)	Ethanol Loading Rack	Flare with a control efficiency of 98%. VOC emissions < 0.26 lbs/hr.	Under Construction
Central Indiana Ethanol, LLC	SPR 053-22564-00062	07/20/06 (IN)	Ethanol Loading Rack	Flare with a control efficiency of 98%. VOC < 0.92 lbs/hr.	Under Construction
Premier Ethanol, LLC	F075-22858-00032	9/18/06 (IN)	Ethanol Loading Rack	Flare with a control efficiency of 98%. VOC emissions < 2.81 lbs/hr.	Under Construction
Putnam Ethanol, LLC	SPM 133-22480-00003	3/23/06 (IN)	Ethanol Loading Rack	Flare with a control efficiency of 98%. VOC emissions < 0.92 lbs/hr.	Under Construction
The Andersons Clymers Ethanol, LLC	F017-21536-00023	2/15/06 (IN)	Ethanol Loading Rack	Flare with a control efficiency of 98%. VOC emissions < 2.03 lbs/hr.	Under Construction
ASA Linden, LLC	F017-21453-00061	2/8/06 (IN)	Ethanol Loading Rack	Flare with a control efficiency of 98%. VOC emissions < 1.25 lbs/hr.	Under Construction

Hartford Energy, LLC	F009-21592-00024	1/31/06 (IN)	Ethanol Loading Rack	Flare with a control efficiency of 98%. VOC emissions < 0.0224 lbs per 1000 gallons of denatured ethanol, and < 0.70 tpy. Submerged fill loading that uses normal service.	Under Construction
Central Indiana Ethanol, LLC	F053-21057-00062	08/04/05 (IN)	Ethanol Loading Rack	Flare with a control efficiency of 98%	Under Construction
Motiva Enterprises, L.L.C.	CT-0149	10/22/03 (CT)	Fuel Loading Rack	Vapor recovery unit with carbon absorption unit	Not Available
United Wisconsin Grain Producers	WI-0204	8/14/03 (WI)	Ethanol Loading Rack	Flare with a control efficiency of 94%	Not Available
Archer Daniels Midland Co.	IL-0090	03/28/03 (IL)	Ethanol Loading Rack	Flare with a control efficiency of 95%	Not Available
Van Waters & Rogers	CA-0894	09/01/99 (CA)	Truck Loading Stations	Thermal oxidizer with a control efficiency of 95%	Not Available

IDEM obtained the following information for ethanol loadout processes at other ethanol production plants from ICM (an ethanol plant manufacturer):

Source, State	Max. Ethanol Production Rate (MMgal/yr)	Control Technology	Emission Limits
Agri-Energy, MN	22	DDGS Dryer/TO	Truck: 95% Destruction or 10ppm of VOC emissions from the thermal oxidizer. Railcar: dedicated ethanol vessels only
Al-Corn, MN	30	DDGS Dryer/TO	Truck: 95% Destruction or 10ppm of VOC emissions from the thermal oxidizer. Railcar: dedicated ethanol vessels only
Central MN Ethanol, MN	22	DDGS Dryer	Truck: Route to dryer control equipment Railcar: dedicated ethanol vessels only
Corn Plus, MN	44	Boiler/TO	95% destruction or 10 ppm limit for boiler
CVEC, MN	49.5	DDGS Dryer/TO	Truck: Route to dryer control equipment (95% reduction or 10 ppm) Railcar: Dedicated ethanol vessels only
Diversified Energy Co., MN	20	Flare	95% destruction
Ethanol 2000, MN	35	Flare	95% destruction
Agra Resources Coop. (dba EXOL), MN	50	DDGS Dryer/TO	Truck: 95% destruction or 10 ppm limit for VOC emissions from the thermal oxidizer
Pro-Corn, MN	50	Flare	95% destruction

Step 2 – Eliminate Technically Infeasible Control Options

After reviewing the above technologies, IDEM, OAQ eliminated carbon adsorption and wet scrubbers as not technically feasible for ethanol loadout processes. The reasons for eliminating these technologies are as follows:

Carbon Adsorption: Carbon adsorption is effective when there is sufficient VOC concentration and adequate van der Waals interactions. Because the primary VOC being emitted is ethanol, the van der Waals interactions would be minimal. Therefore, carbon adsorption is not typically used in this type of application. According to Calgon Carbon Industries, carbon adsorption is actually used in some applications to purify ethanol. This means that carbon adsorption is so ineffective at capturing ethanol that it is used to remove contaminants from ethanol. Therefore, carbon adsorption is considered technologically infeasible for controlling the VOC emissions from the ethanol loadout facility.

Wet Scrubbers: Wet scrubbers are reasonably effective for controlling VOC emissions when the VOCs are easily absorbed in water. Several characteristics control the effectiveness of wet scrubbers for VOC removal. The one parameter that can be easily analyzed to determine if wet scrubbing is effective is the solubility of the pollutants in the absorbent (water). The constituents in gasoline include many different organic compounds. Some of these compounds have limited solubility in water and, therefore, potentially affect the control efficiency of the scrubber. A significant amount of VOC emissions emitted during loadout arises from the displacement of petroleum or gasoline vapors present in the tank from the previous cargo. While the emissions from the ethanol would be effectively controlled by a wet scrubber, the VOC emissions resulting from the displacement of gasoline or petroleum vapors would not be effectively controlled by a wet scrubber.

Step 3 – Rank Remaining Control Technologies by Control Effectiveness

A condenser, thermal oxidizer, and flare are the only technically feasible control options for the ethanol loadout. IDEM, OAQ reviewed industry data to determine the VOC control efficiency of each of the remaining control technologies. The results of this review are summarized in the following table:

Control Technology	VOC Control Efficiency
Flare	98%
Thermal Oxidizer	99%
Refrigeration Condenser	Greater than 90%

Step 4 – Evaluate the Most Effective Controls and Document Results

IDEM is aware that some vendors have guaranteed control efficiencies of 99% to control similar processes for other proposed ethanol plants. However, BACT limitations do not necessarily need to reflect the highest possible control efficiency achievable by the technology on which the emission limitation is based. The permitting authority has discretion to base the emission limitation on a control efficiency that is somewhat lower than the optimal level

Step 5 – Select BACT

The Permittee proposes to use a thermal oxidizer with a control efficiency of 98% to control the VOC emissions from ethanol loadout. The exhausts from the distillation process, the DDGS dryers, and the ethanol loading racks will be controlled using the same thermal oxidizers (C09 and C10). The thermal oxidizers will vent to stack SV07. Pursuant to 326 IAC 8-1-6, IDEM, OAQ has determined that the following requirements represent BACT for the ethanol loading racks at this source:

(a) The VOC emissions from the ethanol loading racks shall be controlled by one of either two (2) thermal oxidizers, identified as C09 and C10.

(b) The overall VOC control efficiency for each of the thermal oxidizers, identified as C09 and C10 (including the capture efficiency and destruction efficiency) shall be at least 98%, or the VOC outlet concentration shall not exceed 10 ppmv.

(c) The VOC emissions from the outlet of the thermal oxidizer stack (SV07) shall not exceed 11.8 lbs/hr.

Appendix A: Emission Calculations
PM and PM10 Emissions
From Grain Receiving and Handling Operations

Company Name: Muncie Ethanol, LLC
Address: Intersection of State Highway 3 and E 800 North, Muncie, IN 47302
FESOP: 035-23723-00020
Reviewer: ERG/MP
Date: November 30, 2006

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)
C01	Grain Receiving	Baghouse	0.005	30,000	1.29	5.63	99%	563
C02	Corn Storage Bin #1	Bin Vent Filter	0.01	600	0.05	0.23	99%	22.5
C03	Corn Storage Bin #2	Bin Vent Filter	0.01	600	0.05	0.23	99%	22.5
C14	Corn Storage Bin #3	Bin Vent Filter	0.01	600	0.05	0.23	99%	22.5
C04	Surge Bin	Bin Vent Filter	0.01	300	0.03	0.11	99%	11.3
C05	Hammermill Baghouse #1	Baghouse	0.005	9,000	0.39	1.69	99%	169
C06	Hammermill Baghouse #2	Baghouse	0.005	9,000	0.39	1.69	99%	169
Total						9.80		980

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 PM/PM10 - Fugitive Emissions:

Unit Description	Annual Throughput Limit (tons/yr)	Uncontrolled PM Emission Factor (lbs/ton)	Uncontrolled PM10 Emission Factor (lbs/ton)	Capture Efficiency (%)	Fugitive PM Emissions (tons/yr)	Fugitive PM10 Emissions (tons/yr)
Grain Receiving - Straight Truck	346,067	0.180	0.059	90%	3.11	1.02
Grain Receiving - Hopper Truck	807,491	0.035	0.008	90%	1.41	0.32
				Total	**4.53**	**1.34**

Note: Emission factors are from AP-42, Chapter 9.9.1 - Grain Elevators, Table 9.9.1-1 (04/03). Assume all the grain receiving and loadout is by truck, which is the worst case scenario.
Capture efficiency reflects that the 90% of emissions will be captured and controlled through the Grain Receiving baghouse C01.

Methodology

Fugitive PM/PM10 (tons/yr) = Annual Throughput Limit (tons/yr) x Uncontrolled Emission Factor (lbs/ton) x (1-Capture Efficiency%) x 1 ton/2000 lbs

Appendix A: Emission Calculations
VOC and HAP Emissions
Fermentation Process

Company Name: Muncie Ethanol, LLC
Address: Intersection of State Highway 3 and E 800 North, Muncie, IN 47302
FESOP: 035-23723-00020
Reviewer: ERG/MP
Date: November 30, 2006

1. Process Description:

Maximum Throughput Rate: 110 MMgal/yr of ethanol
Control Equipment: Wet Scrubber C07

2. Potential to Emit (PTE) of VOC and HAP from Fermentation:

Pollutant	Emission Rate after Control (lbs/hr)*	PTE after Control (tons/yr)
VOC	8.26	36.2
HAP		
Acetaldehyde	1.28	5.62
Acrolein	0.013	0.06
Methanol	0.029	0.13
Formaldehyde	0.029	0.13
Total HAPs	**1.35**	**5.93**

* 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/hr) x 8,760 hr/yr x 1 ton/2000 lbs

Appendix A: Emission Calculations
Criteria and HAP Emissions
Regenerative Thermal Oxidizer Stacks
From the Distillation Scrubber (C08), two 95 MMBtu/hr DDGS Dryers (EU43 and EU48) and DDGS Coolers (EU44 and EU49), Ethanol Loading Racks (EU45 and EU46), and two 18 MMBtu/hr RTO's (C09 and C10)

Company Name: Muncie Ethanol, LLC
Address: Intersection of State Highway 3 and E 800 North, Muncie, IN 47302
FESOP: 035-23723-00020
Reviewer: ERG/MP
Date: November 30, 2006

1. Process Description:

The Regenerative Thermal Oxidizers control emissions from the DDGS Dryers, coolers, the distillation process, and ethanol loadout.

2. Process and Combustion Emissions - Criteria Pollutants (dryers, coolers, distillation, loadout)

Pollutant	Emission Rate after Control (lbs/hr)*	PTE after Control (tons/yr)
VOC	11.8	51.6
PM/PM10	9.60	42.0
PM/PM10 (WDGS)**	1.37	6.0
CO	15.3	67.0
SO2	14.0	61.3
NOx	12.3	53.9

* 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.
** During WDGS production, the RTO's only control emissions from the distillation process and ethanol loadout. DDGS drying represents facility-wide worst-case emissions.

Methodology
PTE after Control (tons/yr) = Emission Rate after Control (lbs/hr) x 8,760 hr/yr x 1 ton/2000 lbs

3. Process HAP Emissions - (dryers, coolers, distillation)

Pollutant	Emission Rate after Control (lbs/hr)*	PTE after Control (tons/yr)
Acetaldehyde	0.93	4.07
Acrolein	0.25	1.10
Formaldehyde	0.13	0.57
Methanol	0.34	1.50
Total HAPs	1.65	7.24

* Emission factors provided by the source based on stack test results from similar facilities, scaled linearly based on production capacity.
See page 6 for HAP calculations for loadout operations.

Methodology
PTE after Control (tons/yr) = Emission Rate after Control (lbs/hr) x 8,760 hr/yr x 1 ton/2000 lbs

4. Combustion HAP Emissions

Heat Input Capacity MMBtu/hr		Potential Throughput MMCF/yr
226.0	(36 MMBtu/hr from RTO's, 190 MMBtu/hr Dryers)	1940.9

HAPs - Organics

	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor in lb/MMCF	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission in tons/yr	2.04E-03	1.16E-03	7.28E-02	1.75E+00	3.30E-03

HAPs - Metals

	Lead	Cadmuim	Chromium	Manganese	Nickel
Emission Factor in lb/MMCF	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission in tons/yr	4.85E-04	1.07E-03	1.36E-03	3.69E-04	2.04E-03

Emission Factors from AP-42, Chapter 1.4, Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03
(AP-42 Supplement D 3/98)
The five highest organic and metal HAPs emission factors are provided above. Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Methodology
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,020 MMBtu
Potential Emission in tons/yr = Potential Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

4. Total Organic HAP Emissions from the RTO Stack

Emissions Type		Total HAP PTE after Control (tons/yr)	Total HAP PTE after Control (lb/hr)
Process HAP Emissions		7.24	1.65
Combustion HAP Emissions		1.83	0.42
Loadout HAP Emissions (see page 6)		0.30	0.07
	Total	9.36	2.14

Appendix A: Emission Calculations
Natural Gas Combustion
MMBTU/HR < 100
(EU53, EU54, EU55, EU56)
(92.4 MMBtu/hr each)

Company Name: Muncie Ethanol, LLC
Address: Intersection of State Highway 3 and E 800 North, Muncie, IN 47302
FESOP: 035-23723-00020
Reviewer: ERG/MP
Date: November 30, 2006

Heat Input Capacity
MMBtu/hr

369.6 (92.4 MMBtu/hr each)

1. Criteria Pollutant Emissions

Pollutant	Emission Factor (lb/MMBtu)*	PTE (tons/yr)	PTE (lb/hr)
VOC	0.002	3.24	0.74
PM	0.0019	3.02	0.69
PM10	0.005	8.09	1.85
CO	0.018	29.1	6.65
SO2	0.0006	0.97	0.22
NOx	0.024	38.9	8.87

* All emission factors provided by the source based on manufacturer guarantee, except SO2 and PM emission factors which come from AP-42, Section 1.4, Table 1.4-2.

Methodology
PTE (tons/yr) = Emission Factor (lb/MMBtu) x Heat Input Capacity (MMBtu/hr) x 8,760 hr/yr x 1 ton/2000 lbs

2. HAP Emissions

Potential Throughput
MMCF/yr

3174.2

HAPs - Organics

	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor in lb/MMCF	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission in tons/yr	3.33E-03	1.90E-03	0.12	2.86	5.40E-03

HAPs - Metals

	Lead	Cadmuim	Chromium	Manganese	Nickel
Emission Factor in lb/MMCF	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission in tons/yr	7.94E-04	1.75E-03	2.22E-03	6.03E-04	3.33E-03

Emission Factors from AP-42, Chapter 1.4, Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (AP-42 Supplement D 3/98)
The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Methodology
All Emission factors are based on normal firing.

Potential Throughput (MMCF/yr) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,020 MMBtu
Potential Emission in tons/yr = Potential Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

Appendix A: Emission Calculations
PM and PM10 Emissions
From DDGS Handling and Loadout Operations

Company Name: Muncie Ethanol, LLC
Address: Intersection of State Highway 3 and E 800 North, Muncie, IN 47302
FESOP: 035-23723-00020
Reviewer: ERG/MP
Date: November 30, 2006

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)
C13	DDGS Handling and Loadout	Baghouse	0.005	6,800	0.29	1.28	99%	128
Total						1.28		128

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 PM/PM10 - Fugitive Emissions:

Unit ID	Unit Description	Annual Throughput Limit (tons/yr)	Uncontrolled PM Emission Factor (lbs/ton)	Uncontrolled PM10 Emission Factor (lbs/ton)	Capture Efficiency (%)	Fugitive PM Emissions (tons/yr)	Fugitive PM10 Emissions (tons/yr)
	DDGS Handling and Loadout Fugitives	360,487	0.0860	0.0290	90%	1.55	0.52
Total						**1.55**	**0.52**

Note: Emission factors are from AP-42, Chapter 9.9.1 - Grain Elevators, Table 9.9.1-2 (03/03).
Capture efficiency reflects that 90% of emissions will be captured and controlled through the DDGS Handling and Loadout baghouse C08.

Methodology

Fugitive PM/PM10 (tons/yr) = Annual Throughput Limit (tons/yr) x Uncontrolled Emission Factor (lbs/ton) x (1-Capture Efficiency%) x 1 ton/2000 lbs

Appendix A: Emission Calculations
VOC and HAP Emissions from Ethanol Loading Racks

Company Name: Muncie Ethanol, LLC
Address: Intersection of State Highway 3 and E 800 North, Muncie, IN 47302
FESOP: 035-23723-00020
Reviewer: ERG/MP
Date: November 30, 2006

1. Emission Factors: AP-42

Denatured ethanol will be shipped by either truck or 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 one of the RTOs (see calculations on page 3).

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 x (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	4.9722	66	515.72	7.93
Gasoline (clean cargo)	0.5	4.9722	66	515.72	3.96
Denatured Ethanol (normal)	0.6	0.72	49.6	515.72	0.52
Denatured Ethanol (clean cargo)	0.5	0.72	49.6	515.72	0.43

Therefore, the emission factor for loading denatured ethanol to the trucks which stored gasoline previously
= L (gasoline, normal) - L (gasoline, clean cargo) + L (denatured ethanol, clean cargo) = 4.40 (lbs/kgal)

2. Potential to Emit VOC Before Control:

(1) Assume all ethanol loaded out via truck:
Loading rate for trucks: 115.5 MMgal/yr
PTE of VOC before Control (tons/yr) = 115.5 MMgal/yr x 4.40 lbs/kgal x 1 ton/2000 lbs = **254 tons/yr**

(2) Assume all ethanol loaded out via rail:
Loading rate for rail: 115.5 MMgal/yr
PTE of VOC before Control (tons/yr) = 115.5 MMgal/yr x 0.52 lbs/kgal x 1 ton/2000 lbs = **30.0 tons/yr**

3. Limited Potential to Emit:

Annual Production Limit: 115,500 kgal/yr (total)
RTO Control Efficiency: 98%

(1) Assume all ethanol loaded out via truck (controlled by RTO):
PTE of VOC from truck loading (tons/yr) = 4.40 lbs/kgal x 115,500 kgal/yr x (1-98%) x 1 ton/2000 lbs = **5.08 tons/yr**

(2) Assume all denatured ethanol is loaded to railcars (controlled by RTO):
PTE of VOC (tons/yr) = 0.52 lbs/kgal x 115,500 kgal/yr x (1-98%) x 1 ton/2000 lbs = **0.60 tons/yr**

Worst case scenario is when loading 115.5 MMgal/yr denatured ethanol to trucks = 5.08 tons/yr
(Note that the VOC emissions from the Loading Rack are included in the VOC total for the RTO found on page 3.)

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)	HAP after Control (tons/yr)
Benzene	2.50E-03	0.63	1.27E-02
Ethyl benzene	5.00E-05	0.01	2.54E-04
Cumene	1.00E-04	0.03	5.08E-04
Xylenes	5.00E-04	0.13	2.54E-03
Toluene	5.00E-03	1.27	2.54E-02
Carbon Disulfide	2.00E-05	0.01	1.02E-04
n-Hexane	5.00E-02	12.70	2.54E-01
Acetaldehyde	2.00E-04	0.05	1.02E-03
Methanol	2.00E-04	0.05	1.02E-03
Total		14.9	0.30

* This is the HAP fraction for gasoline vapors, except for Acetaldehyde and Methanol which are from ethanol vapors.
(Note that the HAP emissions from the Loading Rack are not included in the HAP total for the RTO found on page 3.)

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 %

Appendix A: Emission Calculations
Criteria Pollutants
From the Emergency Generators (EU57 and EU58 @3,196 HP each)

Company Name: Muncie Ethanol, LLC
Address: Intersection of State Highway 3 and E 800 North, Muncie, IN 47302
FESOP: 035-23723-00020
Reviewer: ERG/MP
Date: November 30, 2006

Power Output Horse Power (HP)	Limited Operating Hours hr/yr
6,392	100

	Pollutant					
	PM	PM10	SO2	NO_x	VOC	CO
Emission Factor in (lb/hp-hr)*	0.0007	0.0007	0.0004	0.0152	0.0007	0.0055
Potential Emissions (tons/yr)	19.6	19.6	11.3	425.6	19.7	154.0
Limited Emissions (tons/yr)	0.22	0.22	0.13	4.86	0.23	1.76

Methodology

* PM, PM10, SO2, CO, and VOC Emission Factors are from AP42 (Supplement B 10/96), Table 3.4-1. NOx Emission Factor based on vendor guarantee.
Potential Emissions (tons/yr) = Power Output (HP) x Emission Factor (lb/hp-hr) x 8,760 (hr/yr) x 1 ton/2,000 lb
Limited Emissions (tons/yr) = Power Output (HP) x Emission Factor (lb/hp-hr) x Limited Operating Hours (hr/yr) x 1 ton/2,000 lb

Appendix A: Emission Calculations
Fugitive Emissions From Paved and Unpaved Roads

Company Name: Muncie Ethanol, LLC
Address: Intersection of State Highway 3 and E 800 North, Muncie, IN 47302
FESOP: 035-23723-00020
Reviewer: ERG/MP
Date: November 30, 2006

1. Emission Factors: AP-42

According to AP-42, Chapter 13.2.1 - Paved Roads (12/03), the PM/PM10 emission factors for paved roads can be estimated from the following equation:

$$E = (k \times (sL/2)^a \times (w/3)^b - C) \times (1 - p/(4 \times 365))$$

where:

E =	emission factor (lb/vehicle mile traveled)	
sL (non-Winter) =	road surface silt loading (g/m^2) =	0.6 (g/m^2) (AP-42, Table 13.2.1-3)
sL (Winter) =	sL (non-Winter) x 4 (g/m^2) =	2.4 (g/m^2) (AP-42, Table 13.2.1-3)
w =	mean vehicle weight (tons) =	29.0 tons
k =	empirical constant =	0.082 for PM and 0.016 for PM10
a =	empirical constant =	0.65
b =	empirical constant =	1.5
C =	emission factor for exhaust, brake and tire wear	0.00047 for PM and PM10
p =	number of days per year with 0.01 inches precipitation	117

PM Emission Factor (non-Winter) = $(0.082 \times (0.6/2)^{0.65} \times (29/3)^{1.5} - 0.00047) \times (1 - 117/1460)$ = **1.04** lbs/mile
PM10 Emission Factor (non-Winter) = $(0.016 \times (0.6/2)^{0.65} \times (29/3)^{1.5} - 0.00047) \times (1 - 117/1460)$ = **0.20** lbs/mile

PM Emission Factor (Winter) = $(0.082 \times (2.4/2)^{0.65} \times (29/3)^{1.5} - 0.00047) \times (1 - 117/1460)$ = **2.55** lbs/mile
PM10 Emission Factor (Winter) = $(0.016 \times (2.4/2)^{0.65} \times (29/3)^{1.5} - 0.00047) \times (1 - 117/1460)$ = **0.50** lbs/mile

PM Emission Factor (Average Annual) = ((PM Emission Factor (non-Winter) x 9) + (PM Emission Factor (Winter) x 3))/12
PM Emission Factor (Average Annual) = **1.42** lbs/mile
PM10 Emission Factor (Average Annual) = ((PM10 Emission Factor (non-Winter) x 9) + (PM10 Emission Factor (Winter) x 3))/12
PM10 Emission Factor (Average Annual) = **0.28** lbs/mile

2. Potential to Emit (PTE) of PM/PM10 from Paved Roads:

Vehicle Type	Ave Weight of Vehicles* (tons)	Maximum Trip Number* (trips/yr)	Round Trip Distance* (mile/trip)	Vehicle Mile Traveled (VMT) (miles/yr)	Traffic Component (%)	Component Vehicle Weight (tons)	PTE of PM (tons/yr)	PTE of PM10 (tons/yr)
Denaturant Receiving	29.0	688	0.98	674	0.7%	0.19	0.5	0.09
Ethanol Loadout	29.0	14,438	0.98	14,149	13.7%	3.98	10.01	1.95
Grain Receiving	29.0	46,142	0.91	41,989	40.7%	11.80	29.71	5.78
DDGS Loadout	29.0	14,419	0.91	13,121	12.71%	3.69	9.28	1.81
Wet DGS Loadout	29.0	36,574	0.91	33,282	32.25%	9.35	23.55	4.58
Total **				**103,216**	**100%**	**29.0**	**49.5**	**9.6**

* This information is provided by the source.
** Total emissions do not include emissions from WDGS Loadout as drying DGS represents worst-case facility-wide emissions.

Methodology

Vehicle Mile Traveled (miles/yr) = Trip Number (trips/yr) x Round Trip Distance (mile/trip)
Traffic Component (%) = VMT / Total VMT
Component Vehicle Weight = Ave. Weight of Vehicles (tons) x Traffic Component (%)
PTE of PM/PM10 before Control (tons/yr) = VMT (miles/yr) x PM/PM10 Emission Factors (Average Annual) x 1 ton/2000 lbs

3. Potential to Emit (PTE) of PM/PM10 after Control from Paved Roads:

The source will use periodic sweeping to control the fugitive dust emissions.
The control efficiency from sweeping is assumed to be 50%.

PTE of PM after Control = 49.5 tons/yr x (1-50%) = **24.74 tons/yr**

PTE of PM10 after Control = 9.62 tons/yr x (1-50%) = **4.81 tons/yr**

4. Unpaved Road Emission Factors: AP-42

According to AP-42, Section 13.2.2 Unpaved Roads, November 2006, the PM/PM10 emission factors for unpaved roads can be estimated from the following equation:

lbs/VMT Equation: $E = k\,(s/12)^a\,(W/3)^b\,[(365 - P)/365]$

Where:

Particle size multiplier	k	4.9	dimensionless (PM-30 or TSP)	1.5	dimensionless PM-10
surface material silt content (%)	s	8.5	Table 13.2.2-1		
mean vehicle weight	W	5.00	tons		
Equation constants	a	0.7	PM-30 or TSP Table 13.2.2-2	0.9	PM-10 Table 13.2.2-2
	b	0.45	PM-30 or TSP Table 13.2.2-2	0.45	PM-10 Table 13.2.2-2
days with at least 0.01" precipitation	P	117			

PM Emission Factor = $(4.9) \times (8.5/12)^{0.7} \times (5/3)^{0.45}$ [(365-117)/365] = **3.29** lbs/mile
PM10 Emission Factor = $(1.5) \times (8.5/12)^{0.9} \times (5/3)^{0.45}$ [(365-117)/365] = **0.94** lbs/mile

5. Potential to Emit (PTE) of PM/PM10 from unpaved Roads:

Emission Area	Vehicle Weight (tons)	Unpaved Total VMT	Total Vehicle Emissions (lb/yr)	Total Vehicle Emissions (tpy)
Maintenance Roads (PM)	5.00	263	866	**0.43**
Maintenance Roads (PM10)	5.00	263	247	**0.12**

Methodology

Total Vehicle Emissions (tons/yr) = Unpaved Total VMT (miles/yr) x PM/PM10 Emission Factors x 1 ton/2000 lbs

Appendix A: Emission Calculations
Equipment Leaks - VOC and HAP Emissions

Company Name: Muncie Ethanol, LLC
Address: Intersection of State Highway 3 and E 800 North, Muncie, IN 47302
FESOP: 035-23723-00020
Reviewer: ERG/MP
Date: November 30, 2006

1. Fugitive VOC Emissions from Fermentation:

Equipment Component Source	Product	Component Count*	Emission Factor** (kg/hr/source)	Subpart VV Control Effectiveness*** (%)	VOC Weight %	Fugitive VOC Emissions (tons/yr)
Valves	Gas/Vapor	0	0.00597	87%	13%	0.00
Valves	Light Liquid	146	0.00403	84%	13%	0.12
Pumps	Light Liquid	8	0.0199	69%	13%	0.06
Pressure Relief Valves	Gas/Vapor	10	0.104	95%	13%	0.07
Open-Ended Lines	All	14	0.0017	84%	13%	0.00
Flanges/Connectors	All	76	0.00183	84%	13%	0.03
Total						**0.28**

2. Fugitive VOC Emissions from Distillation:

Equipment Component Source	Product	Component Count*	Emission Factor** (kg/hr/source)	Subpart VV Control Effectiveness*** (%)	VOC Weight %	Fugitive VOC Emissions (tons/yr)
Valves	Gas/Vapor	206	0.00597	87%	81.7%	1.26
Valves	Light Liquid	0	0.00403	84%	81.7%	0.00
Pumps	Light Liquid	8	0.0199	69%	81.7%	0.39
Pressure Relief Valves	Gas/Vapor	2	0.104	95%	81.7%	0.08
Open-Ended Lines	All	70	0.0017	84%	81.7%	0.15
Flanges/Connectors	All	76	0.00183	84%	81.7%	0.18
Total						**2.06**

3. Fugitive VOC Emissions from Tank Farm:

Equipment Component Source	Product	Component Count*	Emission Factor** (kg/hr/source)	Subpart VV Control Effectiveness*** (%)	VOC Weight %	Fugitive VOC Emissions (tons/yr)
Valves	Gas/Vapor	0	0.00597	87%	100%	0.00
Valves	Light Liquid	52	0.00403	84%	100%	0.32
Pumps	Light Liquid	8	0.0199	69%	100%	0.48
Pressure Relief Valves	Gas/Vapor	0	0.104	95%	100%	0.00
Open-Ended Lines	All	14	0.0017	84%	100%	0.04
Flanges/Connectors	All	76	0.00183	84%	100%	0.21
Total						**1.05**

Methodology (1 through 3)
* Component count estimated based on similar ethanol plants.
** Emission factors are from Protocol for Equipment leak Emission Estimates, EPA-453/R-95-017.
*** Control Effectiveness is from Protocol for Equipment leak Emission Estimates, EPA-453/R-95-017, Table 5-2.
Fugitive VOC Emissions (tons/yr) = Component Count x Emission Factor (kg/hr/source) x (1 lb/0.45359 kg) x 8760 hr/yr x 1 ton/2000 lbs x (1-Control Effectiveness) x VOC Weight %

4. Fugitive VOC Emissions - Total:

Equipment Component Source	Total Fugitive VOC Emissions (tons/yr)
Valves	1.26
Valves	0.44
Pumps	0.93
Pressure Relief Valves	0.15
Open-Ended Lines	0.19
Flanges/Connectors	0.42
Total	**3.39**

Methodology
Total Fugitive VOC Emissions (tons/yr) = (Fugitive VOC Emissions from Fermentation) + (Fugitive VOC Emissions from Distillation) + (Fugitive VOC Emissions from Tank Farm)

5. Fugitive HAP Emissions:

HAP	HAP Fraction*	Fugitive HAP Emissions (tons/yr)
Acetaldehyde	2.00E-04	6.78E-04
Methanol	2.00E-04	6.78E-04
Benzene	2.50E-03	8.47E-03
Carbon Disulfide	2.00E-05	6.78E-05
Cumene	1.00E-04	3.39E-04
Ethylbenzene	5.00E-05	1.69E-04
n-Hexane	5.00E-02	1.69E-01
Toluene	5.00E-03	1.69E-02
Xylenes	5.00E-04	1.69E-03
Total		**0.198**

* This is the HAP fraction based on stack testing of similar sources.

Methodology
Fugitive HAP Emissions (tons/yr) = Total Fugitive VOC Emissions (tons/yr) x HAP Fraction

Appendix A: Emission Calculations
PM/PM10 Emissions
From the the Cooling Tower

Company Name: Muncie Ethanol, LLC
Address: Intersection of State Highway 3 and E 800 North, Muncie, IN 47302
FESOP: 035-23723-00020
Reviewer: ERG/MP
Date: November 30, 2006

1. Process Description:

Type of Cooling Tower:	Induced Draft	
Circulation Flow Rate:	30,000	gal/min
Total Drift:	0.005%	of the circulating flow
Total Dissolved Solids:	2,500	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) = 30,000 gal/min x 60 min/hr x 0.005% x 8.345 lbs/gal x 2,500 ppm x 1/1,000,000 ppm = **1.88 lbs/hr**

PTE of PM/PM10 (tons/yr) = 1.88 lbs/hr x 8760 hr/yr x 1 ton/2000 lbs = **8.2 tons/yr**

Appendix A: Emission Calculations
Combustion Emissions
Insignificant Combustion Activities - Natural Gas-fired Space Heaters

Company Name: Muncie Ethanol, LLC
Address: Intersection of State Highway 3 and E 800 North, Muncie, IN 47302
FESOP: 035-23723-00020
Reviewer: ERG/MP
Date: November 30, 2006

Maximum Heat Input MMBtu/hr	Potential Througput MMCF/yr
2.5	22.3

	Pollutant					
	PM	PM10	SO2	NO_x	VOC	CO
Emission Factor*	1.9	7.6	0.6	100.0	5.5	84.0
Units	lb/MMCF	lb/MMCF	lb/MMCF	lb/MMCF	lb/MMCF	lb/MMCF
Potential Emission in tons/yr	2.12E-02	8.49E-02	6.70E-03	1.12E+00	6.14E-02	9.38E-01

* Emission factors from Fifth Edition AP-42, Section 1.4, "Natural Gas Combustion", 7/98.

Methodology
Potential Throughput (MMCF/yr) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,020 MMBtu
Potential Emission in tons/yr = Potential Throughput (MMCF/yr) x Emission Factor (lb/MMCF) * 1 ton/2000lbs

Appendix A: Emission Calculations
PTE Summary

Company Name: Muncie Ethanol, LLC
Address: Intersection of State Highway 3 and E 800 North, Muncie, IN 47302
FESOP: 035-23723-00020
Reviewer: ERG/MP
Date: November 30, 2006

1. Limited Potential To Emit after Control - Criteria Pollutants

Emission Units	PM	PM10	SO_2	NO_x	VOC	CO	Total HAPs
Grain Receiving and Handling	9.80	9.80	-	-	-	-	-
Grain Receiving - Fugitive	4.53	1.34	-	-	-	-	-
Fermentation	-	-	-	-	36.2	-	5.93
RTO Sytem (Distillation, Dryers, Cooling, Loadout)	42.0	42.0	61.3	53.9	51.6	67.0	9.1
Boilers	3.02	8.09	0.97	38.9	3.2	29.1	3.00
DDGS Handling and Loadout	1.28	1.28	-	-	-	-	-
DDGS Loadout - Fugitive	1.55	0.52	-	-	-	-	-
Wet Cake Storage*	-	-	-	-	See Note	-	See Note
Ethanol Loadout**	-	-	-	-	See Note	-	0.30
Paved Roads (Fugitive)	24.7	4.81	-	-	-	-	-
Unpaved Roads (Fugitive)	0.43	0.12					
Cooling Tower	8.22	8.22	-	-	-	-	-
Emergency Generators	0.22	0.22	0.13	4.86	0.23	1.76	Negligible
Insignificant Space Heaters	0.02	0.08	0.01	1.12	0.06	0.94	
Storage Tanks***	-	-	-	-	2.00	-	0.27
Leaks	-	-	-	-	3.39	-	0.20
Other Insignificant Activities	1.00	1.00	-	-	1.00	-	-
Total PTE	**96.9**	**77.6**	**62.4**	**98.7**	**97.7**	**98.8**	**18.8**

Note:
* This plant is capable of producing both DDGS and MDGS. 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.
** VOC emissions from ethanol loadout are included in the total for the RTO.
*** Emissions from the storage tanks were calculated by the Permittee using EPA TANKS software (version 4.0) and have been verified.