



Mitchell E. Daniels, Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
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TO: Interested Parties / Applicant
DATE: August 4, 2005
RE: Central Indiana Ethanol / 053-21057-00062
FROM: Paul Dubenetzky
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 1/10/05



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FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP) OFFICE OF AIR QUALITY

**Central Indiana Ethanol, LLC
NW ¼, Section 3, T24N, R7E
Marion, Indiana 46952**

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

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

This permit is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-8 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17. This permit also addresses new source review requirements and is intended to fulfill the new source review procedures and permit revision requirements pursuant to 326 IAC 2-8-11.1, applicable to those conditions.

Operation Permit No.: F053-21057-00062	
Original signed by: Paul Dubenetzky, Branch Chief Office of Air Quality	Issuance Date: August 4, 2005 Expiration Date: August 4, 2010

TABLE OF CONTENTS

SECTION A	SOURCE SUMMARY	8
A.1	General Information [326 IAC 2-8-3(b)]	
A.2	Emission Units and Pollution Control Equipment Summary [326 IAC 2-8-3(c)(3)]	
A.3	Insignificant Activities [326 IAC 2-7-1(21)] [326 IAC 2-8-3(c)(3)(I)]	
A.4	FESOP Applicability [326 IAC 2-8-2]	
SECTION B	GENERAL CONDITIONS	12
B.1	Permit No Defense [IC 13]	
B.2	Definitions [326 IAC 2-8-1]	
B.3	Permit Term [326 IAC 2-8-4(2)][326 IAC 2-1.1-9.5]	
B.4	Enforceability [326 IAC 2-8-6]	
B.5	Termination of Right to Operate [326 IAC 2-8-9][326 IAC 2-8-3(h)]	
B.6	Severability [326 IAC 2-8-4(4)]	
B.7	Property Rights or Exclusive Privilege [326 IAC 2-8-4(5)(D)]	
B.8	Duty to Provide Information[326 IAC 2-8-4(5)(E)]	
B.9	Compliance Order Issuance [326 IAC 2-8-5(b)]	
B.10	Certification [326 IAC 2-8-3(d)] [326 IAC 2-8-4(3)(C)(i)] [326 IAC 2-8-5(1)]	
B.11	Annual Compliance Certification [326 IAC 2-8-5(a)(1)]	
B.12	Preventive Maintenance Plan [326 IAC 1-6-3][326 IAC 2-8-4(9)][326 IAC 2-8-5(a)(1)]	
B.13	Emergency Provisions [326 IAC 2-8-12]	
B.14	Deviations from Permit Requirements and Conditions [326 IAC 2-8-4(3)(C)(ii)]	
B.15	Permit Modification, Reopening, Revocation and Reissuance, or Termination [326 IAC 2-8-4(5)(C)][326 IAC 2-8-7(a)][326 IAC 2-8-8]	
B.16	Permit Renewal [326 IAC 2-8-3(h)]	
B.17	Permit Amendment or Revision [326 IAC 2-8-10][326 IAC 2-8-11.1]	
B.18	Operational Flexibility [326 IAC 2-8-15][326 IAC 2-8-11.1]	
B.19	Permit Revision Requirement [326 IAC 2-8-11.1]	
B.20	Inspection and Entry [326 IAC 2-8-5(a)(2)][IC 13-14-2-2][IC 13-17-3-2][IC 13-30-3-1]	
B.21	Transfer of Ownership or Operational Control [326 IAC 2-8-10]	
B.22	Annual Fee Payment [326 IAC 2-7-19][326 IAC 2-8-4(6)] [326 IAC 2-8-16] [326 IAC 2-1.1-7]	
B.23	Credible Evidence [326 IAC 2-8-4(3)][326 IAC 2-8-5][62 FR 8314][326 IAC 1-1-6]	
SECTION C	SOURCE OPERATION CONDITIONS	21
	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 [40 CFR 52 Subpart P][326 IAC 6-3-2]	
C.2	Overall Source Limit [326 IAC 2-8] [326 IAC 2-2]	
C.3	Opacity [326 IAC 5-1]	
C.4	Open Burning [326 IAC 4-1][IC 13-17-9]	
C.5	Incineration [326 IAC 4-2] [326 IAC 9-1-2(3)]	
C.6	Fugitive Dust Emissions [326 IAC 6-4]	
C.7	Operation of Equipment [326 IAC 2-8-5(a)(4)]	
C.8	Stack Height [326 IAC 1-7]	
C.9	Asbestos Abatement Projects [326 IAC 14-10] [326 IAC 18] [40 CFR 61 Subpart M]	
	Testing Requirements [326 IAC 2-8-4(3)]	
C.10	Performance Testing [326 IAC 3-6]	
	Compliance Requirements [326 IAC 2-1.1-11]	
C.11	Compliance Requirements [326 IAC 2-1.1-11]	

TABLE OF CONTENTS (Continued)

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)]
- C.13 Monitoring Methods [326 IAC 3][40 CFR 60][40 CFR 63]
- C.14 Pressure Gauge and Other Instrument Specifications [326 IAC 2-1.1-11] [326 IAC 2-8-4(3)] [326 IAC 2-8-5(1)]

Corrective Actions and Response Steps [326 IAC 2-8-4] [326 IAC 2-8-5]

- C.15 Risk Management Plan [326 IAC 2-8-4] [40 CFR 68]
- C.16 Compliance Response Plan -Preparation, Implementation, Records, and Reports [326 IAC 2-8-4][326 IAC 2-8-5]
- C.17 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-8-4] [326 IAC 2-8-5]

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

Stratospheric Ozone Protection

- C.20 Compliance with 40 CFR 82 and 326 IAC 22-1

SECTION D.1 FACILITY OPERATION CONDITIONS – Boilers 28

Construction Conditions

General Construction Conditions

- D.1.1 Permit No Defense
- D.1.2 Federally Enforceable State Operating Permit [326 IAC 2-8]

Effective Date of the Permit

- D.1.3 Effective Date of the Permit [IC13-15-5-3]
- D.1.4 Modification to Construction Conditions [326 IAC 2]

Operation Conditions

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

- D.1.5 FESOP Limits [326 IAC 2-8-4] [326 IAC 2-2]
- D.1.6 General Provisions Relating to NSPS [326 IAC 12-1][40 CFR Part 60, Subpart A]
- D.1.7 NSPS Requirements [326 IAC 12-1][40 CFR 60, Subpart Dc]
- D.1.8 Particulate Emissions [326 IAC 6-2-4]
- D.1.9 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

Compliance Determination Requirements

- D.1.10 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11]

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

- D.1.11 Record Keeping Requirements
- D.1.12 Reporting Requirements

SECTION D.2 FACILITY OPERATION CONDITIONS – Grain Receiving and Handling Processes 30

Construction Conditions

General Construction Conditions

- D.2.1 Permit No Defense
- D.2.2 Federally Enforceable State Operating Permit [326 IAC 2-8]

TABLE OF CONTENTS (Continued)

Effective Date of the Permit

- D.2.3 Effective Date of the Permit [IC13-15-5-3]
- D.2.4 Modification to Construction Conditions [326 IAC 2]

Operation Conditions

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

- D.2.5 PM and PM10 Emissions [326 IAC 2-2] [326 IAC 2-8-4]
- D.2.6 Particulate Emission Limitations [326 IAC 6-3-2]
- D.2.7 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

Compliance Determination Requirements

- D.2.8 Particulate Control
- D.2.9 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11]

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

- D.2.10 Visible Emissions Notations
- D.2.11 Parametric Monitoring
- D.2.12 Baghouse Inspections
- D.2.13 Broken or Failed Bag Detection

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

- D.2.14 Record Keeping Requirements
- D.2.15 Reporting Requirements

SECTION D.3 FACILITY OPERATION CONDITIONS – Fermentation and Distillation Process..... 35

Construction Conditions

General Construction Conditions

- D.3.1 Permit No Defense
- D.3.2 Federally Enforceable State Operating Permit [326 IAC 2-8]

Effective Date of the Permit

- D.3.3 Effective Date of the Permit [IC13-15-5-3]
- D.3.4 Modification to Construction Conditions [326 IAC 2]

Operation Conditions

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

- D.3.5 VOC and HAP Emissions [326 IAC 2-2] [326 IAC 2-8-4] [326 IAC 2-4.1]
- D.3.6 VOC Emissions [326 IAC 8-1-6]
- D.3.7 General Provisions Relating to NSPS [326 IAC 12-1][40 CFR Part 60, Subpart A]
- D.3.8 Equipment Leaks of VOC [326 IAC 12][40 CFR 60, Subpart VV]
- D.3.9 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

Compliance Determination Requirements

- D.3.10 VOC and HAP Control
- D.3.11 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11]

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

- D.3.12 Parametric Monitoring
- D.3.13 Scrubber Inspections

TABLE OF CONTENTS (Continued)

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

D.3.14 Record Keeping Requirements

SECTION D.4 FACILITY OPERATION CONDITIONS – DDGS Drying and Cooling Process..... 38

Construction Conditions

General Construction Conditions

D.4.1 Permit No Defense

D.4.2 Federally Enforceable State Operating Permit [326 IAC 2-8]

Effective Date of the Permit

D.4.3 Effective Date of the Permit [IC13-15-5-3]

D.4.4 Modification to Construction Conditions [326 IAC 2]

Operation Conditions

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

D.4.5 FESOP Limits [326 IAC 2-2] [326 IAC 2-8-4] [326 IAC 2-4.1]

D.4.6 VOC Emissions [326 IAC 8-1-6]

D.4.7 Particulate Emission Limitations [326 IAC 6-3-2]

D.4.8 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

Compliance Determination Requirements

D.4.9 PM and PM10 Control

D.4.10 VOC and HAP Control

D.4.11 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11] [326 IAC 2-2]

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

D.4.12 Visible Emissions Notations

D.4.13 Thermal Oxidizer Temperature

D.4.14 Parametric Monitoring

D.4.15 Cyclone Inspections

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

D.4.16 Record Keeping Requirements

D.4.17 Reporting Requirements

SECTION D.5 FACILITY OPERATION CONDITIONS – Ethanol Loading Rack..... 42

Construction Conditions

General Construction Conditions

D.5.1 Permit No Defense

D.5.2 Federally Enforceable State Operating Permit [326 IAC 2-8]

Effective Date of the Permit

D.5.3 Effective Date of the Permit [IC13-15-5-3]

D.5.4 Modification to Construction Conditions [326 IAC 2]

Operation Conditions

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

D.5.5 FESOP Limits [326 IAC 2-2] [326 IAC 2-8-4] [326 IAC 2-4.1]

D.5.6 VOC Emissions [326 IAC 8-1-6]

D.5.7 General Provisions Relating to NSPS [326 IAC 12-1][40 CFR Part 60, Subpart A]

TABLE OF CONTENTS (Continued)

D.5.8 Equipment Leaks of VOC [326 IAC 12][40 CFR 60, Subpart VV]
D.5.9 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

Compliance Determination Requirements
D.5.10 VOC and HAP Control
D.5.11 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11] [326 IAC 2-2]
D.5.12 Flare Pilot Flame

Record Keeping and Reporting Requirement [326 IAC 2-8-4(3)] [326 IAC 2-8-16]
D.5.13 Record Keeping Requirements
D.5.14 Reporting Requirements

SECTION D.6 FACILITY OPERATION CONDITIONS – Cooling Tower..... 45

Emission Limitations and Standards [326 IAC 2-8-4(1)]
D.6.1 Particulate Matter (PM) [40 CFR 52, Subpart P]

SECTION D.7 FACILITY OPERATION CONDITIONS – Storage Tanks..... 46

Emission Limitations and Standards [326 IAC 2-8-4(1)]
D.7.1 Volatile Organic Compounds (VOC) [326 IAC 8-9]
D.7.2 General Provisions Relating to NSPS [326 IAC 12-1][40 CFR Part 60, Subpart A]
D.7.3 Storage Tanks [326 IAC 12][40 CFR 60, Subpart Kb]
D.7.4 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

Compliance Monitoring Requirements [326 IAC 2-8-4] [326 IAC 2-8-5(a)(1)]
D.7.5 Testing and Procedures [40 CFR 60, Subpart Kb] [326 IAC 12]

Record Keeping and Reporting Requirement [326 IAC 2-8-4(3)] [326 IAC 2-8-16]
D.7.6 Record Keeping Requirements

SECTION D.8 FACILITY OPERATION CONDITIONS – Other Insignificant Activities..... 50

SECTION E.1 40 CFR 60, Subpart VV - Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry..... 51

Emission Limitations and Standards [326 IAC 2-8-4(1)]
E.1.1 Standards: Pumps in Light Liquid Service [326 IAC 12][40 CFR 60, Subpart VV]
E.1.2 Standards: Pressure Relief Devices in Gas/Vapor Service [326 IAC 12][40 CFR 60, Subpart VV]
E.1.3 Standards: Sampling Connection Systems [326 IAC 12][40 CFR 60, Subpart VV]
E.1.4 Standards: Open-Ended Valves or Lines [326 IAC 12][40 CFR 60, Subpart VV]
E.1.5 Standards: Valves in Gas/Vapor Service and in Light Liquid Service [326 IAC 12][40 CFR 60, Subpart VV]
E.1.6 Standards: Pumps and Valves in Heavy Liquid Service, Pressure Relief Devices in Light Liquid or Heavy Liquid Service, and Connectors [326 IAC 12][40 CFR 60, Subpart VV]
E.1.7 Standards: Closed Vent Systems and Control Devices [326 IAC 12][40 CFR 60, Subpart VV]
E.1.8 Standards: Delay of Repair [326 IAC 12][40 CFR 60, Subpart VV]

Compliance Determination Requirements
E.1.9 Test Methods and Procedures [326 IAC 12][40 CFR 60, Subpart VV]

Record Keeping and Reporting Requirement [326 IAC 2-8-4(3)] [326 IAC 2-8-16]
E.1.10 Recordkeeping Requirements [326 IAC 12][40 CFR 60, Subpart VV]
E.1.11 Reporting Requirements [326 IAC 12][40 CFR 60, Subpart VV]

TABLE OF CONTENTS (Continued)

Certification Form	64
Emergency Occurrence Form	65
Semi- Annual Natural Gas Fired Boiler Form	67
Quarterly Report Form	68-73
Quarterly Deviation and Compliance Monitoring Report Form	74

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.

Authorized individual:	President
Source Address:	NW ¼, Section 3, T24N, R7E, Marion, Indiana 46952
Mailing Address:	P.O. Box 650, Sweetser, Indiana 46987
General Source Phone:	(765) 384-4001
SIC Code:	2869
County Location:	Grant County
Source Location Status:	Attainment for all other criteria pollutants
Source Status:	Federally Enforceable State Operating Permit (FESOP) Minor Source, under PSD Rules 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 stationary emission units and pollution control devices:

- (a) Two (2) natural gas fired trim boilers, identified as EU046 and EU047, constructed in 2005, each with a maximum heat input capacity of 94.5 MMBtu/hr, using propane as a back-up fuel, and exhausting through stacks EP011 and EP012, respectively.
- (b) One (1) corn dump pit, identified as EU001, constructed in 2005, with a maximum throughput rate of 1,120 tons of corn per hour, controlled by baghouse CE001, and exhausting through stack EP001.
- (c) One (1) grain handling operation, constructed in 2005, controlled by baghouse CE002, exhausting through stack EP002, and consisting of the following:
 - (1) One (1) corn conveyor, identified as EU002, with a maximum throughput rate of 1,120 tons per hour.
 - (2) One (1) corn elevator, identified as EU003, with a maximum throughput rate of 1,120 tons per hour.
 - (3) Two (2) corn storage bins, identified as EU004 and EU005, each with a maximum capacity of 802,000 bushels and maximum throughput rate of 560 tons per hour.
 - (4) One (1) scalper, identified as EU006, with a maximum throughput rate of 140 tons per hour.
 - (5) One (1) surge bin, identified as EU007, with a maximum throughput rate of 140 tons per hour.
- (d) One (1) hammermill, identified as EU010, constructed in 2005, with a maximum throughput rate of 140 tons of corn per hour, controlled by baghouses CE003, and exhausting through stack EP003.

- (e) One (1) hammermill, identified as EU011, constructed in 2005, with a maximum throughput rate of 140 tons of corn per hour, controlled by baghouses CE004, and exhausting through stack EP004.
- (f) One (1) fermentation process, constructed in 2005, with a maximum throughput rate of 7,060 gallons of ethanol per hour, controlled by CO₂ scrubber CE005, exhausting through stack EP005, and consisting of the following:
 - (1) One (1) liquefaction tank, identified as EU014.
 - (2) One (1) yeast tank, identified as EU015.
 - (3) Three (3) fermenters, identified as EU016, EU017, and EU018.
- (g) One (1) distillation and dehydration process, constructed in 2005, with a maximum throughput rate of 6,850 gallons of ethanol per hour, controlled by CO₂ scrubber CE005, exhausting through stack EP005, and consisting of the following:
 - (1) One (1) beer well, identified as EU020.
 - (2) One (1) beer stripper, identified as EU021.
 - (3) One (1) side stripper, identified as EU022.
 - (4) One (1) rectifier, identified as EU023.
 - (5) One (1) molecular sieve, identified as EU024.
 - (6) One (1) evaporator, identified as EU025.
 - (7) Four (4) centrifuges, identified as EU026 through EU029.
- (h) One (1) Dried Distillers Grain and Solubles (DDGS) drying and cooling process, constructed in 2005, controlled by regenerative thermal oxidizer (RTO) CE007, which uses natural gas and propane as fuels and has a maximum heat input capacity of 12 MMBtu/hr, and exhausting through stack EP007. This process consists of the following:
 - (1) One (1) natural gas fired DDGS dryer, identified as EU035, with a maximum heat input rate of 94.9 MMBtu/hr and a maximum throughput rate of 34 tons of DDGS per hour, using propane as a back-up fuel, controlled by multicyclone CE006 and RTO CE007, and exhausting to stack EP007.
 - (2) One (1) DDGS cooler, identified as EU036, with a maximum throughput rate of 34 tons of DDGS per hour, controlled by RTO CE007, and exhausting to stack EP007.
- (i) One (1) DDGS loadout operation, constructed in 2005 with a maximum throughput rate of 101 tons per hour, controlled by baghouse CE008, exhausting to stack EP008, and consisting of the following:
 - (1) One (1) DDGS dump pit, identified as EU040.
 - (2) One (1) DDGS elevator, identified as EU041.
 - (3) One (1) DDGS conveyor, identified as EU042.
 - (4) One (1) DDGS load spout, identified as EU043.

- (j) One (1) ethanol loading rack for both railcar and truck loading, identified as EU045, constructed in 2005, with a maximum throughput rate of 96,000 gallons per hour. Railcars are dedicated to carrying denatured ethanol product. Trucks are not dedicated to carrying denatured ethanol. The truck loading process is controlled by the enclosed flare CE009, which is fueled by natural gas and has a maximum heat input capacity of 10.0 MMBtu/hr, and exhausts through stack EP009.

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, as defined in 326 IAC 2-7-1(21):

- (a) Solvent recycling systems with batch capacity less than or equal to 100 gallons.
- (b) Forced and induced draft cooling tower system not regulated under a NESHAP.
- (c) Replacement or repair of electrostatic precipitators, bags in baghouses and filters in other air filtration equipment.
- (d) Heat exchanger cleaning and repair.
- (e) Process vessel degassing and cleaning to prepare for internal repairs.
- (f) Paved and unpaved roads and parking lots with public access.
- (g) Blowdown for any of the following: sight glass; boiler; compressors; pumps; and cooling tower.
- (h) Stationary fire pumps.
- (i) Farm operations.
- (j) Other emission units, not regulated by a NESHAP, with PM₁₀, NO_x, and SO₂ emissions less than five (5) pounds per hour or twenty-five (25) pounds per day, CO emissions less than twenty-five (25) pounds per day, VOC emissions less than three (3) pounds per hour or fifteen (15) pounds per day, lead emissions less than six-tenths (0.6) tons per year or three and twenty-nine hundredths (3.29) pounds per day, and emitting greater than one (1) pound per day but less than five (5) pounds per day or one (1) ton per year of a single HAP, or emitting greater than one (1) pound per day but less than twelve and five tenths (12.5) pounds per day or two and five tenths (2.5) ton per year of any combination of HAPs:
 - (1) One (1) 190 proof tank, identified as T001, constructed in 2005, with a maximum capacity of 160,000 gallons.
 - (2) One (1) denaturant tank, identified as T002, constructed in 2005, with a maximum capacity of 55,500 gallons of natural gasoline.
 - (3) One (1) denatured ethanol tank, identified as T003, constructed in 2005, with a maximum capacity of 792,000 gallons.
 - (4) Two (2) shift tanks, identified as T004 and T005, constructed in 2005, each with a maximum capacity of 160,000 gallons of 200-proof ethanol.
 - (5) One (1) emergency generator, identified as EU034, constructed in 2005, with a maximum power output rate of 1,788 horsepower and a maximum operating time of 500 hours per year, and exhausting to stack EP006.

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 Permit No Defense [IC 13]

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.

B.2 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.3 Permit Term [326 IAC 2-8-4(2)] [326 IAC 2-1.1-9.5]

This permit 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.

B.4 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.5 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.6 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.7 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.8 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 the "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.9 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.10 Certification [326 IAC 2-8-3(d)] [326 IAC 2-8-4(3)(C)(i)] [326 IAC 2-8-5(1)]

- (a) Where specifically designated by this permit or required by an applicable requirement, any application form, report, or compliance certification submitted shall contain certification by an authorized individual of truth, accuracy, and completeness. This

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

- (b) One (1) certification shall be included, using the attached Certification Form, with each submittal requiring certification. One (1) certification may cover multiple forms in one (1) submittal.
- (c) An authorized individual is defined at 326 IAC 2-1.1-1(1).

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

- (a) The Permittee shall annually submit a compliance certification report which addresses the status of the source's compliance with the terms and conditions contained in this permit, including emission limitations, standards, or work practices. The initial certification shall cover the time period from the date of final permit issuance through December 31 of the same year. All subsequent certifications shall cover the time period from January 1 to December 31 of the previous year, and shall be submitted in letter form 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

- (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, 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 the "authorized individual" as defined by 326 IAC 2-1.1-1(1).

B.12 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) within ninety (90) days after issuance of this permit, 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

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

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

B.13 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 describes 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;

IDEM:

Telephone No.: 1-800-451-6027 (ask for Office of Air Quality, Compliance Section) or,
Telephone No.: 317-233-5674 (ask for Compliance Section)

Facsimile No.: 317-233-5967

- (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

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 the "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) 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.14 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 Provision), 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

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

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

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

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

- (b) Timely Submittal of Permit Renewal [326 IAC 2-8-3]

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

(A) Submitted at least nine (9) months prior to the date of the expiration of this permit; and

(B) 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.

- (2) If IDEM, OAQ upon receiving a timely and complete 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.

- (c) Right to Operate After Application for Renewal [326 IAC 2-8-9]

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 needed to process the application.

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

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

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

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

Any such application shall be certified by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).

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

- (d) No permit amendment or modification is required for the addition, operation or removal of a nonroad engine, as defined in 40 CFR 89.2.

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

- (a) The Permittee may make any change or changes at this source that are described in 326 IAC 2-8-15(b) through (d), without 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 emissions allowable under 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

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 which document, on a rolling five (5) year basis, all such changes and emissions trading that are subject to 326 IAC 2-8-15(b) through (d) and makes such records available, upon reasonable request, to 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 increases and decreases in emissions 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 [326 IAC 2-8-15(d)]**
The Permittee may make changes at the source within the range of alternative operating scenarios that are described in the terms and conditions of this permit in accordance with 326 IAC 2-8-4(7). No prior notification of IDEM, OAQ or U.S. EPA is required.
- (d) Backup fuel switches specifically addressed in, and limited under, Section D of this permit shall not be considered alternative operating scenarios. Therefore, the notification requirements of part (a) of this condition do not apply.

B.19 Permit Revision 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.20 Inspection and Entry [326 IAC 2-8-5(a)(2)][IC 13-14-2-2][IC 13-17-3-2][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.21 Transfer of Ownership or Operational Control [326 IAC 2-8-10]

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

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

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

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

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

- (a) The Permittee shall pay annual fees to IDEM, OAQ, 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.23 Credible Evidence [326 IAC 2-8-4(3)][326 IAC 2-8-5][62 FR 8314][326 IAC 1-1-6]

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

SECTION C SOURCE OPERATION CONDITIONS

Entire Source

Emissions 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 [40 CFR 52 Subpart P][326 IAC 6-3-2]

- (1) Pursuant to 40 CFR 52 Subpart P, particulate matter emissions from any process not already regulated by 326 IAC 6-1 or any New Source Performance Standard, and which has a maximum process weight rate less than 100 pounds per hour shall not exceed 0.551 pounds per hour.
- (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] [326 IAC 2-2]

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 also 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 also 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(3)]

The Permittee shall not operate an incinerator or incinerate any waste or refuse except as provided in 326 IAC 4-2 and in 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 Operation of Equipment [326 IAC 2-8-5(a)(4)]

Except as otherwise provided by statute, rule or in this permit, all air pollution control equipment listed in this permit and used to comply with an applicable requirement shall be operated at all times that the emission units vented to the control equipment are in operation.

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

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 the "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. The requirement to use an Indiana Accredited Asbestos inspector is not federally enforceable.

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

C.10 Performance Testing [326 IAC 3-6]

- (a) All testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), except as provided elsewhere in this permit, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.

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

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204

no later than thirty-five (35) days prior to the intended test date. The protocol submitted by the Permittee does not require certification by the "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 the "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:

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

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

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

Unless otherwise specified in the approval for the new emissions unit, 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 Pressure Gauge and Other Instrument Specifications [326 IAC 2-1.1-11] [326 IAC 2-8-4(3)] [326 IAC 2-8-5(1)]

- (a) Whenever a condition in this permit requires the measurement of pressure drop across any part of the unit or its control device, the gauge employed shall have a scale such that the expected normal reading shall be no less than twenty percent (20%) of full scale and be accurate within plus or minus two percent ($\pm 2\%$) of full scale reading.
- (b) Whenever a condition in this permit requires the measurement of a temperature or flow rate, the instrument employed shall have a scale such that the expected normal reading shall be no less than twenty percent (20%) of full scale and be accurate within plus or minus two percent ($\pm 2\%$) of full scale reading.
- (c) The Permittee may request the IDEM, OAQ approve the use of a pressure gauge or other instrument that does not meet the above specifications provided the Permittee can demonstrate an alternative pressure gauge or other instrument specification will adequately ensure compliance with permit conditions requiring the measurement of pressure drop or other 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 Compliance Response Plan - Preparation, Implementation, Records, and Reports [326 IAC 2-8-4] [326 IAC 2-8-5]

(a) The Permittee is required to prepare a Compliance Response Plan (CRP) for each compliance monitoring condition of this permit. If a Permittee is required to have an Operation, Maintenance and Monitoring (OMM) Plan under 40 CFR 60, such plans shall be deemed to satisfy the requirements for a CRP for those compliance monitoring conditions. A CRP shall be submitted to IDEM, OAQ upon request. The CRP shall be prepared within ninety (90) days after issuance of this permit by the Permittee, supplemented from time to time by the Permittee, maintained on site, and is comprised of:

- (1) Reasonable response steps that may be implemented in the event that a response step is needed pursuant to the requirements of Section D of this permit; and an expected time frame for taking reasonable response steps.
- (2) If, at any time, the Permittee takes reasonable response steps that are not set forth in the Permittee's current Compliance Response Plan or Operation, Maintenance and Monitoring (OMM) Plan and the Permittee documents such response in accordance with subsection (e) below, the Permittee shall amend its Compliance Response Plan or Operation, Maintenance and Monitoring (OMM) Plan to include such response steps taken.

The OMM Plan shall be submitted within the time frames specified by the applicable 40 CFR 60/63 requirement.

(b) For each compliance monitoring condition of this permit, reasonable response steps shall be taken when indicated by the provisions of that compliance monitoring condition as follows:

- (1) Reasonable response steps shall be taken as set forth in the Permittee's current Compliance Response Plan or Operation, Maintenance and Monitoring (OMM) Plan; or
- (2) If none of the reasonable response steps listed in the Compliance Response Plan or Operation, Maintenance and Monitoring (OMM) Plan is applicable or responsive to the excursion, the Permittee shall devise and implement additional response steps as expeditiously as practical. Taking such additional response steps shall not be considered a deviation from this permit so long as the Permittee documents such response steps in accordance with this condition.
- (3) If the Permittee determines that additional response steps would necessitate that the emissions unit or control device be shut down, and it will be ten (10) days or more until the unit or device will be shut down, then the Permittee shall promptly notify the IDEM, OAQ of the expected date of the shut down. The notification shall also include the status of the applicable compliance monitoring parameter with respect to normal, and the results of the response actions taken up to the time of notification.
- (4) Failure to take reasonable response steps shall be considered a deviation from the permit.

- (c) The Permittee is not required to take any further response steps for any of the following reasons:
 - (1) A false reading occurs due to the malfunction of the monitoring equipment and prompt action was taken to correct the monitoring equipment.
 - (2) The Permittee has determined that the compliance monitoring parameters established in the permit conditions are technically inappropriate, has previously submitted a request for an administrative amendment to the permit, and such request has not been denied.
 - (3) An automatic measurement was taken when the process was not operating.
 - (4) The process has already returned or is returning to operating within "normal" parameters and no response steps are required.
- (d) When implementing reasonable steps in response to a compliance monitoring condition, if the Permittee determines that an exceedance of an emission limitation has occurred, the Permittee shall report such deviations pursuant to Section B-Deviations from Permit Requirements and Conditions.
- (e) The Permittee shall record all instances when response steps are taken. In the event of an emergency, the provisions of 326 IAC 2-8-12 (Emergency Provisions) requiring prompt corrective action to mitigate emissions shall prevail.
- (f) Except as otherwise provided by a rule or provided specifically in Section D, all monitoring as required in Section D shall be performed when the emission unit is operating, except for time necessary to perform quality assurance and maintenance activities.

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 the "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 source 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 the "authorized individual" as defined by 326 IAC2-1.1-1(1).
- (b) The report required in (a) of this condition and reports required by conditions in Section D of this permit shall be submitted to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204
- (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 the "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (e) The first report covered the period commencing on the date of issuance of the original FESOP and ended on the last day of the reporting period. All subsequent reporting periods shall be 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 – Boilers

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

- (a) Two (2) natural gas fired trim boilers, identified as EU046 and EU047, constructed in 2005, each with a maximum heat input capacity of 94.5 MMBtu/hr, using propane as a back-up fuel, and exhausting through stacks EP011 and EP012, respectively.

(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 thereunder, as well as other applicable local, state, and federal requirements.

D.1.2 Federally Enforceable State Operating Permit [326 IAC 2-8]

The attached Affidavit of Construction shall be submitted to the Office of Air Quality (OAQ), Permit Administration & Development Section, verifying that the emission units were constructed as proposed in the application.

Effective Date of the Permit

D.1.3 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.1.4 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.1.5 FESOP Limits [326 IAC 2-8-4] [326 IAC 2-2]

Pursuant to 326 IAC 2-8-4, the Permittee shall comply with the following for boilers EU046 and EU047:

- (a) The NO_x emissions shall not exceed 51.0 lbs/MMCF when burning natural gas.
- (b) The CO emissions shall not exceed 32.3 lbs/MMCF when burning natural gas.
- (c) For each of the boilers EU046 and EU047, the total operating hours for propane combustion shall not exceed 500 hours per twelve (12) consecutive month period with compliance determined at the end of each month.

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

D.1.6 General Provisions Relating to NSPS [326 IAC 12-1][40 CFR Part 60, Subpart A]

The provisions of 40 CFR Part 60, Subpart A - General Provisions, which are incorporated by reference in 326 IAC 12-1, apply to the facilities described in this section except when otherwise specified in 40 CFR Part 60, Subpart Dc.

D.1.7 NSPS Requirements [326 IAC 12-1][40 CFR 60, Subpart Dc]

Pursuant to 40 CFR 60.48c, the Permittee shall maintain daily records of the amount and type of fuel burned in boilers EU046 and EU047.

D.1.8 Particulate Emissions [326 IAC 6-2-4]

Pursuant to 326 IAC 6-2-4 (Particulate Emission Limitations for Sources of Indirect Heating), particulate emissions from each of the 94.5 MMBtu/hr boilers (EU046 and EU047) shall be limited to 0.28 pounds per MMBtu heat input.

The limit was calculated using the following equation:

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

Where Pt = emission rate limit (lbs/MMBtu)
Q = total source heat input capacity (MMBtu/hr)

D.1.9 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.1.10 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11]

In order to demonstrate compliance with Condition D.1.5, the Permittee shall perform NOx and CO testing for boilers EU046 and EU047 within 60 days after achieving the maximum capacity, but not later than 180 days after initial startup, utilizing methods as approved by the Commissioner. 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.1.11 Record Keeping Requirements

- (a) To document compliance with Condition D.1.5(c), the Permittee shall maintain monthly records of the operating hours of propane combustion for boilers EU046 and EU047.
- (b) To document compliance with Condition D.1.7, the Permittee shall maintain daily records of the amount and type of fuel burned in boilers EU046 and EU047.
- (c) To document compliance with Condition D.1.9, the Permittee shall maintain records of any additional inspections prescribed by the Preventive Maintenance Plan.
- (d) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.1.12 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.1.5(c) 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 "responsible official" as defined by 326 IAC 2-7-1(34).

SECTION D.2 FACILITY OPERATION CONDITIONS – Grain Receiving and Handling Processes

Facility Description [326 IAC 2-8-4(10)] – Grain Receiving and Handling Processes:

- (b) One (1) corn dump pit, identified as EU001, constructed in 2005, with a maximum throughput rate of 1,120 tons of corn per hour, controlled by baghouse CE001, and exhausting through stack EP001.
- (c) One (1) grain handling operation, constructed in 2005, controlled by baghouse CE002, exhausting through stack EP002, and consisting of the following:
 - (1) One (1) corn conveyor, identified as EU002, with a maximum throughput rate of 1,120 tons per hour.
 - (2) One (1) corn elevator, identified as EU003, with a maximum throughput rate of 1,120 tons per hour.
 - (3) Two (2) corn storage bins, identified as EU004 and EU005, each with a maximum capacity of 802,000 bushels and maximum throughput rate of 560 tons per hour.
 - (4) One (1) scalper, identified as EU006, with a maximum throughput rate of 140 tons per hour.
 - (5) One (1) surge bin, identified as EU007, with a maximum throughput rate of 140 tons per hour.
- (d) One (1) hammermill, identified as EU010, constructed in 2005, with a maximum throughput rate of 140 tons of corn per hour, controlled by baghouses CE003, and exhausting through stack EP003.
- (e) One (1) hammermill, identified as EU011, constructed in 2005, with a maximum throughput rate of 140 tons of corn per hour, controlled by baghouses CE004, and exhausting through stack EP004.
- (i) One (1) DDGS loadout operation, constructed in 2005 with a maximum throughput rate of 101 tons per hour, controlled by baghouse CE008, exhausting to stack EP008, and consisting of the following:
 - (1) One (1) DDGS dump pit, identified as EU040.
 - (2) One (1) DDGS elevator, identified as EU041.
 - (3) One (1) DDGS conveyor, identified as EU042.
 - (4) One (1) DDGS load spout, identified as EU043.

Insignificant Activity:

- (f) 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.2.1 Permit No Defense

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

D.2.2 Federally Enforceable State Operating Permit [326 IAC 2-8]

The attached Affidavit of Construction shall be submitted to the Office of Air Quality (OAQ), Permit Administration & Development Section, verifying that the emission units were constructed as proposed in the application.

Effective Date of the Permit

D.2.3 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.2.4 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.2.5 PM and PM10 Emissions [326 IAC 2-2] [326 IAC 2-8-4]

- (a) The PM and PM10 emissions from the following units shall not exceed the emission limits listed in the table below.

Unit Description	Baghouse ID	PM/PM10 Emission Limit (lbs/hr)
Corn Dump Pit EU001	CE001	1.04
Grain Handling	CE002	0.50
Hammermill EU010	CE003	0.41
Hammermill EU011	CE004	0.41
DDGS Loadout Operation	CE008	0.24

- (b) The total grain received by corn dump pit EU001 shall be limited to less than 646,800 tons per twelve (12) consecutive month period with compliance determined at the end of each month.
- (c) Permittee shall use wet suppression to control PM and PM10 emissions from the paved and unpaved roads. The suppressant shall be applied in a manner and at a frequency sufficient to ensure compliance with 326 IAC 2-2 and 326 IAC 2-8.

Combined with the PM/PM10 emissions from boilers, thermal oxidizer CE007, flare CE009, and the insignificant activities, 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.2.6 Particulate Emission Limitations [326 IAC 6-3-2]

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

Unit ID	Unit Description	Max. Throughput Rate (tons/hr)	Particulate Emission Limit (lbs/hr)
EU001	Corn Dump Pit	1,120	79.1
EU002	Corn Conveyor	1,120	79.1
EU003	Corn Elevator	1,120	79.1
EU004	Corn Storage Bin	560	70.3
EU005	Corn Storage Bin	560	70.3
EU006	Scalper	140	54.7
EU007	Surge Bin	140	54.7
EU010	Hammermill	140	54.7
EU011	Hammermill	140	54.7
EU040	DDGS Dump pit	101	51.4
EU041	DDGS Elevator	101	51.4
EU042	DDGS Conveyor	101	51.4
EU043	DDGS Load Spout	101	51.4

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:

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

D.2.7 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

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

Compliance Determination Requirements

D.2.8 Particulate Control

In order to comply with Conditions D.2.5(a) and D.2.6, each of the following emission units shall be controlled by the associated baghouse, as listed in the table below, when these units are in operation:

Unit Description	Baghouse ID
Corn Dump Pit EU001	CE001
Grain Handling	CE002
Hammermill EU010	CE003
Hammermill EU011	CE004
DDGS Loadout Operation	CE008

D.2.9 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11]

In order to demonstrate compliance with Conditions D.2.5(a) and D.2.6, the Permittee shall perform PM and PM10 testing for baghouses CE001 through CE004 and CE008 within 60 days after achieving the maximum capacity, but not later than 180 days after initial startup, utilizing methods as approved by the Commissioner. PM-10 includes filterable and condensable PM-10. 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.2.10 Visible Emissions Notations

- (a) Visible emission notations of the baghouse stack exhausts (stacks EP001 through EP004, and EP008) shall be performed once per day during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.

- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
- (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (e) The Compliance Response Plan for these units shall contain troubleshooting contingency and response steps for when an abnormal emission is observed. Failure to take response steps in accordance with Section C - Compliance Response Plan – Preparation, Implementation, Records and Reports shall be considered a deviation from this permit.

D.2.11 Parametric Monitoring

The Permittee shall record the total static pressure drop across the baghouses used in conjunction with corn dump pit (EU001), the grain handling operation (EU002 through EU007), the hammermills (EU010 and EU011), and the DDGS loadout operation (EU040 through EU043), 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 - Compliance Response Plan – Preparation, Implementation, Records and Reports. 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 - Compliance Response Plan - Preparation, Implementation, Records and Reports shall be considered a deviation from this permit.

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

D.2.12 Baghouse Inspections

- (a) An external inspection shall be performed each calendar quarter of all baghouses controlling the corn dump pit (EU001), the grain handling operation (EU002 through EU007), the hammermills (EU010 and EU011), and the DDGS loadout operation (EU040 through EU043). Inspections required by this condition shall not be performed in consecutive months.
- (b) An internal inspection shall be performed annually of all baghouses controlling the corn dump pit (EU001), the grain handling operation (EU002 through EU007), the hammermills (EU010 and EU011), and the DDGS loadout operation (EU040 through EU043). All defective bags shall be replaced.

D.2.13 Broken or Failed Bag Detection

In the event that bag failure has been observed:

- (a) For multi-compartment units, the affected compartments will be shut down immediately until the failed units have been repaired or replaced. Within eight (8) business hours of the determination of failure, response steps according to the timetable described in the Compliance Response Plan shall be initiated. For any failure with corresponding response steps and timetable not described in the Compliance Response Plan, response steps shall be devised within eight (8) business hours of discovery of the failure and shall include a timetable for completion. Failure to take response steps in accordance with Section C - Compliance Response Plan -Preparation, Implementation, Records, and Reports, shall be considered a deviation from this permit. If operations continue after bag

failure is observed and it will be 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.

- (b) For single compartment baghouses, if failure is indicated by a significant drop in the baghouse's pressure readings with abnormal visible emissions or the failure is indicated by an opacity violation, or if bag failure is determined by other means, such as gas temperatures, flow rates, air infiltration, leaks, dust traces or triboflows, then 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).

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

D.2.14 Record Keeping Requirements

- (a) To document compliance with Condition D.2.5(b), the Permittee shall maintain monthly records of the amount of corn received by corn dump pit EU001.
- (b) To document compliance with Condition D.2.10, the Permittee shall maintain records of daily visible emission notations of the baghouse stack exhausts.
- (c) To document compliance with Condition D.2.11, the Permittee shall maintain daily records of the total static pressure drop during normal operation.
- (d) To document compliance with Condition D.2.12, the Permittee shall maintain records of the results of the inspections required under Condition D.2.12.
- (e) To document compliance with Condition D.2.7, the Permittee shall maintain records of any additional inspections prescribed by the Preventive Maintenance Plan.
- (f) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.2.15 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.2.5(b) shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).

SECTION D.3 FACILITY OPERATION CONDITIONS – Fermentation and Distillation Process

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

- (f) One (1) fermentation process, constructed in 2005, with a maximum throughput rate of 7,060 gallons of ethanol per hour, controlled by CO₂ scrubber CE005, exhausting through stack EP005, and consisted of the following:
 - (1) One (1) liquefaction tank, identified as EU014.
 - (2) One (1) yeast tank, identified as EU015.
 - (3) Three (3) fermenters, identified as EU016, EU017, and EU018.
- (g) One (1) distillation and dehydration process, constructed in 2005, with a maximum throughput rate of 6,850 gallons of ethanol per hour, controlled by CO₂ scrubber CE005, exhausting through stack EP005, and consisting of the following:
 - (1) One (1) beer well, identified as EU020.
 - (2) One (1) beer stripper, identified as EU021.
 - (3) One (1) side stripper, identified as EU022.
 - (4) One (1) rectifier, identified as EU023.
 - (5) One (1) molecular sieve, identified as EU024.
 - (6) One (1) evaporator, identified as EU025.
 - (7) Four (4) centrifuges, identified as EU026 through EU029.

(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 thereunder, as well as other applicable local, state, and federal requirements.

D.3.2 Federally Enforceable State Operating Permit [326 IAC 2-8]

The attached Affidavit of Construction shall be submitted to the Office of Air Quality (OAQ), Permit Administration & Development Section, verifying that the emission units were constructed as proposed in the application.

Effective Date of the Permit

D.3.3 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.3.4 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.3.5 VOC and HAP Emissions [326 IAC 2-2] [326 IAC 2-8-4] [326 IAC 2-4.1]

Pursuant to 326 IAC 2-8-4 (FESOP), emissions from wet scrubber CE005, which is used to control the emissions from the fermentation process and the distillation and dehydration process, shall comply with the following:

- (a) VOC emissions shall not exceed 6.0 lbs/hr.
- (b) Total HAP emissions shall not exceed 1.58 lbs/hr.

Combined with the VOC and HAP emissions from other units, the VOC emissions from the entire source are limited to less than 100 tons/yr, and the total HAP emissions from the entire source are limited to less than 10 tons/yr. 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.3.6 VOC Emissions [326 IAC 8-1-6]

Pursuant to 326 IAC 8-1-6 (BACT), the Permittee shall control the VOC emissions from both the fermentation process and the distillation and dehydration process with a Best Available Control Technology (BACT), which has been determined to be the following:

- (a) The VOC emissions from the fermentation process and the distillation and dehydration process shall be controlled by wet scrubber CE005.
- (b) The overall VOC control efficiency for the wet scrubber CE005 shall be at least 98% or the VOC emissions from scrubber CE005 shall not exceed 20 ppmv.
- (c) The VOC emissions from wet scrubber CE005 shall not exceed 6.0 lbs/hr.

D.3.7 General Provisions Relating to NSPS [326 IAC 12-1][40 CFR Part 60, Subpart A]

The provisions of 40 CFR 60, Subpart A - General Provisions, which are incorporated by reference in 326 IAC 12-1, apply to the facility described in Condition D.3.8 except when otherwise specified in 40 CFR 60, Subpart VV.

D.3.8 Equipment Leaks of VOC [326 IAC 12][40 CFR 60, Subpart VV]

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

D.3.9 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

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

Compliance Determination Requirements

D.3.10 VOC and HAP Control

In order to comply with Conditions D.3.5 and D.3.6, wet scrubber CE005 shall be in operation and control emissions from the fermentation process and the distillation and dehydration process at all times that these units are in operation.

D.3.11 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11]

In order to verify compliance with Conditions D.3.5 and D.3.6, the Permittee shall perform VOC (including emission rate, and overall control efficiency) and HAP testing for scrubber CE005 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.

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

D.3.12 Parametric Monitoring

The Permittee shall monitor and record the pressure drop and flow rate of scrubber CE005, at least once per day when the associated fermentation process or distillation and dehydration processes are in operation. When for any one reading, the pressure drop across the scrubber is outside the normal range of 1.0 and 6.0 inches of water, or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C - Compliance Response Plan - Implementation, Preparation, Records, and Reports. When for any one reading, the flow rate of any of the scrubbers is less than the minimum of 20 gallons per minute, or a minimum established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C - Compliance Response Plan - Implementation, Preparation, Records, and Reports. A pressure reading that is outside the above mention 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 - Compliance Response Plan - Preparation, Implementation, Records, and Reports shall be considered a deviation from this permit.

The instruments used for determining the pressure drop and flow rate shall comply with Section C - Pressure Gauge and Other 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.3.13 Scrubber Inspections

An external inspection shall be performed each calendar quarter of the scrubber controlling the fermentation process and the distillation and dehydration process. Inspections required by this condition shall not be performed in consecutive months.

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

D.3.14 Record Keeping Requirements

- (a) To document compliance with Condition D.3.12, the Permittee shall maintain daily records of pressure drop and flow rate for scrubber CE005 during normal operation.
- (b) To document compliance with Condition D.3.13, the Permittee shall maintain records of the results of the inspections required under Condition D.3.13.
- (c) To document compliance with Condition D.3.9, the Permittee shall maintain records of any additional inspections prescribed by the Preventive Maintenance Plan.
- (d) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

SECTION D.4 FACILITY OPERATION CONDITIONS – DDGS Drying and Cooling Process

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

- (h) One (1) Dried Distillers Grain and Solubles (DDGS) drying and cooling process, constructed in 2005, controlled by regenerative thermal oxidizer (RTO) CE007, which uses natural gas and propane as fuels and has a maximum heat input capacity of 12 MMBtu/hr, and exhausting through stack EP007. This process consists of the following:
- (1) One (1) natural gas fired DDGS dryer, identified as EU035, with a maximum heat input rate of 94.9 MMBtu/hr and a maximum throughput rate of 34 tons of DDGS per hour, using propane as a back-up fuel, controlled by multicyclone CE006 and RTO CE007, and exhausting to stack EP007.
 - (2) One (1) DDGS cooler, identified as EU036, with a maximum throughput rate of 34 tons of DDGS per hour, controlled by RTO CE007, and exhausting to stack EP007.

(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.4.1 Permit No Defense

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

D.4.2 Federally Enforceable State Operating Permit [326 IAC 2-8]

The attached Affidavit of Construction shall be submitted to the Office of Air Quality (OAQ), Permit Administration & Development Section, verifying that the emission units were constructed as proposed in the application.

Effective Date of the Permit

D.4.3 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.4.4 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.4.5 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 make the requirements of 326 IAC 2-2 (PSD) not applicable, emissions from thermal oxidizer CE007, which is used to control the DDGS dryer (EU035) and the DDGS cooler (EU036), shall not exceed the following:

- (a) PM/PM10 emissions shall not exceed 8.0 lbs/hr.

- (b) VOC emissions shall not exceed 6.0 lbs/hr.
- (c) CO emissions shall not exceed 14.5 lbs/hr.
- (d) SO₂ emissions shall not exceed not exceed 8.0 lbs/hr.
- (e) NO_x emissions shall not exceed 51.0 lbs/MMCF and 5.46 lbs/hr when using natural gas as fuel.
- (f) Total HAP emissions shall not exceed 0.21 lbs/hr.
- (g) For each of the DDGS dryer EU035 and the thermal oxidizer CE007, the operating hours for propane combustion shall not exceed 500 hours per twelve (12) consecutive month period with compliance determined at the end of each month.

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

D.4.6 VOC Emissions [326 IAC 8-1-6]

Pursuant to 326 IAC 8-1-6 (BACT), the Permittee shall control the VOC emissions from the DDGS dryer (EU035) with a Best Available Control Technology (BACT), which has been determined to be the following:

- (a) The VOC emissions from the DDGS dryer (EU035) shall be controlled by thermal oxidizer CE007.
- (b) The overall efficiency for the thermal oxidizer CE007 shall be at least 98% or the maximum outlet VOC concentration shall not exceed 10 ppmv.
- (c) The VOC emissions from thermal oxidizer CE007 shall not exceed 6.0 lbs/hr.

D.4.7 Particulate Emission Limitations [326 IAC 6-3-2]

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

Unit ID	Unit Description	Max. Throughput Rate (tons/hr)	Particulate Emission Limit (lbs/hr)
EU035	DDGS Dryer	34	41.1
EU036	DDGS Cooler	34	41.1

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

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

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

D.4.8 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

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

Compliance Determination Requirements

D.4.9 PM and PM10 Control

In order to comply with Conditions D.4.5(a) and D.4.7, cyclone CE006 shall be in operation and control emissions from the DDGS dryer (EU035) at all times that this unit is in operation.

D.4.10 VOC and HAP Control

In order to comply with Conditions D.4.5(b), D.4.5(f), and D.4.6, thermal oxidizer CE007 shall be in operation and control emissions from the DDGS dryer (EU-35) and the DDGS cooler (EU036) at all times that these units are in operation.

D.4.11 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.4.5, D.4.6, and D.4.7, the Permittee shall perform PM, PM10, VOC (including emission rate and overall control efficiency), SO₂, CO, NO_x, and HAP testing for thermal oxidizer CE007 within 60 days after achieving the maximum capacity, but not later than 180 days after initial startup, utilizing methods as approved by the Commissioner. PM-10 includes filterable and condensible PM-10. The PM, PM10, and VOC tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with Section C - Performance Testing.

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

D.4.12 Visible Emissions Notations

- (a) Visible emission notations of the stack exhaust from stack EP007 shall be performed once per day during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.
- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
- (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (e) The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed. Failure to take response steps in accordance with Section C - Compliance Response Plan – Preparation, Implementation, Records and Reports shall be considered a deviation from this permit.

D.4.13 Thermal Oxidizer Temperature

- (a) A continuous monitoring system shall be calibrated, maintained, and operated on the thermal oxidizer (CE007) 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 oxidizer at or above the 3-hour average temperature of 1,500°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.4.5 and D.4.6, as approved by IDEM.
- (c) On and after the date the approved stack test results are available, the Permittee shall operate the thermal oxidizer at or above the 3-hour average temperature as observed during the compliant stack test.

D.4.14 Parametric Monitoring

- (a) The Permittee shall determine the appropriate duct pressure or fan amperage from the most recent valid stack test that demonstrates compliance with limits in Conditions D.4.5 and D.4.6, as approved by IDEM.
- (b) The duct pressure or fan amperage shall be observed at least once per day when the thermal oxidizer/heat recovery steam generator 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.4.15 Cyclone Inspections

An inspection shall be performed each calendar quarter of all cyclones controlling the DDGS dryer (EU035). Inspections required by this condition shall not be performed in consecutive months.

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

D.4.16 Record Keeping Requirements

- (a) To document compliance with Condition D.4.5(g), the Permittee shall maintain monthly records of the operating hours of propane combustion for the DDGS dryer (EU035) and the RTO (CE007).
- (b) To document compliance with Condition D.4.12, the Permittee shall maintain records of daily visible emission notations of the stack EP007.
- (c) To document compliance with Condition D.4.13, the Permittee shall maintain continuous temperature records for the thermal oxidizer and the 3-hour average temperature used to demonstrate compliance during the most recent compliant stack test.
- (d) To document compliance with Condition D.4.14, the Permittee shall maintain daily records of the duct pressure or fan amperage for the thermal oxidizer CE007.
- (e) To document compliance with Condition D.4.15, the Permittee shall maintain records of the results of the inspections required under Condition D.4.15.
- (f) To document compliance with Condition D.4.8, the Permittee shall maintain records of any additional inspections prescribed by the Preventive Maintenance Plan.
- (g) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.4.17 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.4.5(g) shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).

SECTION D.5 FACILITY OPERATION CONDITIONS – Ethanol Loading Rack

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

- (j) One (1) ethanol loading rack for both railcar and truck loading, identified as EU045, constructed in 2005, with a maximum throughput rate of 96,000 gallons per hour. Railcars are dedicated to carrying denatured ethanol product. Trucks are not dedicated to carrying denatured ethanol. The truck loading process is controlled by the enclosed flare CE009, which is fueled by natural gas and has a maximum heat input capacity of 10.0 MMBtu/hr, and exhausts through stack EP009.

(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.5.1 Permit No Defense

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

D.5.2 Federally Enforceable State Operating Permit [326 IAC 2-8]

The attached Affidavit of Construction shall be submitted to the Office of Air Quality (OAQ), Permit Administration & Development Section, verifying that the emission units were constructed as proposed in the application.

Effective Date of the Permit

D.5.3 Effective Date of the Permit [IC13-15-5-3]

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

D.5.4 Modification to Construction Conditions [326 IAC 2]

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

Operation Conditions

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

D.5.5 FESOP Limits [326 IAC 2-2] [326 IAC 2-8-4] [326 IAC 2-4.1]

Pursuant to 326 IAC 2-8-4 (FESOP), the Permittee shall comply with the following emission limits for the ethanol loading rack (EU045):

- (a) The Permittee shall use flare CE009 to control the emissions from the loading rack when loading denatured ethanol to trucks.
- (b) VOC emissions from flare CE009 shall not exceed 1.84 lbs/hr.
- (c) Total HAP emissions from flare CE009 shall not exceed 0.11 lbs/hr.

Combined with the VOC emissions from other units, the VOC emissions from the entire source are limited to less than 100 tons/yr and the total HAP emissions from the entire source are limited to less than 10 tons/yr. 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.5.6 VOC Emissions [326 IAC 8-1-6]

The potential VOC emissions from the truck loading process are greater than 25 tons/yr. Pursuant to 326 IAC 8-1-6 (BACT), the Permittee shall collect and control the VOC emissions from the ethanol loading rack, when loading ethanol to trucks, with a Best Available Control Technology (BACT). The BACT for this unit has been determined to be the following:

- (a) The VOC emissions from the ethanol loading rack (EU045) shall be collected and controlled by enclosed flare CE009 when loading denatured ethanol to trucks.
- (b) The overall efficiency for the enclosed flare CE009 shall be at least 98%.
- (c) The VOC emissions from enclosed flare CE009 shall not exceed 1.84 lbs/hr.

D.5.7 General Provisions Relating to NSPS [326 IAC 12-1][40 CFR Part 60, Subpart A]

The provisions of 40 CFR 60, Subpart A - General Provisions, which are incorporated by reference in 326 IAC 12-1, apply to the facility described in Condition D.5.8 except when otherwise specified in 40 CFR 60, Subpart VV.

D.5.8 Equipment Leaks of VOC [326 IAC 12][40 CFR 60, Subpart VV]

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

D.5.9 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 this facility and any control device.

Compliance Determination Requirements

D.5.10 VOC and HAP Control

In order to comply with Conditions D.5.5 and D.5.6, enclosed flare CE009 shall be in operation and control emissions from the ethanol loading rack (EU045) at all times when this rack is loading ethanol to trucks.

D.5.11 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.5.5 and D.5.6, the Permittee shall perform VOC (including emission rate and overall control efficiency), HAP, CO, and NOx testing for enclosed flare CE009 within 60 days after achieving the maximum production, but not later than 180 days after initial startup, utilizing methods as approved by the Commissioner. 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.5.12 Flare Pilot Flame

In order to comply with Conditions D.5.5 and D.5.6, the Permittee shall monitor the presence of a flare pilot flame using a thermocouple or any other equivalent device to detect the presence of a flame when the ethanol loading rack is in operation and is loading ethanol to trucks.

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

D.5.13 Record Keeping Requirements

- (a) To document compliance with Condition D.5.12, the Permittee shall maintain records of temperature or other parameters sufficient to demonstrate the presence of a pilot flame when the loading rack is in operation and is loading ethanol to trucks.
- (b) To document compliance with Condition D.5.9, the Permittee shall maintain of records of any additional inspections prescribed by the Preventive Maintenance Plan.
- (c) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

SECTION D.6 FACILITY OPERATION CONDITIONS – Cooling Tower

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

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

(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 Particulate Matter (PM) [40 CFR 52, Subpart P]

Pursuant to 40 CFR 52, Subpart P, the particulate matter (PM) from the cooling tower shall be limited by the following:

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

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

SECTION D.7 FACILITY OPERATION CONDITIONS – Storage Tanks

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

Insignificant Activities

- (j) Other emission units, not regulated by a NESHAP, with PM₁₀, NO_x, and SO₂ emissions less than five (5) pounds per hour or twenty-five (25) pounds per day, CO emissions less than twenty-five (25) pounds per day, VOC emissions less than three (3) pounds per hour or fifteen (15) pounds per day, lead emissions less than six-tenths (0.6) tons per year or three and twenty-nine hundredths (3.29) pounds per day, and emitting greater than one (1) pound per day but less than five (5) pounds per day or one (1) ton per year of a single HAP, or emitting greater than one (1) pound per day but less than twelve and five tenths (12.5) pounds per day or two and five tenths (2.5) ton per year of any combination of HAPs:
- (1) One (1) 190 proof tank, identified as T001, constructed in 2005, with a maximum capacity of 160,000 gallons.
 - (2) One (1) denaturant tank, identified as T002, constructed in 2005, with a maximum capacity of 55,500 gallons of natural gasoline.
 - (3) One (1) denatured ethanol tank, identified as T003, constructed in 2005, with a maximum capacity of 792,000 gallons.
 - (4) Two (2) shift tanks, identified as T004 and T005, constructed in 2005, each with a maximum capacity of 160,000 gallons of 200-proof ethanol.

(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.7.1 Volatile Organic Compounds (VOC) [326 IAC 8-9]

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 T002:

- (a) The types of volatile petroleum liquid stored;
- (b) The maximum true vapor pressure of the liquids as stored; and
- (c) The results of the inspections performed on the storage vessels.

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

D.7.2 General Provisions Relating to NSPS [326 IAC 12-1][40 CFR Part 60, Subpart A]

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

D.7.3 Storage Tanks [326 IAC 12][40 CFR 60, Subpart Kb]

Pursuant to 40 CFR 60, Subpart Kb, the Permittee shall install internal floating roofs with tanks T001 through T005 and shall comply with the following requirements in 40 CFR 60.112b

(a)(1) for the internal floating roofs:

- (a) 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.

- (b) 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:
 - (1) 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.
 - (2) 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.
 - (3) 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.
- (c) 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.
- (d) 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.
- (e) 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.
- (f) 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.
- (g) 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.
- (h) 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.
- (i) Each penetration of the internal floating roof that allows for passage of a ladder shall have a gasketed sliding cover.

D.7.4 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

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

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

D.7.5 Testing and Procedures [40 CFR 60, Subpart Kb] [326 IAC 12]

Pursuant to 40 CFR 60.113b, the Permittee shall comply with the following requirement:

- (a) 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.
- (b) 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 40 CFR 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.
- (c) For vessels equipped with a double-seal system as specified in 40 CFR 60.112b(a)(1)(ii)(B):
 - (1) Visually inspect the vessel as specified in paragraph (a)(4) of this section at least every 5 years; or
 - (2) Visually inspect the vessel as specified in 40 CFR 60.113(a)(2).
- (d) 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 40 CFR 60.113(a)(2) and (a)(3)(ii) and at intervals no greater than 5 years in the case of vessels specified in 40 CFR 60.113(a)(3)(i).
- (e) Notify the IDEM, OAQ in writing at least 30 days prior to the filling or refilling of each storage vessel for which an inspection is required by 40 CFR 60.113(a)(1) and (a)(4) to afford IDEM, OAQ the opportunity to have an observer present. If the inspection required by 40 CFR 60.113 (a)(4) is not planned and the Permittee could not have known about the inspection 30 days in advance or refilling the tank, the Permittee shall notify the IDEM, OAQ at least seven (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 IDEM, OAQ at least seven (7) days prior to the refilling.

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

D.7.6 Record Keeping Requirements

- (a) To document compliance with Condition D.7.1, the Permittee shall maintain the following records for tank T002:

- (1) The types of volatile petroleum liquid stored;
 - (2) The maximum true vapor pressure of the liquids as stored; and
 - (3) The results of the inspections performed on the storage vessels.
- (b) Pursuant to 40 CFR 60.116b, the Permittee shall maintain the following records:
- (1) The dimension of the storage vessel and an analysis showing the capacity of the storage vessel for the life of the source; and
 - (2) The VOL stored, the period of storage, and the maximum true vapor pressure of that VOL during the respective storage period, for at least 2 years.
- (c) To document compliance with Condition D.7.4, the Permittee shall maintain of records of any additional inspections prescribed by the Preventive Maintenance Plan.
- (d) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

SECTION D.8 FACILITY OPERATION CONDITIONS – Other Insignificant Activities

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

- (a) Solvent recycling systems with batch capacity less than or equal to 100 gallons.
- (c) Replacement or repair of electrostatic precipitators, bags in baghouses and filters in other air filtration equipment.
- (d) Heat exchanger cleaning and repair.
- (e) Process vessel degassing and cleaning to prepare for internal repairs.
- (g) Blowdown for any of the following: sight glass; boiler; compressors; pumps; and cooling tower.
- (h) Stationary fire pumps.
- (i) Farm operations.
- (j) Other emission units, not regulated by a NESHAP, with PM₁₀, NO_x, and SO₂ emissions less than five (5) pounds per hour or twenty-five (25) pounds per day, CO emissions less than twenty-five (25) pounds per day, VOC emissions less than three (3) pounds per hour or fifteen (15) pounds per day, lead emissions less than six-tenths (0.6) tons per year or three and twenty-nine hundredths (3.29) pounds per day, and emitting greater than one (1) pound per day but less than five (5) pounds per day or one (1) ton per year of a single HAP, or emitting greater than one (1) pound per day but less than twelve and five tenths (12.5) pounds per day or two and five tenths (2.5) ton per year of any combination of HAPs:
 - (5) One (1) emergency generator, identified as EU034, constructed in 2005, with a maximum power output rate of 1,788 horsepower and a maximum operating time of 500 hours per year, and exhausting to stack EP006.

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

There are no specific state or federal rules applicable to these emission units.

SECTION E.1 40 CFR 60, Subpart VV - Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry

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

E.1.1 Standards: Pumps in Light Liquid Service [326 IAC 12][40 CFR 60, Subpart VV]

Pursuant to 40 CFR 60.482-2 (Standards: Pumps in Light Liquid Service), the Permittee shall comply with the following requirements:

- (a) Each pump in light liquid service shall:
 - (1) be monitored monthly to detect leaks by the methods specified in Condition E.1.9, except as provided in this condition; and
 - (2) be checked by visual inspection each calendar week for indications of liquids dripping from the pump seal.
- (b) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected. If there are indications of liquids dripping from the pump seal, a leak is detected.
- (c) 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 Condition E.1.8. 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 Condition E.1.1(a), provided the following requirements are met:
 - (1) Each dual mechanical seal system is:
 - (A) Operated with the barrier fluid at a pressure that is at all times greater than the pump stuffing box pressure; or
 - (B) 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 Condition E.1.7; or
 - (C) 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) The following requirements are met:
 - (A) Each sensor as described in Condition E.1.1(d)(3) is checked daily or is equipped with an audible alarm;
 - (B) The Permittee determines, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both.
 - (6) 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 Condition E.1.1(d)(5)(B), a leak is detected. 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 Condition E.1.8. 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 Condition E.1.10(d)(1) and (d)(2), for no detectable emission, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of Conditions E.1.1(a), (c), and (d) 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 Condition E.1.9(b), and
 - (3) Is tested for compliance with Condition E.1.1(e)(2) 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 Condition E.1.7, it is exempt from Conditions E.1.1(a) through (e).
- (g) Any pump that is designated, as described in Condition E.1.10(e)(1), as an unsafe-to-monitor pump is exempt from the monitoring and inspection requirements of Conditions E.1.1(a) and (d)(4) through (d)(6) if:
 - (1) The Permittee demonstrates that the pump is unsafe-to-monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with Condition E.1.1(a); and
 - (2) The Permittee 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 Condition E.1.1(c) 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 Conditions E.1.1(a)(2) and (d)(4), and the daily requirements of Condition E.1.1(d)(5), provided that each pump is visually inspected as often as practicable and at least monthly.

E.1.2 Standards: Pressure Relief Devices in Gas/Vapor Service [326 IAC 12][40 CFR 60, Subpart VV]
Pursuant to 40 CFR 60.482-4 (Standards: Pressure Relief Devices in Gas/Vapor Service), the Permittee shall comply with the following requirements:

- (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 Condition E.1.9(b).
- (b) 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 Condition E.1.8. 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 Condition E.1.9(b).

- (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 Condition E.1.7 is exempted from the requirements of Conditions E.1.2(a) and (b).
- (d) Any pressure relief device that is equipped with a rupture disk upstream of the pressure relief device is exempt from the requirements of Conditions E.1.2(a) and (b), provided after each pressure release, a new rupture disk is 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 Condition E.1.8.

E.1.3 Standards: Sampling Connection Systems [326 IAC 12][40 CFR 60, Subpart VV]

Pursuant to 40 CFR 60.482-5 (Standards: Sampling Connection Systems), the Permittee shall comply with the following requirements:

- (a) Each sampling connection system shall be equipped with a closed-purged, closed-loop, or closed-vent system. 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 Condition E.1.3(a) shall comply with the following requirements:
 - (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 Condition E.1.7; or
 - (4) Collect, store, and transport the purged process fluid to any of the following systems or facilities:
 - (A) 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;
 - (B) A treatment, storage, or disposal facility subject to regulation under 40 CFR part 262, 264, 265, or 266; or
 - (C) 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 Conditions E.1.3(a) and (b).

E.1.4 Standards: Open-Ended Valves or Lines [326 IAC 12][40 CFR 60, Subpart VV]

Pursuant to 40 CFR 60.482-6 (Standards: Open-Ended Valves or Lines), the Permittee shall comply with the following requirements:

- (a) Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve. 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 Condition E.1.4(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 Conditions E.1.4(a), (b) and (c).
- (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 Conditions E.1.4(a) through (c) are exempt from the requirements of Conditions E.1.4(a) through (c).

E.1.5 Standards: Valves in Gas/Vapor Service and in Light Liquid Service [326 IAC 12][40 CFR 60, Subpart VV]

Pursuant to 40 CFR 60.482-7 (Standards: Valves in Gas/Vapor Service and in Light Liquid Service), the Permittee shall comply with the following requirements:

- (a) Each valve shall be monitored monthly to detect leaks by the methods specified in Condition E.1.9(a) and shall comply with Conditions E.1.5(b) through (e), except as provided in Conditions E.1.5(f), (g), and (h).
- (b) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.
- (c) 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. If a leak is detected, the valve shall be monitored monthly until a leak is not detected for 2 successive months.
- (d) 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 Condition E.1.8. 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 Condition E.1.10(d)(2), for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of Condition E.1.5(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 Condition E.1.9(b), and
 - (3) Is tested for compliance with Condition E.1.5(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 Condition E.1.10(e)(1), as an unsafe-to-monitor valve is exempt from the requirements of Condition E.1.5(a) if:
 - (1) The Permittee demonstrates that the valve is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with Condition E.1.5(a), and
 - (2) The Permittee 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 Condition E.1.10(e)(2), as a difficult-to-monitor valve is exempt from the requirements of Condition E.1.5(a) if:
 - (1) The Permittee 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 40 CFR 60.14 or 40 CFR 60.15 or the Permittee designates less than 3.0 percent of the total number of valves as difficult-to-monitor, and
 - (3) The Permittee follows a written plan that requires monitoring of the valve at least once per calendar year.

E.1.6 Standards: Pumps and Valves in Heavy Liquid Service, Pressure Relief Devices in Light Liquid or Heavy Liquid Service, and Connectors [326 IAC 12][40 CFR 60, Subpart VV]

Pursuant to 40 CFR 60.482-8 (Standards: Pumps and Valves in Heavy Liquid Service, Pressure Relief Devices in Light Liquid or Heavy Liquid Service, and Connectors), the Permittee shall comply with the following requirements:

- (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 Permittee shall follow either one of the following procedures:
 - (1) The Permittee shall monitor the equipment within 5 days by the method specified in Condition E.1.9(a) and shall comply with the requirements of Conditions E.1.6(b) through (d).
 - (2) The Permittee 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) 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 Condition E.1.8. 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 Condition E.1.5(e).

E.1.7 Standards: Closed Vent Systems and Control Devices [326 IAC 12][40 CFR 60, Subpart VV]

Pursuant to 40 CFR 60.482-10 (Standards: Closed Vent Systems and Control Devices), the Permittee shall comply with the following requirements:

- (a) For closed vent systems and control devices used to comply with the provisions of 40 CFR 60, Subpart VV, the Permittee shall comply with the provisions of this Condition.

- (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 40 CFR 60.18.
- (e) For control devices used to comply with the provisions of 40 CFR 60, Subpart VV, the Permittee shall monitor these control devices to ensure that they are operated and maintained in conformance with their designs.
- (f) Except as provided in Conditions E.1.7(i) through (k), each closed vent system shall be inspected according to the procedures and schedule specified below:
 - (1) If the vapor collection system or closed vent system is constructed of hard-piping, the Permittee shall comply with the requirements specified in Conditions E.1.7(f)(1)(A) and (f)(1)(B):
 - (A) Conduct an initial inspection according to the procedures in Condition E.1.9(a); and
 - (B) 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 Permittee shall:
 - (A) Conduct an initial inspection according to the procedures in Condition E.1.9(a); and
 - (B) Conduct annual inspections according to the procedures in Condition E.1.9(a).
- (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 Condition E.1.7(h).
 - (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 Permittee 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 Condition E.1.7(f)(1)(A) and (f)(2).

- (j) Any parts of the closed vent system that are designated, as described in Condition E.1.7(l)(1), as unsafe to inspect are exempt from the inspection requirements of Conditions E.1.7(f)(1)(A) and (f)(2) if they comply with the following requirements:
 - (1) The Permittee 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 Conditions E.1.7(f)(1)(A) or (f)(2); and
 - (2) The Permittee 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 Condition E.1.7(l)(2), as difficult to inspect are exempt from the inspection requirements of Conditions E.1.7(f)(1)(A) and (f)(2) if they comply with the requirements specified below:
 - (1) The Permittee 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 40 CFR 60.14 and 60.15, or the Permittee designates less than 3.0 percent of the total number of closed vent system equipment as difficult to inspect; and
 - (3) The Permittee 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 Permittee shall record the information specified below:
 - (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 Condition E.1.10(b).
 - (4) For each inspection conducted in accordance with Condition E.1.9(a) 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 Condition E.1.7(f)(1)(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.

- (m) Closed vent systems and control devices used to comply with provisions of 40 CFR 60, Subpart VV shall be operated at all times when emissions may be vented to them.

E.1.8 Standards: Delay of Repair [326 IAC 12][40 CFR 60, Subpart VV]

Pursuant to 40 CFR 60.482-9 (Standards: Delay of Repair), the Permittee shall comply with the following requirements:

- (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 Permittee 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 Condition E.1.7.
- (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.

Compliance Determination Requirements

E.1.9 Test Methods and Procedures [326 IAC 12][40 CFR 60, Subpart VV]

Pursuant to 40 CFR 60.485 (Test Methods and Procedures), the Permittee shall comply with the following requirements:

- (a) The Permittee shall determine compliance with the standards in Conditions E.1.1 through E.1.8 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:
 - (A) Zero air (less than 10 ppm of hydrocarbon in air); and
 - (B) A mixture of methane or n-hexane and air at a concentration of about, but less than, 10,000 ppm methane or n-hexane.
- (b) The Permittee shall determine compliance with the no detectable emission standards in Conditions E.1.1(e), E.1.2, and E.1.5(f) as follows:
 - (1) The requirements of Condition E.1.10(a) 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.
- (c) The Permittee 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 in 40 CFR 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, Conditions E.1.9(c) (1) and (2) shall be used to resolve the disagreement.
- (d) The Permittee shall demonstrate that equipment is in light liquid service by showing that all the following conditions apply:
- (1) The vapor pressure of one or more of the components is greater than 0.3 kPa at 20 °C (1.2 in. H₂O at 68°F). Standard reference texts or ASTM D2879-83, 96, or 97 (incorporated by reference in 40 CFR 60.17) shall be used to determine the vapor pressures.
 - (2) The total concentration of the pure components having a vapor pressure greater than 0.3 kPa at 20 °C (1.2 in. H₂O at 68 °F) is equal to or greater than 20 percent by weight.
 - (3) The fluid is a liquid at operating conditions.
- (e) Samples used in conjunction with Conditions E.1.9(c), (d), and (f) shall be representative of the process fluid that is contained in or contacts the equipment or the gas being combusted in the flare.
- (f) The Permittee 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 m⁴/(MJ-sec) (metric units) = 0.087 ft⁴/(Btu-sec) (English units)

- (4) The net heating value (H_T) 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 in 40 CFR 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 in 40 CFR 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.

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

E.1.10 Recordkeeping Requirements [326 IAC 12][40 CFR 60, Subpart VV]

Pursuant to 40 CFR 60.486 (Recordkeeping Requirements), the Permittee shall comply with the following requirements:

- (a) When each leak is detected as specified in Conditions E.1.1, E.1.5, and E.1.6, 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 Condition E.1.5(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.
- (b) When each leak is detected as specified in Conditions E.1.1, E.1.5, and E.1.6, the following information shall be recorded in a log 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 Condition E.1.9(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 employee 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.
- (c) The following information pertaining to the design requirements for closed vent systems and control devices described in Condition E.1.7 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 Condition E.1.7(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 Conditions E.1.1, E.1.2, and E.1.3 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 Conditions E.1.1, E.1.2, and E.1.3.
- (d) The following information pertaining to all equipment subject to the requirements in Conditions E.1.1 through E.1.8 and 40 CFR 60.482-1 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 40 CFR 60, Subpart VV.
 - (2) A list of identification numbers for equipment that are designated for no detectable emissions under the provisions of Conditions E.1.1(e) and E.1.5(f) and the designation of equipment as subject to the requirements of Conditions E.1.1(e) or E.1.5(f) shall be signed by the Permittee.
 - (3) A list of equipment identification numbers for pressure relief devices required to comply with Condition E.1.2.
 - (4) The following information:
 - (A) The dates of each compliance test as required in Conditions E.1.1(e), E.1.2, and E.1.5(f);
 - (B) The background level measured during each compliance test;
 - (C) The maximum instrument reading measured at the equipment during each compliance test.
 - (5) A list of identification numbers for equipment in vacuum service.

- (e) The following information pertaining to all valves subject to the requirements of Conditions E.1.5(g) and (h) and to all pumps subject to the requirements of Conditions E.1.1(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.
- (f) The following information shall be recorded for valves complying with Condition E.1.1:
 - (1) A schedule of monitoring.
 - (2) The percent of valves found leaking during each monitoring period.
- (g) The following information shall be recorded in a log that is kept in a readily accessible location:
 - (1) Design criterion required in Conditions E.1.1(d)(5) and explanation of the design criterion; and
 - (2) Any changes to this criterion and the reasons for the changes.
- (h) 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.
- (i) The provisions of 40 CFR 60.7 (b) and (d) do not apply to affected facilities subject to this subpart.

E.1.11 Reporting Requirements [326 IAC 12][40 CFR 60, Subpart VV]

Pursuant to 40 CFR 60.487 (Reporting Requirements), the Permittee shall comply with the following requirements:

- (a) The Permittee shall submit semiannual reports to the Administrator.
- (b) All semiannual reports to IDEM, OAQ shall include the following information, summarized from the information required in Condition E.1.10.
 - (1) Process unit identification.
 - (2) For each month during the semiannual reporting period,
 - (A) Number of valves for which leaks were detected as described in Condition E.1.5(b),
 - (B) Number of valves for which leaks were not repaired as required in Condition E.1.5(d),
 - (C) Number of pumps for which leaks were detected as described in Conditions E.1.1(b) and E.1.1(d)(6),
 - (D) Number of pumps for which leaks were not repaired as required in Conditions E.1.1(c) and E.1.1(d)(6),

- (E) 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.
- (c) Revisions to items reported in the initial semiannual report if changes have occurred since the initial report or subsequent revisions to the initial report.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT OFFICE OF AIR QUALITY

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP) CERTIFICATION

Source Name: Central Indiana Ethanol, LLC.
Source Address: NW ¼, Section 3, T24N, R7E, Marion, Indiana 46952
Mailing Address: P.O. Box 650, Sweetser, Indiana 46987
FESOP No.: F053-21057-00062

**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
Phone: 317-233-5674
Fax: 317-233-5967**

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

Source Name: Central Indiana Ethanol, LLC.
Source Address: NW ¼, Section 3, T24N, R7E, Marion, Indiana 46952
Mailing Address: P.O. Box 650, Sweetser, Indiana 46987
FESOP No.: F053-21057-00062

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 317-233-5674, ask for Compliance Section); and
 - The Permittee must submit notice in writing or by facsimile within two (2) working days (Facsimile Number: 317-233-5967), 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: PM, PM10, 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: Central Indiana Ethanol, LLC.
Source Address: NW ¼, Section 3, T24N, R7E, Marion, Indiana 46952
Mailing Address: P.O. Box 650, Sweetser, Indiana 46987
FESOP No.: F053-21057-00062

<input type="checkbox"/> Natural Gas Only <input type="checkbox"/> 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: Central Indiana Ethanol, LLC.
Source Address: NW ¼, Section 3, T24N, R7E, Marion, Indiana 46952
Mailing Address: P.O. Box 650, Sweetser, Indiana 46987
FESOP No.: F053-21057-00062
Facility: Corn Dump Pit EU001
Parameter: Total Corn Received
Limit: Less than 646,800 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

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: Central Indiana Ethanol, LLC.
Source Address: NW ¼, Section 3, T24N, R7E, Marion, Indiana 46952
Mailing Address: P.O. Box 650, Sweetser, Indiana 46987
FESOP No.: F053-21057-00062
Facility: Boiler EU046
Parameter: Total Operating Hours for Propane Combustion
Limit: Less than 500 hours per twelve (12) consecutive month period with compliance determined at the end of each month.

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: Central Indiana Ethanol, LLC.
Source Address: NW ¼, Section 3, T24N, R7E, Marion, Indiana 46952
Mailing Address: P.O. Box 650, Sweetser, Indiana 46987
FESOP No.: F053-21057-00062
Facility: Boiler EU047
Parameter: Total Operating Hours for Propane Combustion
Limit: Less than 500 hours per twelve (12) consecutive month period with compliance determined at the end of each month.

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: Central Indiana Ethanol, LLC.
Source Address: NW ¼, Section 3, T24N, R7E, Marion, Indiana 46952
Mailing Address: P.O. Box 650, Sweetser, Indiana 46987
FESOP No.: F053-21057-00062
Facility: DDGS Dryer EU035
Parameter: Total Operating Hours for Propane Combustion
Limit: Less than 500 hours per twelve (12) consecutive month period with compliance determined at the end of each month.

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: Central Indiana Ethanol, LLC.
Source Address: NW ¼, Section 3, T24N, R7E, Marion, Indiana 46952
Mailing Address: P.O. Box 650, Sweetser, Indiana 46987
FESOP No.: F053-21057-00062
Facility: Thermal Oxidizer CE007
Parameter: Total Operating Hours for Propane Combustion
Limit: Less than 500 hours per twelve (12) consecutive month period with compliance determined at the end of each month.

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: Central Indiana Ethanol, LLC.
Source Address: NW ¼, Section 3, T24N, R7E, Marion, Indiana 46952
Mailing Address: P.O. Box 650, Sweetser, Indiana 46987
FESOP No.: F053-21057-00062
Facility: Ethanol Loading Rack EU045
Parameter: Total Ethanol Loadout Rate
Limit: Less than 63,000,000 gallons per twelve (12) consecutive month period with compliance determined at the end of each month.

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: Central Indiana Ethanol, LLC.
 Source Address: NW ¼, Section 3, T24N, R7E, Marion, Indiana 46952
 Mailing Address: P.O. Box 650, Sweetser, Indiana 46987
 FESOP No.: F053-21057-00062

Months: _____ to _____ Year: _____

Page 1 of 2

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 ΔNo deviations occurred this reporting period@.	
<input type="checkbox"/> NO DEVIATIONS OCCURRED THIS REPORTING PERIOD.	
<input type="checkbox"/> THE FOLLOWING DEVIATIONS OCCURRED THIS REPORTING PERIOD	
Permit Requirement (specify permit condition #)	
Date of Deviation:	Duration of Deviation:
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	
Permit Requirement (specify permit condition #)	
Date of Deviation:	Duration of Deviation:
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	

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

Form Completed By: _____

Title/Position: _____

Date: _____

Phone: _____

Attach a signed certification to complete this report.

Indiana Department of Environmental Management Office of Air Quality

Addendum to the Technical Support Document for Federally Enforceable State Operating Permit (FESOP)

Source Background and Description

Source Name: Central Indiana Ethanol, LLC
Source Location: NW ¼, Section 3, T24N, R7E, Marion, Indiana 46952
County: Grant
SIC Code: 2869
Operation Permit No.: F053-21057-00062
Permit Reviewer: ERG/YC

On June 28, 2005, the Office of Air Quality (OAQ) had a notice published in the Marion Chronicle Tribune, Marion, Indiana, stating that Central Indiana Ethanol, LLC had applied for a Federally Enforceable State Operating Permit (FESOP) to construct and operate an ethanol production plant 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.

On July 1, 2005, Mr. Jerry Smith 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:

Are there any safe levels certified for PM/PM10?

Comment 2:

Are there any safe levels certified for VOC?

Response to Comments 1 and 2:

The EPA Office of Air Quality Planning and Standards (OAQPS) has set National Ambient Air Quality Standards (NAAQS) for PM10, PM2.5, Ozone, SOx, CO, NOx, and lead. These standards set concentration limits for each of these pollutants for outdoor air in all counties of Indiana. Two (2) sets of NAAQS have been established: (1) primary standards that set limits to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly; and (2) secondary standards that set limits to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings. The standards and the averaging time for each standard can be found at the following EPA website: <http://www.epa.gov/air/criteria.html>. Both the primary and secondary NAAQS for PM10

are $50 \mu\text{g}/\text{m}^3$ for the annual average and $150 \mu\text{g}/\text{m}^3$ for the 24-hour average. Grant County is currently in compliance with the NAAQS for PM₁₀.

PM, which is defined as particulate matter with a diameter greater than $10 \mu\text{m}$ and equal to or less than $100 \mu\text{m}$, is not a criteria pollutant and there are no NAAQS established for this pollutant. Due to the larger sizes of these particles, PM typically deposits more quickly than the smaller PM₁₀ particles after being exhausted from a stack or other process vent. Large particles do not get very far into the lungs, so they tend to cause fewer harmful health effects.

There is no NAAQS for VOC. However, VOC is a precursor of ozone. Controlling the VOC emissions can effectively reduce the formation of ground level ozone. The primary and secondary NAAQS for ozone are $235 \mu\text{g}/\text{m}^3$ for the 1-hour standard and $157 \mu\text{g}/\text{m}^3$ for the 8-hour standard. Grant County in Indiana is currently in compliance with the NAAQS for ozone.

Although the NAAQS do not apply directly to specific manufacturing plants, IDEM implements a number of state and federal regulations that apply directly to individual manufacturing plants to ensure that Grant County will continue to meet these air quality standards.

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: Central Indiana Ethanol, LLC
Source Location: NW ¼, Section 3, T24N, R7E, Marion, Indiana 46952
County: Grant
SIC Code: 2869
Operation Permit No.: F053-21057-00062
Permit Reviewer: ERG/YC

The Office of Air Quality (OAQ) has reviewed a New Source Review and FESOP application from Central Indiana Ethanol, LLC relating to the construction and operation of an ethanol production plant.

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) Two (2) natural gas fired trim boilers, identified as EU046 and EU047, constructed in 2005, each with a maximum heat input capacity of 94.5 MMBtu/hr, using propane as a back-up fuel, and exhausting through stacks EP011 and EP012, respectively.
- (b) One (1) corn dump pit, identified as EU001, constructed in 2005, with a maximum throughput rate of 1,120 tons of corn per hour, controlled by baghouse CE001, and exhausting through stack EP001.
- (c) One (1) grain handling operation, constructed in 2005, controlled by baghouse CE002, exhausting through stack EP002, and consisting of the following:
 - (1) One (1) corn conveyor, identified as EU002, with a maximum throughput rate of 1,120 tons per hour.
 - (2) One (1) corn elevator, identified as EU003, with a maximum throughput rate of 1,120 tons per hour.
 - (3) Two (2) corn storage bins, identified as EU004 and EU005, each with a maximum capacity of 802,000 bushels and maximum throughput rate of 560 tons per hour.

- (4) One (1) scalper, identified as EU006, with a maximum throughput rate of 140 tons per hour.
- (5) One (1) surge bin, identified as EU007, with a maximum throughput rate of 140 tons per hour.
- (d) One (1) hammermill, identified as EU010, constructed in 2005, with a maximum throughput rate of 140 tons of corn per hour, controlled by baghouses CE003, and exhausting through stack EP003.
- (e) One (1) hammermill, identified as EU011, constructed in 2005, with a maximum throughput rate of 140 tons of corn per hour, controlled by baghouses CE004, and exhausting through stack EP004.
- (f) One (1) fermentation process, constructed in 2005, with a maximum throughput rate of 7,060 gallons of ethanol per hour, controlled by CO₂ scrubber CE005, exhausting through stack EP005, and consisting of the following:
 - (1) One (1) liquefaction tank, identified as EU014.
 - (2) One (1) yeast tank, identified as EU015.
 - (3) Three (3) fermenters, identified as EU016, EU017, and EU018.
- (g) One (1) distillation and dehydration process, constructed in 2005, with a maximum throughput rate of 6,850 gallons of ethanol per hour, controlled by CO₂ scrubber CE005, exhausting through stack EP005, and consisting of the following:
 - (1) One (1) beer well, identified as EU020.
 - (2) One (1) beer stripper, identified as EU021.
 - (3) One (1) side stripper, identified as EU022.
 - (4) One (1) rectifier, identified as EU023.
 - (5) One (1) molecular sieve, identified as EU024.
 - (6) One (1) evaporator, identified as EU025.
 - (7) Four (4) centrifuges, identified as EU026 through EU029.
- (h) One (1) Dried Distillers Grain and Solubles (DDGS) drying and cooling process, constructed in 2005, controlled by regenerative thermal oxidizer (RTO) CE007, which uses natural gas and propane as fuels and has a maximum heat input capacity of 12 MMBtu/hr, and exhausting through stack EP007. This process consists of the following:
 - (1) One (1) natural gas fired DDGS dryer, identified as EU035, with a maximum heat input rate of 94.9 MMBtu/hr and a maximum throughput rate of 34 tons of DDGS per hour, using propane as a back-up fuel, controlled by multicyclone CE006 and RTO CE007, and exhausting to stack EP007.
 - (2) One (1) DDGS cooler, identified as EU036, with a maximum throughput rate of 34 tons of DDGS per hour, controlled by RTO CE007, and exhausting to stack EP007.
- (i) One (1) DDGS loadout operation, constructed in 2005 with a maximum throughput rate of 101 tons per hour, controlled by baghouse CE008, exhausting to stack EP008, and consisting of the following:

- (1) One (1) DDGS dump pit, identified as EU040.
 - (2) One (1) DDGS elevator, identified as EU041.
 - (3) One (1) DDGS conveyor, identified as EU042.
 - (4) One (1) DDGS load spout, identified as EU043.
- (j) One (1) ethanol loading rack for both railcar and truck loading, identified as EU045, constructed in 2005, with a maximum throughput rate of 96,000 gallons per hour. Railcars are dedicated to carrying denatured ethanol product. Trucks are not dedicated to carrying denatured ethanol. The truck loading process is controlled by the enclosed flare CE009, which is fueled by natural gas and has a maximum heat input capacity of 10.0 MMBtu/hr, and exhausts through stack EP009.

Insignificant Activities

The source also consists of the following insignificant activities, as defined in 326 IAC 2-7-1(21):

- (a) Solvent recycling systems with batch capacity less than or equal to 100 gallons.
- (b) Forced and induced draft cooling tower system not regulated under a NESHAP.
- (c) Replacement or repair of electrostatic precipitators, bags in baghouses and filters in other air filtration equipment.
- (d) Heat exchanger cleaning and repair.
- (e) Process vessel degassing and cleaning to prepare for internal repairs.
- (f) Paved and unpaved roads and parking lots with public access.
- (g) Blowdown for any of the following: sight glass; boiler; compressors; pumps; and cooling tower.
- (h) Stationary fire pumps.
- (i) Farm operations.
- (j) Other emission units, not regulated by a NESHAP, with PM₁₀, NO_x, and SO₂ emissions less than five (5) pounds per hour or twenty-five (25) pounds per day, CO emissions less than twenty-five (25) pounds per day, VOC emissions less than three (3) pounds per hour or fifteen (15) pounds per day, lead emissions less than six-tenths (0.6) tons per year or three and twenty-nine hundredths (3.29) pounds per day, and emitting greater than one (1) pound per day but less than five (5) pounds per day or one (1) ton per year of a single HAP, or emitting greater than one (1) pound per day but less than twelve and five tenths (12.5) pounds per day or two and five tenths (2.5) ton per year of any combination of HAPs:
 - (1) One (1) 190 proof tank, identified as T001, constructed in 2005, with a maximum capacity of 160,000 gallons.
 - (2) One (1) denaturant tank, identified as T002, constructed in 2005, with a maximum capacity of 55,500 gallons of natural gasoline.
 - (3) One (1) denatured ethanol tank, identified as T003, constructed in 2005, with a maximum capacity of 792,000 gallons.

- (4) Two (2) shift tanks, identified as T004 and T005, constructed in 2005, each with a maximum capacity of 160,000 gallons of 200-proof ethanol.
- (5) One (1) emergency generator, identified as EU034, constructed in 2005, with a maximum power output rate of 1,788 horsepower and a maximum operating time of 500 hours per year, and exhausting to stack EP006.

Existing Approvals

There are no previous air approvals 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 March 29, 2005. Additional information was received on April 12, 2005, April 13, 2005, May 26, 2005 and June 10, 2005.

There was no notice of completeness letter mailed to the source.

Emission Calculations

See Appendix A of this document for detailed emission calculations (pages 1 through 13). The PTE of storage tanks is 0.70 tons/yr of VOC, which was calculated using EPA TANKS 4.0 software. The TANKS results are attached as Appendix C.

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, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U.S. EPA, the department, or the appropriate local air pollution control agency.”

Pollutant	Potential to Emit (tons/yr)
PM	Greater than 250
PM-10	Greater than 250
SO ₂	50.4
VOC	Greater than 250
CO	149
NO _x	312

HAPs	Potential to Emit (tons/yr)
Acetaldehyde	25.2
n-Hexane	20.1
Toluene	2.01
Benzene	1.01
Xylene	0.20
Cumene	0.04
Ethyl Benzene	0.02
Carbon Disulfide	0.01
Acrolein	0.63
Methanol	1.35
Formaldehyde	4.78
Total	55.6

- (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 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 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 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.

Process/Emission Unit	Potential To Emit (tons/year)						
	PM	PM-10	SO ₂	VOC	CO	NO _x	HAPs
2 Boilers	6.29	6.29	Less than 1.24	4.55	Less than 26.9	Less than 49.6	Negligible
Grain Receiving, Handling, and DDGS Loadout Operations*	Less than 15.3	Less than 15.3	-	-	-	-	-
Fermentation Process and Distillation Process	-	-	-	Less than 26.3	-	-	Less than 6.92
DDGS Dryer and Cooler, and RTO	Less than 35.0	Less than 35.0	Less than 35.0	Less than 26.3	Less than 63.5	Less than 28.1	Less than 0.36
Ethanol Loading Rack	Negligible	Negligible	Negligible	Less than 11.6**	Less than 4.10***	Less than 2.52***	Less than 0.48
Paved Roads (Fugitive)	Less than 9.27	Less than 1.81	-	-	-	-	-
Cooling Tower (Insignificant)	9.05	9.05	-	-	-	-	-
Emergency Generator EU034	0.31	0.31	1.81	0.32	2.46	10.7	Negligible
Storage Tanks (Insignificant)	-	-	-	0.70	-	-	Negligible
Equipment Leaks (Fugitive)	-	-	-	10.3	-	-	Negligible

Process/Emission Unit	Potential To Emit (tons/year)						
	PM	PM-10	SO ₂	VOC	CO	NO _x	HAPs
Other Insignificant Activities	Less than 1.0	Less than 1.0	-	Less than 1.0	-	-	Negligible
Total PTE of the Entire Source	Less than 76.3	Less than 68.8	Less than 38.1	Less than 76.1	Less than 97.0	Less than 90.0	Less than 7.76 for total HAPs
Title V Thresholds	NA	100	100	100	100	100	10 for a single HAP and 25 for total HAPs

Note: "-" pollutant not emitted by the facility.

- (*) This includes 11.4 tons/yr of PM/PM10 emissions from the baghouses and 3.93 tons/yr of fugitive PM/PM10 emissions.
- (**) Represents the worst case scenario of loading 63,000 kgal onto rail car tanks that previously transported denatured ethanol. Note only dedicated railcar tanks are used to transport denatured ethanol. VOC emissions from loading tank trucks are controlled by a flare. If all product was shipped by tank truck, the limited VOC emissions after control would be 0.6 tons per year.
- (***) Represents worst case scenario of loading 63,000 kgal of denatured ethanol to tank trucks previously used for transporting gasoline. Emissions of tank truck loading are controlled by flare CE009.

County Attainment Status

The source is located in Grant County.

Pollutant	Status
PM-10	Attainment
PM-2.5	Attainment or Unclassifiable
SO ₂	Attainment
NO ₂	Attainment
1-hour Ozone	Attainment
8-hour Ozone	Attainment
CO	Attainment
Lead	Attainment

- (a) Volatile organic compounds (VOC) and Nitrogen Oxides are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NO_x emissions are considered when evaluating the rule applicability relating to the ozone standards. Grant County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NO_x emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.
- (b) Grant County has been classified as unclassifiable or attainment for PM 2.5. U.S. EPA has not yet established the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 for PM 2.5 emissions. Therefore, until the U.S. EPA adopts specific provisions for PSD review for PM 2.5 emissions, it has directed states to regulate PM10 emissions as surrogate for PM 2.5 emissions.
- (c) Grant County has been classified as attainment or unclassifiable in Indiana for all other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

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	Less than 76.3
PM-10	Less than 68.8
SO ₂	Less than 38.1
VOC	Less than 76.1
CO	Less than 97.0
NO _x	Less than 90.9
Combination HAPs	Less than 8.30

This new source is not a PSD major stationary source because no attainment regulated pollutant is emitted at a rate of 100 tons per year or greater and it is in one of the 28 listed source categories.

Federal Rule Applicability

- (a) Boilers EU046 and EU047 each have a maximum heat 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).

Since only natural gas and propane will be combusted in boilers EU046 and EU046, these boilers are subject to only the record keeping requirements in 40 CFR 60.48c, which require the Permittee to maintain daily records of the amount and type of fuel burned. If the Permittee would like to change the frequency of record keeping from daily recording to monthly recording, then the source must send a letter requesting this change to the following address:

George Czerniak
c/o U.S. Environmental Protection Agency, Region V
Air and Radiation Division
Air Enforcement Branch - Indiana (AE-17J)
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

The request should reference the NSPS requirement and the EPA memorandum dated July 11, 2003 from Jeff KenKnight to Anthony Ketchum, which provides guidance on obtaining approval for alternative monitoring plans.

- (b) This source does not have a grain elevator with a permanent storage capacity greater than 2.5 million bushels. Therefore, this source is not subject to the requirements of the New Source Performance Standards for Grain Elevators (326 IAC 12, 40 CFR 60.300-304, Subpart DD).
- (c) Tanks T001 through T005 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).

Tanks T001 through T005 have capacities greater than 151 cubic meters (39,890 gallons) and the stored liquids have vapor pressures greater than 5.2 kPa and less than 76.6 kPa. Therefore, these tanks are subject to the requirements in 40 CFR 60.112b(a). The Permittee has elected to install internal floating roofs with these fixed roof tanks and shall comply with the following requirements in 40 CFR 60.112b (a)(1):

- (1) 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.

- (2) 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.
- (3) 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.
- (4) 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.
- (5) 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.
- (6) 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.
- (7) 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.
- (8) 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.
- (9) Each penetration of the internal floating roof that allows for passage of a ladder shall have a gasketed sliding cover.

The Permittee shall also comply with the testing requirements in 40 CFR 60.113b(a), the monitoring requirements in 40 CFR 60.116b, and the recordkeeping and reporting requirements in 40 CFR 60.115b.

- (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). Therefore, this source shall comply with the requirements in 40 CFR 60, Subpart VV.

Pursuant to 40 CFR 60.480(a)(2), the affected facilities are the process units, which are defined as components assembled to produce ethanol (as intermediate or final products). Pursuant to 40 CFR 60.482-1, the Permittee shall comply with the following general requirements:

- (1) The Permittee shall demonstrate compliance with the requirements of 40 CFR 60.482-1 through 60.482-10 or 40 CFR 60.480(e) for all equipment within 180 days of initial startup.
- (2) Compliance with 40 CFR 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 40 CFR 60.485.
- (3) The Permittee may request a determination of equivalence of a means of emission limitation to the requirements of 40 CFR 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 40 CFR 60.484.
- (4) Equipment that is in vacuum service is excluded from the requirements of 40 CFR 60.482-2 to 60.482-10 if it is identified as required in 40 CFR 60.486(e)(5).

The specific requirements for pumps, compressors, pressure relief devices, sampling connection systems, and valves are listed in the permit. The Permittee shall also comply with the testing requirements in 40 CFR 60.485, the recordkeeping requirements in 40 CFR 60.486, and the reporting requirements in 40 CFR 60.487.

- (e) Ethanol is one of the chemicals listed in 40 CFR 60.667. However, according to the EPA memo 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).
- (f) 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.
- (g) This source will comply with the FESOP limits to limit the 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 boilers at this source are not subject to the National Emission Standards for Hazardous Air Pollutants - Industrial/Commercial/Institutional Boilers and Process Heaters (40 CFR 63, Subpart DDDDD).
- (h) This source will comply with the FESOP limits to limit the 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 emergency generator EU034 at this source is not subject to the National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines (40 CFR 63, Subpart ZZZZ).
- (i) This source will comply with the FESOP limits to limit the 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, this ethanol production plant is not subject to the requirements of 40 CFR 63, Subpart F, G, and H – National Emission Standards for Organic Hazardous Air Pollutants from the Synthetic Organic Chemical Manufacturing Industry.

- (j) This source will comply with the FESOP limits to limit the 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, this ethanol production plant is not subject to 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.

State Rule Applicability – Entire Source

326 IAC 2-2 (Prevention of Significant Deterioration (PSD))

The source will be constructed in 2005. The source is in 1 of 28 source categories as defined in 326 IAC 2-2-1(y)(1) and the potential to emit PM, PM10, VOC, CO, and NOx from the entire source before control is greater than 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 Description	Baghouse ID	PM Emission Limit (lbs/hr)
Corn Dump Pit EU001	CE001	1.04
Grain Handling	CE002	0.50
Hammermill EU010	CE003	0.41
Hammermill EU011	CE004	0.41
DDGS Loadout Operation	CE008	0.24

The use of baghouses CE001 through CE004, and CE008 ensures compliance with the PM limits above.

- (b) The total grain received by corn dump pit EU001 shall be limited to less than 646,800 tons per twelve (12) consecutive month period with compliance determined at the end of each month.
- (c) The Permittee shall use wet suppression to control PM emissions from the paved and unpaved roads. The suppressant shall be applied in a manner and at a frequency sufficient to ensure compliance with 326 IAC 2-2.
- (d) The PM emissions from thermal oxidizer CE007, which is used to control the DDGS drying and cooling process, shall not exceed 8.0 lbs/hr. This is equivalent to 35.0 tons/yr of PM emissions.

Combined with the PM emissions from the boilers, DDGS drying and cooling process, flare CE009, and the insignificant activities at this source, the PM emissions from the entire source are limited to less than 100 tons/yr.

The source also accepted FESOP limits to limit the PM10, VOC, CO, and NOx emissions from the entire source to less than 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 accepted FESOP limits on the HAP emissions from the entire source, such that the emissions from the source are limited to less than 10 tons/yr for a single HAP and less than 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 control of the entire source is greater than 100 tons/yr. In addition, the potential to emit HAP before control from this source is greater than 10 tons/yr for a single HAP (acetaldehyde, toluene and a-hexane) and greater than 25 tons/yr for total HAPs. Pursuant to 326 IAC 2-8-4 (FESOP), the source shall comply with the following:

- (a) For boilers EU046 and EU047, the Permittee shall comply with the following:
 - (1) The NOx emissions from each of the boilers EU046 and EU047 shall not exceed 51.0 lbs/MMCF when burning natural gas. This is equivalent to 42.2 tons/yr of NOx emissions from these two boilers.
 - (2) The CO emissions from each of the boilers EU046 and EU047 shall not exceed 32.3 lbs/MMCF when burning natural gas. This is equivalent to 26.7 tons/yr of CO emissions from these two boilers.
 - (3) For each of the boilers EU046 and EU047, the total operating hours for propane combustion shall not exceed 500 hours per twelve (12) consecutive month period with compliance determined at the end of each month. This is equivalent to 49.6 tons/yr of NOx emissions and 26.9 tons/yr of CO emissions from these two boilers.
- (b) The PM10 emissions from the grain receiving, handling, and DDGS load-out operations shall not exceed the emission rates listed in the table below:

Unit Description	Baghouse ID	PM10 Emission Limit (lbs/hr)
Corn Dump Pit EU001	CE001	1.04
Grain Handling	CE002	0.50
Hammermill EU010	CE003	0.41
Hammermill EU011	CE004	0.41
DDGS Loadout Operation	CE008	0.24

The operation of baghouses CE001 through CE004 and CE008 ensures compliance with the PM10 limits above.

- (c) The total grain received by corn dump pit EU001 shall be limited to less than 646,800 tons per twelve (12) consecutive month period with compliance determined at the end of each month.
- (d) The Permittee shall use wet suppression to control PM10 emissions from the paved and unpaved roads. The suppressant shall be applied in a manner and at a frequency sufficient to ensure compliance with 326 IAC 2-8.
- (e) The emissions from wet scrubber CE005, which is used to control the emissions from the fermentation process and the distillation and dehydration process, shall comply with the following:
 - (1) VOC emissions shall not exceed 6.0 lbs/hr. This is equivalent to 26.3 tons/yr of VOC emissions.
 - (2) Total HAP emissions shall not exceed 1.58 lbs/hr. This is equivalent to 6.92 tons/yr of HAP emissions.
- (f) The emissions from thermal oxidizer CE007, which is used to control the emissions from the DDGS dryer (EU035) and the DDGS cooler (EU036), shall not exceed the following:
 - (1) PM10 emissions shall not exceed 8.0 lbs/hr. This is equivalent to 35.0 tons/yr of PM10 emissions.

- (2) VOC emissions shall not exceed 6.0 lbs/hr. This is equivalent to 26.3 tons/yr of VOC emissions.
 - (3) CO emissions shall not exceed 14.5 lbs/hr. This is equivalent to 63.5 tons/yr of CO emissions.
 - (4) SO₂ emissions shall not exceed 8.0 lbs/hr. This is equivalent to 35.0 tons/yr of SO₂ emissions.
 - (5) NO_x emissions shall not exceed 51.0 lbs/MMCF and 5.46 lbs/hr when using natural gas as fuel. This is equivalent to 23.9 tons/yr of NO_x emissions.
 - (6) Total HAP emissions shall not exceed 0.21 lbs/hr. This is equivalent to 0.92 tons/yr of HAP emissions.
 - (7) For each the thermal oxidizer (CE007) and the DDGS dryer (EU035), the operating hours for propane combustion shall not exceed 500 hours per twelve (12) consecutive month period with compliance determined at the end of each month. This is equivalent to 28.1 tons/yr of NO_x emissions from these two units.
- (g) The Permittee shall comply with the following requirements for the ethanol loading rack EU045:

- (1) The Permittee shall use flare CE009 to control the emissions from the loading rack when loading denatured ethanol to trucks.

Note: The railcars are dedicated to carrying denatured ethanol. However, the trucks are not dedicated to carrying denatured ethanol and may be used to carry the denaturant (gasoline). Significant VOCs are emitted from the truck tanks which are used to store gasoline previously. In order to limit the VOC emissions from the entire source to less than 100 tons/yr, the Permittee is required to control the VOC emissions from the ethanol loading rack with an open flare when loading denatured ethanol to trucks.

- (2) VOC emissions from flare CE009 shall not exceed 1.84 lbs/hr.
- (3) Total HAP emissions from flare CE009 shall not exceed 0.11 lbs/hr.

Combined with the PM₁₀, VOC, and HAP emissions from the insignificant activities, the emissions from the entire source are limited to less than 100 tons/yr for PM₁₀, and VOC, and less than 10 tons/yr for total HAPs. Therefore, the requirements of 326 IAC 2-7 (Part 70 Program) and 326 IAC 2-2 (PSD) are not applicable.

Note: The maximum throughput of the loading rack is 840,960 kgallons of product per year based on a maximum loading rate of 96 kgallons per hour. The throughput for the loading rack has not been limited, because the maximum amount of ethanol that can be produced at this plant is limited by the fermentation process. The VOC and HAP emission rates were calculated as follows:

$$\text{VOC (lbs/hr)} = (96 \text{ kgal/hr})(0.96 \text{ lbs/kgal})(1-98\%) = 1.84 \text{ lbs/hr}$$

$$\text{Total HAP (lbs/hr)} = (0.06)(96 \text{ kgal/hr})(0.96 \text{ lbs/gal})(1-98\%) = 0.11 \text{ lbs/hr.}$$

326 IAC 2-6 (Emission Reporting)

This source is located in Grant County and is not required to operate under a Part 70 permit. Therefore, the requirements of 326 IAC 2-6 are not applicable to this source.

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.

State Rule Applicability – Boilers EU046 and EU047

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 = emission rate limit (lbs/MMBtu)
 Q = total source heat input capacity (MMBtu/hr)

The total source heat input capacity is 94.5 x 2 = 189 MMBtu/hr. Therefore, the PM emission limit for each of boilers EU046 and EU047 is:

$$Pt = \frac{1.09}{189^{0.26}} = 0.28 \text{ lbs/MMBtu.}$$

According to AP-42, Table 1.4-2, the PM emission factor for natural gas fired boilers is 7.6 lbs/MMCF x 1 MMCF/1,000 MMBtu = 0.0076 lbs/MMBtu. Therefore, these boilers are in compliance with the PM emission limit of 0.28 lbs/MMBtu.

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 limits listed in the table below:

Unit ID	Unit Description	Max. Throughput Rate (tons/hr)	Particulate Emission Limit (lbs/hr)
EU001	Corn Dump Pit	1,120	79.1
EU002	Corn Conveyor	1,120	79.1
EU003	Corn Elevator	1,120	79.1
EU004	Corn Storage Bin	560	70.3
EU005	Corn Storage Bin	560	70.3
EU006	Scalper	140	54.7
EU007	Surge Bin	140	54.7
EU010	Hammermill	140	54.7
EU011	Hammermill	140	54.7
EU040	DDGS Dump pit	101	51.4
EU041	DDGS Elevator	101	51.4
EU042	DDGS Conveyor	101	51.4
EU043	DDGS Load Spout	101	51.4

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:

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

According to the emission calculations (see Appendix A), the potential to emit PM after control from the grain receiving, grain handling, and DDGS loadout operations is less than the emission limits above. Therefore, these operations are in compliance with 326 IAC 6-3-2. The use of the baghouses with these operations ensures compliance with these limits.

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 25 tons per year. There are no other rules in 326 IAC 8 applicable to this process. Therefore, this fermentation process is 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 fermentation process has been determined to be the following:

- (a) The VOC emissions from the fermentation process shall be controlled by wet scrubber CE005.
- (b) The overall VOC control efficiency for the wet scrubber CE005 (including the capture efficiency and control efficiency) shall be at least 98% or the VOC emissions from scrubber CE005 shall not exceed 20 ppmv.
- (c) The VOC emissions from wet scrubber CE005 shall not exceed 6.0 lbs/hr.

State Rule Applicability – Distillation and Dehydration Process

326 IAC 8-1-6 (General Reduction Requirements for VOC Emissions)

The distillation and dehydration process will be constructed after January 1, 1980 and has potential VOC emissions greater than 25 tons per year. There are no other rules in 326 IAC 8 applicable to this process. Therefore, this process is 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 this process has been determined to be the following:

- (a) The VOC emissions from the distillation and dehydration process shall be controlled by wet scrubber CE005.
- (b) The overall VOC control efficiency for the wet scrubber CE005 (including the capture efficiency and control efficiency) shall be at least 98% or the VOC emissions from scrubber CE005 shall not exceed 20 ppmv.
- (c) The VOC emissions from wet scrubber CE005 shall not exceed 6.0 lbs/hr.

State Rule Applicability – DDGS Drying and Cooling 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 dryer and the DDGS cooler 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)
EU035	DDGS Dryer	34	41.1
EU036	DDGS Cooler	34	41.1

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

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

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

P = process weight rate in tons per hour

The use of multicyclone CE006 ensures compliance with the above limits.

326 IAC 8-1-6 (General Reduction Requirements for VOC Emissions)

The DDGS dryer (EU035) will be constructed after January 1, 1980 and has potential VOC emissions greater than 25 tons per year. There are no other rules in 326 IAC 8 applicable to this unit. Therefore, this dryer is 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 dryer has been determined to be the following:

- (a) The VOC emissions from the DDGS dryer (EU035) shall be controlled by thermal oxidizer CE007.
- (b) The overall efficiency for the thermal oxidizer CE007 (including the capture efficiency and destruction efficiency) shall be at least 98% or the maximum outlet VOC concentration shall not exceed 10 ppmv.
- (c) The VOC emissions from thermal oxidizer CE007 shall not exceed 6.0 lbs/hr.

The potential VOC emissions from the DDGS cooler (EU036) is less than 25 tons/yr. Therefore, the DDGS cooler is not subject to the requirements of 326 IAC 8-1-6 (BACT).

State Rule Applicability – Ethanol Loading Rack (EU045)

326 IAC 8-1-6 (General Reduction Requirements for VOC Emissions)

The ethanol loading rack at this source will be constructed after January 1, 1980 and has potential VOC emissions greater than 25 tons per year. There are no other rules in 326 IAC 8 applicable to this unit. Therefore, this unit is subject to 326 IAC 8-1-6 and the Permittee is required to control VOC emissions with the Best Available Control Technology (BACT). Based on the information provided in Appendix B, BACT for this ethanol loading rack (EU045) has been determined to be the following:

- (a) The VOC emissions from the ethanol loading rack (EU045) shall be collected and controlled by enclosed flare CE009 when loading denatured ethanol to trucks.
- (b) The overall efficiency for the enclosed flare CE009 (including the capture efficiency and destruction efficiency) shall be at least 98%.
- (c) The VOC emissions from the enclosed flare CE009 shall not exceed 1.84 lbs/hr [= 0.96 lbs/kgal x 96 kgal/hr x (1-98%)].

State Rule Applicability - Cooling Tower (Insignificant Activity)

326 IAC 6-3-2 (Process Operations)

On June 12, 2002, revisions to 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes) became effective; this rule was previously referred to as 326 IAC 6-3 (Process Operations). As of the date this permit is being issued, these revisions have not been approved by EPA into the Indiana State Implementation Plan (SIP); therefore, the following requirement from the previous version of 326 IAC 6-3 (Process Operations), which has been approved into the SIP, remains an applicable requirement until the revisions to 326 IAC 6-3 are approved into the SIP and the condition is modified in a subsequent permit action.

Pursuant to 40 CFR 52, Subpart P, the particulate matter (PM) from the cooling tower shall be limited by the following:

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

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

P = process weight rate in tons per hour

Under the rule revision, particulate emissions from the noncontact cooling tower systems are exempt from this rule.

State Rule Applicability – Paved Roads (Insignificant Activities)

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 paved roads at this source are less than 25 tons/yr. Therefore, the requirements of 326 IAC 6-5 are not applicable.

State Rule Applicability – Storage Tanks T001 through T005 (Insignificant Activities)

326 IAC 8-4-3 (Petroleum Liquid Storage Facilities)

Tank T002 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 T002 is subject to the requirements of 326 IAC 8-4-3. Tank T002 will be equipped with an internal floating roof.

Pursuant to 326 IAC 8-4-3(d), the Permittee shall maintain the following records for a period of two (2) years for tank T002:

- (a) The types of volatile petroleum liquid stored;
- (b) The maximum true vapor pressure of the liquids as stored; and
- (c) 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 T001, T003, T004, and T005 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.

State Rule Applicability – Emergency Generator (Insignificant Activity)

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 generator EU034 is 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 generator EU034 is not subject to the requirements of 326 IAC 10-1.

Testing Requirements

In order to demonstrate compliance with the FESOP and PSD minor limits, 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 this ethanol production plant:

- (a) NO_x and CO stack tests for boilers EU046 and EU047.
- (b) PM and PM₁₀ tests for baghouses CE001 through CE004 and CE008, which are used to control the particulate emissions from the corn dump pit (EU001), the grain handling

operation (EU002 through EU007), the hammermills (EU010 and EU011), and the DDGS loadout operation (EU040 through EU043).

- (c) VOC and HAP tests for scrubber CE005, which is used to control the fermentation process and the distillation and dehydration process. These tests shall be repeated at least once every five (5) years from the date of the last valid compliance demonstration.
- (d) PM, PM10, VOC, CO, SO₂, NO_x, and HAP tests for thermal oxidizer CE007, which is used to control the DDGS dryer (EU035) and the DDGS cooler (EU036). Pursuant to 326 IAC 2-2 (PSD), PM, PM10 and VOC tests shall be repeated at least once every five (5) years from the date of the last valid compliance demonstration.
- (e) VOC, NO_x, CO, and HAP emissions from the enclosed flare CE009, which is used to control the emissions from the ethanol loading rack when loading to trucks.

Compliance Requirements

Permits issued under 326 IAC 2-8 are required to ensure that sources can demonstrate compliance with applicable state and federal rules on a more or less continuous basis. All state and federal rules contain compliance provisions, however, these provisions do not always fulfill the requirement for a more or less continuous demonstration. When this occurs, IDEM, OAQ in conjunction with the source must develop specific conditions to satisfy 326 IAC 2-8-4. As a result, compliance requirements are divided into two sections: Compliance Determination Requirements and Compliance Monitoring Requirements.

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

The compliance monitoring requirements applicable to this source are as follows:

1. Boilers EU046 and EU047 use natural gas or propane as fuels. Therefore, there are no specific compliance monitoring requirements for these units.
2. The corn dump pit (EU001), the grain handling operation (EU002 through EU007), the hammermills (EU010 and EU011), and the DDGS loadout operation (EU040 through EU043) have applicable compliance monitoring conditions as specified below. These units are controlled by baghouses CE001 through CE004, and CE008.
 - (a) Visible emission notations of the baghouse stack exhausts (stacks EP001 through EP004, and EP008) shall be performed once per day during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal. 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. 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. 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 Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed. Failure to take response steps in accordance with Section C - Compliance Response Plan – Preparation, Implementation, Records and Reports shall be considered a deviation from this permit.

- (b) The Permittee shall record the total static pressure drop across the baghouses at least once per day when the corn dump pit (EU001), the grain handling operation (EU002 through EU007), the hammermills (EU010 and EU011), and the DDGS loadout operation (EU040 through EU043) are in operation. Unless operated under conditions for which the Compliance Response Plan specifies otherwise, the pressure drop across the baghouses shall be maintained within the range of 1.0 to 6.0 inches of water or a range established during the latest stack test. The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when the pressure reading is outside of the above mentioned range for any one reading. Failure to take response steps in accordance with Section C - Compliance Response Plan -Preparation, Implementation, Records, and Reports, shall be considered a deviation from this permit.
- (c) An external inspection shall be performed each calendar quarter of all baghouses controlling the corn dump pit (EU001), the grain handling operation (EU002 through EU007), the hammermills (EU010 and EU011), and the DDGS loadout operation (EU040 through EU043). Inspections required by this condition shall not be performed in consecutive months.
- (d) An internal inspection shall be performed annually of all baghouses controlling the corn dump pit (EU001), the grain handling operation (EU002 through EU007), the hammermills (EU010 and EU011), and the DDGS loadout operation (EU040 through EU043). All defective bags shall be replaced.
- (e) In the event that bag failure has been observed:
 - (1) For multi-compartment units, the affected compartments will be shut down immediately until the failed units have been repaired or replaced. Within eight (8) business hours of the determination of failure, response steps according to the timetable described in the Compliance Response Plan shall be initiated. For any failure with corresponding response steps and timetable not described in the Compliance Response Plan, response steps shall be devised within eight (8) business hours of discovery of the failure and shall include a timetable for completion. If operations continue after bag failure is observed and it will be 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.
 - (2) For single compartment baghouses, 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.

These monitoring conditions are necessary because the corn dump pit (EU001), the grain handling operation (EU002 through EU007), the hammermills (EU010 and EU011), and the DDGS loadout operation (EU040 through EU043) 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 wet scrubber CE005, which is used to control the fermentation process and the distillation and dehydration process, has applicable compliance monitoring conditions as specified below:

- (a) The Permittee shall monitor and record the pressure drop and flow rate of scrubber CE005, at least once per day when the associated fermentation process or distillation and dehydration processes are in operation. When for any one reading, the pressure drop across the scrubber is outside the normal range of 1.0 and 6.0 inches of water, or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C - Compliance Response Plan - Implementation, Preparation, Records, and Reports. When for any one reading, the flow rate of any of the scrubbers is less than the minimum of 20 gallons per minute, or a minimum established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C - Compliance Response Plan - Implementation, Preparation, Records, and Reports. A pressure reading that is outside the above mention 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 - Compliance Response Plan - Preparation, Implementation, Records, and Reports shall be considered a deviation from this permit.
- (b) An external inspection shall be performed each calendar quarter of the scrubber controlling the operation. Inspections required by this condition shall not be performed in consecutive months. 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.

These monitoring conditions are necessary because scrubber CE005 for the fermentation process and the distillation and dehydration process must operate properly to ensure compliance with 326 IAC 2-2 (PSD), 326 IAC 2-8-4 (FESOP), and 326 IAC 8-1-6 (BACT).

- 4. The DDGS dryer (EU035) and DDGS cooler (EU036), which are controlled by RTO CE007, have applicable compliance monitoring conditions as specified below:
 - (a) Visible emission notations of the stack exhaust EP007 shall be performed once per day during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal. 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. 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. 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 Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed. Failure to take response steps in accordance with Section C - Compliance Response Plan – Preparation, Implementation, Records and Reports shall be considered a deviation from this permit.
 - (b) A continuous monitoring system shall be calibrated, maintained, and operated on the thermal oxidizer (CE007) 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 oxidizer at or above the 3-hour average temperature of 1,500°F.
 - (c) 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.

- (d) On and after the date the approved stack test results are available, the Permittee shall operate the thermal oxidizer at or above the 3-hour average temperature as observed during the compliant stack test.
- (e) 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.
- (f) The duct pressure or fan amperage shall be observed at least once per day when the thermal oxidizer/heat recovery steam generator 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.
- (g) An inspection shall be performed each calendar quarter of all cyclones controlling the DDGS dryer EU035. Inspections required by this condition shall not be performed in consecutive months.

These monitoring conditions are necessary because thermal oxidizer CE007 and cyclone CE006 must operate properly at all times the DDGS dryer (EU035) and DDGS cooler (EU036) 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).

- 5. The ethanol loading rack (EU045), which is controlled by enclosed flare CE009, has applicable compliance monitoring conditions as specified below:

The presence of a flare flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame.

These monitoring conditions are necessary because flare CE009 must operate properly at all times that the ethanol loading rack (EU045) is loading denatured ethanol to trucks to ensure compliance with 326 IAC 2-2 (PSD), 326 IAC 2-8-4 (FESOP), and 326 IAC 8-1-6 (BACT).

Conclusion

The construction and operation of this ethanol production plant shall be subject to the conditions of FESOP 053-21057-00062.

**Appendix A: Emission Calculations
From Two (2) 94.5 MMBtu/hr Boilers (EU046 and EU047)**

**Company Name: Central Indiana Ethanol, LLC
Address: NW 1/4, Section 3, T24N, R7E, Marion, IN 46952
FESOP: 053-21057-00062
Reviewer: ERG/YC
Date: June 22, 2005**

1. PTE of the Boilers While Burning Natural Gas:

Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr
189 (2 units combined)	1,656

Emission Factor in lbs/MMCF	Pollutant					
	PM*	PM10*	SO ₂	NOx**	VOC	CO**
	7.6	7.6	0.6	51	5.5	32.3
Potential to Emit in tons/yr	6.29	6.29	0.50	42.2	4.55	26.7

Emission factors are from AP-42, Chapter 1.4, Tables 1.4-1, 1.4-2, and 1.4-3 (AP-42, 3/98).

*PM and PM10 emission factors are condensable and filterable PM10 combined.

**NOx and CO emission factors were provided by the manufacturer. These emissions factors are lower than the ones in AP-42 and will be verified by stack testing.

Methodology

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

PTE (tons/yr) = Potential Throughput (MMCF/yr) x Emission Factor (lbs/MMCF) x 1 ton/2000 lbs

2. PTE of the Boilers While Burning Propane (back-up fuel):

Heat Input Capacity MMBtu/hr	Potential Throughput kgals/year	S = Weight % Sulfur
189 (2 units total)	18,094	15

Emission Factor in lb/kgal	Pollutant					
	PM*	PM10*	SO ₂	NO _x	VOC	CO
	0.6	0.6	1.5 (0.10S)	19	0.5	3.2
Potential to Emit (tons/yr)	5.43	5.43	13.6	172	4.52	29.0

*Assume PM emissions are equal to PM10 emissions.

Emission factors are from AP-42, Tables 1.5-1 (AP-42, 10/96).

1 gallon of propane has a heating value of 91,500 Btu.

Methodology

Potential Throughput (kgals/year) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 kgal/1,000 gal x 1 gal/0.0915 MMBtu

Potential Emission (tons/yr) = Throughput (kgals/yr) x Emission Factor (lb/kgal)/2,000 lb/ton

3. PTE of the Boilers (Worst Case Scenarios):

Pollutant	PM	PM10	SO ₂	NOx	VOC	CO
*PTE (tons/yr)	6.29	6.29	13.6	172	4.55	29.0

*PTE of these units are the worst case scenario between burning natural gas or propane.

Appendix A: Emission Calculations
Limited Emissions from Two (2) 94.5 MMBtu/hr Boilers (EU046 and EU047)

Company Name: Central Indiana Ethanol, LLC
Address: NW 1/4, Section 3, T24N, R7E, Marion, IN 46952
FESOP: 053-21057-00062
Reviewer: ERG/YC
Date: June 22, 2005

When combusting propane, the SO₂, NO_x, and CO emissions are greater than the emissions from NG combustion (see page 1 of this appendix). In order to be a FESOP, the Permittee has elected to comply with the operating hour limit for propane combustion in these units.

1. Limited PTE of the Boilers While Burning Propane (back-up fuel):

Heat Input Capacity MMBtu/hr	Operating Hour Limit hours/yr	S = Weight % Sulfur
189 (2 units total)	500	15

Emission Factor in lbs/kgal	Pollutant		
	SO ₂	NO _x	CO
	1.5	19	3.2
Limited PTE in tons/yr	0.77	9.81	1.65

*Assume PM emissions are equal to PM10 emissions.

Emission factors are from AP-42, Tables 1.5-1 (AP-42, 10/96).

1 gallon of propane has a heating value of 91,500 Btu.

Methodology

Limited PTE (tons/yr) = Heat Input Capacity (MMBtu/hr) x 1 kgal/91.5 MMBtu x Emission Factor (lbs/kgal) x Operating Hour Limit (hrs/yr) x 1 ton/2,000 lbs

2. PTE of the Boilers While Burning Natural Gas:

Heat Input Capacity MMBtu/hr
189 (2 units combined)

Emission Factor in lbs/MMCF	Pollutant		
	SO ₂	NO _x *	CO*
	0.6	51	32.3
Limited PTE in tons/yr	0.47	39.8	25.2

Emission factors are from AP-42, Chapter 1.4, Tables 1.4-1, 1.4-2, and 1.4-3 (AP-42, 3/98).

*NO_x and CO emission factors were provided by the manufacturer. These emissions factors are lower than the ones in AP-42 and will be verified by stack testing.

Methodology

Limited PTE (tons/yr) = Heat Input Capacity (MMBtu/hr) x 1 MMCF/1,000 MMBtu x Emission Factor (lbs/MMCF) x (8760 - Propane Operating Hour Limit) (hrs/yr) x 1 ton/2,000 lbs

3. PTE of the Boilers with Limits:

Pollutant	SO ₂	NO _x	CO
Total PTE (tons/yr)	1.24	49.6	26.9

Total PTE = PTE for Propane (tons/yr) + PTE for NG (tons/yr)

Appendix A: Emission Calculations
PM10 and PM10 Emissions
From Grain Loading, Handling, and DDGS Loadout Operations

Company Name: Central Indiana Ethanol, LLC
Address: NW 1/4, Section 3, T24N, R7E, Marion, IN 46952
FESOP: 053-21057-00062
Reviewer: ERG/YC
Date: June 22, 2005

1. Captured Emissions:

Process	Control Device ID	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)
Corn Dump Pit	CE001	Baghouse	0.008	15,100	1.04	4.54
Grain Handling	CE002	Baghouse	0.008	7,300	0.50	2.19
Hammermill EU010	CE003	Baghouse	0.008	6,000	0.41	1.80
Hammermill EU011	CE004	Baghouse	0.008	6,000	0.41	1.80
DDGS Loadout	CE008	Baghouse	0.008	3,500	0.24	1.05
Total						11.4

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

2. Fugitive Emissions:

Process	Unit ID	Throughput Limit (tons/yr)	PM/PM10 Emission Factor* (lbs/ton)	PTE of PM/PM10 before Control (tons/yr)	Capture Efficiency** (%)	Fugitive PM/PM10 Emissions (tons/yr)
Grain Handling	FS001	646,800	0.035	11.3	80%	2.26
DDGS Storage	FS002	210,590	0.003	0.32	0%	0.32
DDGS Loadout	FS003	210,590	0.0643	6.77	80%	1.35
Total						3.93

* Emission factor for grain handling is from AP-42, Table 9.9.1-1 (AP-42, 03/03). Emission factors for DDGS storage and loadout process were provided by the source. Assume all PM emissions are PM10 emissions.

** The capture efficiency information was provided by the source.

Methodology

Fugitive PM/PM10 Emissions (tons/yr) = Throughput Limit (tons/yr) x Emission Factor (lbs/ton) x (1-Capture Efficiency)

**Appendix A: Emission Calculations
VOC and HAP Emissions
From the Fermentation and Distillation Process**

**Company Name: Central Indiana Ethanol, LLC
Address: NW 1/4, Section 3, T24N, R7E, Marion, IN 46952
FESOP: 053-21057-00062
Reviewer: ERG/YC
Date: June 22, 2005**

1. Process Description:

Max. Throughput Rate: 7,060 gal/hr of ethanol

Control Equipment: Wet Scrubber CE005 which controls both the fermentation process and the distillation and dehydration process.

2. Potential to Emit (PTE) of VOC and HAP:

Pollutant	*Emission Rate after Control (lbs/hr)	PTE after Control (tons/yr)	**Control Efficiency (%)	PTE before Control (tons/yr)
VOC	6.00	26.3	98%	1,314
HAP				
Acetaldehyde	1.55	6.79	50%	13.6
Acrolein	0.008	0.04	0%	0.04
Formaldehyde	0.012	0.05	0%	0.05
Methanol	0.009	0.04	0%	0.04
Total	1.58	6.92		13.7

* This is provided by the source based on the stack test results from Delta-T Corporation and scaled linearly based on production capacity.

The Permittee will perform stack testing to demonstrate compliance with the above emission rates.

** The control efficiency information is based on the information from other similar plants.

Note: According to the testing results from other similar plants, the potential VOC emissions before control from each of the fermentation process and the distillation and dehydration process are greater than 25 tons/yr.

Methodology

PTE after Control (tons/yr) = Emission Rate after Control (lbs/hr) x 8760 hr/yr x 1 ton/2000 lbs

PTE before Control (tons/yr) = PTE after Control (tons/yr) / (1- Control Efficiency)

**Appendix A: Emission Calculations
Criteria Pollutants
From the 94.9 MMBtu/hr DDGS Dryer (EU035) and the 12 MMBtu/hr RTO (CE007)**

**Company Name: Central Indiana Ethanol, LLC
Address: NW 1/4, Section 3, T24N, R7E, Marion, IN 46952
FESOP: 053-21057-00062
Reviewer: ERG/YC
Date: June 22, 2005**

Heat Input Capacity
MMBtu/hr

107 (2 units combined)

	Pollutant					
Emission Factor	PM*	PM10*	SO ₂ *	NOx**	VOC*	CO*
	8.0 (lbs/hr)	8.0 (lbs/hr)	8.0 (lbs/hr)	51 (lbs/MMCF)	6.0 (lbs/hr)	14.5 (lbs/hr)
Potential to Emit in tons/yr	35.0	35.0	35.0	23.9	26.3	63.5

*PM, PM10, SO₂, VOC, and CO emission rates were estimated by the source based on the stack testing results from similar sources. These emission rates are the proposed emission limits in this permit and will be verified by stack testing.

**NOx emission factor is from the manufacturer for natural gas combustion, which is lower than the NOx emission factor in AP-42. The Permittee is required to perform a stack test to verify this factor.

Methodology

PTE of PM, PM10, SO₂, VOC and CO (tons/yr) = Emission Factor (lbs/hr) x 8760 hr/yr x 1 ton/2000 lbs

PTE of NOx (tons/yr) = Heat Input Capacity (MMBtu/hr) x 1 MMCF/1,000 MMBtu x Emission Factor (lbs/MMCF) x 8760 hr/yr x 1 ton/2000 lbs

**Appendix A: Emission Calculations
HAP Emissions
From the 94.9 MMBtu/hr DDGS Dryer (EU035) and the 12 MMBtu/hr RTO (CE007)**

**Company Name: Central Indiana Ethanol, LLC
Address: NW 1/4, Section 3, T24N, R7E, Marion, IN 46952
FESOP: 053-21057-00062
Reviewer: ERG/YC
Date: June 22, 2005**

Heat Input Capacity
MMBtu/hr

Control Efficiency

107 (2 units combined)

98% (estimated by the source)

	Pollutant				
	Acetaldehyde	Acrolein	Formaldehyde	Methanol	Total
Emission Rate before Control (lbs/hr) *	2.64	0.135	1.08	0.30	6.0
PTE before Control in tons/yr	11.6	0.59	4.73	1.31	18.2
PTE after Control in tons/yr	0.23	0.01	0.09	0.03	0.36

*HAP emission rates were estimated by the source based on the stack testing results from similar sources. The Permittee will perform stack tests to verify the HAP emissions from these units.

Methodology

PTE before Control (tons/yr) = Emission Factor before Control (lbs/hr) x 8760 hr/yr x 1 ton/2000 lbs

PTE after Control (tons/yr) = PTE before Control (tons/yr) x (1-Control Efficiency)

Appendix A: Emission Calculations
NOx Emissions from Propane (Back-up Fuel) Combustion
From the 94.9 MMBtu/hr Dryer (EU035) and the 12 MMBtu/hr RTO (CE007)

Company Name: Central Indiana Ethanol, LLC
Address: NW 1/4, Section 3, T24N, R7E, Marion, IN 46952
FESOP: 053-21057-00062
Reviewer: ERG/YC
Date: June 22, 2005

1. PTE of the DDGS Dryer and the RTO when burning propane (back-up fuel):

Heat Input Capacity MMBtu/hr	Potential Throughput kgals/year	S = Weight % Sulfur
107 (2 units total)	10,244	15

	Pollutant					
Emission Factor in lb/kgal	PM*	PM10*	SO ₂	NO _x	VOC	CO
	0.6	0.6	1.5 <i>(0.10S)</i>	19	0.5	3.2
Potential to Emit (tons/yr)	3.07	3.07	7.68	97.3	2.56	16.4

*Assume PM emissions are equal to PM10 emissions.
Emission factors are from AP-42, Tables 1.5-1 (AP-42, 10/96).
1 gallon of propane has a heating value of 91,500 Btu.

Methodology

Potential Throughput (kgals/year) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 kgal/1,000 gal x 1 gal/0.0915 MMBtu
PTE (tons/yr) = Throughput (kgals/yr) x Emission Factor (lb/kgal)/2,000 lb/ton

2. PTE of the DDGS Dryer and the RTO with propane operating hour limit:

When combusting the back-up fuel, the NOx emissions are greater than the NOx emissions from NG combustion. In order to be a FESOP, the Permittee has elected to comply with the operating hour limit for propane combustion in these units.

Heat Input Capacity MMBtu/hr	Propane Operating Hour Limit hours/yr		
107 (2 units combined)	500		
	For Propane	For NG	Total
NOx Emission Factor	19 (lbs/kgal)	51 (lbs/MMCF)	
Limited PTE (tons/yr)	5.55	22.5	28.1

*NOx emission factor is from AP-42, Table 1.5-1 (AP-42, 10/96).
1 gallon of propane has a heating value of 91,500 Btu.

Methodology

Limited PTE (tons/yr) for Propane Combustion = Heat Input Capacity (MMBtu/hr) x 1 kgal/91.5 MMBtu x Propane Emission Factor (lbs/kgal) x Propane Operating Hour Limit (hrs/yr) x 1 ton/2,000 lbs
Limited PTE (tons/yr) for NG Combustion = Heat Input Capacity (MMBtu/hr) x 1 MMCF/1,000 MMBtu x NG Emission Factor (lbs/MMCF) x (8760 - Propane Operating Hour Limit) (hrs/yr) x 1 ton/2,000 lbs
Total PTE of NOx = PTE for Propane (tons/yr) + PTE for NG (tons/yr)

Appendix A: Emission Calculations
NOx Emissions from Propane (Back-up Fuel) Combustion
From the 94.9 MMBtu/hr Dryer (EU035) and the 12 MMBtu/hr RTO (CE007)

Company Name: Central Indiana Ethanol, LLC
Address: NW 1/4, Section 3, T24N, R7E, Marion, IN 46952
FESOP: 053-21057-00062
Reviewer: ERG/YC
Date: June 22, 2005

1. PTE of the DDGS Dryer and the RTO when burning propane (back-up fuel):

Heat Input Capacity MMBtu/hr	Potential Throughput kgals/year	S = Weight % Sulfur
107 (2 units total)	10,244	15

Emission Factor in lb/kgal	Pollutant					
	PM*	PM10*	SO ₂	NO _x	VOC	CO
	0.6	0.6	1.5 (0.10S)	19	0.5	3.2
Potential to Emit (tons/yr)	3.07	3.07	7.68	97.3	2.56	16.4

*Assume PM emissions are equal to PM10 emissions.
Emission factors are from AP-42, Tables 1.5-1 (AP-42, 10/96).
1 gallon of propane has a heating value of 91,500 Btu.

Methodology

Potential Throughput (kgals/year) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 kgal/1,000 gal x 1 gal/0.0915 MMBtu
PTE (tons/yr) = Throughput (kgals/yr) x Emission Factor (lb/kgal)/2,000 lb/ton

2. PTE of the DDGS Dryer and the RTO with propane operating hour limit:

When combusting the back-up fuel, the NOx emissions are greater than the NOx emissions from NG combustion. In order to be a FESOP, the Permittee has elected to comply with the operating hour limit for propane combustion in these units.

Heat Input Capacity MMBtu/hr	Propane Operating Hour Limit hours/yr		
107 (2 units combined)	500		
NOx Emission Factor	For Propane 19 (lbs/kgal)	For NG 51 (lbs/MMCF)	Total
Limited PTE (tons/yr)	5.55	22.5	28.1

*NOx emission factor is from AP-42, Table 1.5-1 (AP-42, 10/96).
1 gallon of propane has a heating value of 91,500 Btu.

Methodology

Limited PTE (tons/yr) for Propane Combustion = Heat Input Capacity (MMBtu/hr) x 1 kgal/91.5 MMBtu x Propane Emission Factor (lbs/kgal) x Propane Operating Hour Limit (hrs/yr) x 1 ton/2,000 lbs
Limited PTE (tons/yr) for NG Combustion = Heat Input Capacity (MMBtu/hr) x 1 MMCF/1,000 MMBtu x NG Emission Factor (lbs/MMCF) x (8760 - Propane Operating Hour Limit) (hrs/yr) x 1 ton/2,000 lbs
Total PTE of NOx = PTE for Propane (tons/yr) + PTE for NG (tons/yr)

Appendix A: Emission Calculations
VOC and HAP Emissions from Ethanol Loading Rack (EU045)

Company Name: Central Indiana Ethanol, LLC
Address: NW 1/4, Section 3, T24N, R7E, Marion, IN 46952
FESOP: 053-21057-00062
Reviewer: ERG/YC
Date: June 22, 2005

1. Emission Factors: AP-42

Ethanol will be shipped by truck and by rail. Railcars will be dedicated fleets, but the trucks may be used to carry gasoline prior to filling with ethanol. Railcars and trucks will be filled by submerged loading process and the truck loading process is controlled by flare CE012, which has a control efficiency of 98% for VOC and HAPs.

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 rack can be estimated from the following equation:

$$L = 12.46 \times (\text{SPM})/T$$

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)	0.6	3.99	66	505	3.90
Gasoline (clean cargo)	0.5	3.99	66	505	3.25
Denatured Ethanol (normal)	0.6	0.50	49.7	505	0.37
Denatured Ethanol (clean cargo)	0.5	0.50	49.7	505	0.31

Therefore, the emission factor for loading denatured ethanol to the trucks which stored gasoline previously

$$= L (\text{gasoline, normal}) - L (\text{gasoline, clean cargo}) + L (\text{denatured ethanol, clean cargo}) = 0.96 \quad (\text{lbs/kgal})$$

2. Unlimited Potential to Emit VOC Before Control:

The worst case scenario is assuming that all the trucks are used to ship gasoline before filling with denatured ethanol and all the denatured ethanol is shipped by trucks.

$$\text{Max. Loading Rate} = 96 \text{ kgal/hr}$$

$$\text{PTE of VOC before Control (tons/yr)} = 96 \text{ kgal/hr} \times 0.96 \text{ lbs/kgal} \times 8760 \text{ hr/yr} \times 1 \text{ ton}/2000 \text{ lbs} = 402 \text{ tons/yr}$$

3. Limited Potential to Emit VOC after Control:

Annual Production Limit: 63,000 kgal/yr
Flare Control Efficiency: 98% (for truck loading only)

$$\begin{aligned} \text{Limited PTE of VOC by Trucks (tons/yr)} &= 0.96 \text{ lbs/kgal} \times 63,000 \text{ kgal/yr} \times (1-98\%) \times 1 \text{ tons}/2000 \text{ lbs} = 0.60 \text{ tons/yr} \\ \text{Limited PTE of VOC by Railcars (tons/yr)} &= 0.37 \text{ lbs/kgal} \times 63,000 \text{ kgal/yr} \times 1 \text{ tons}/2000 \text{ lbs} = 11.6 \text{ tons/yr} \end{aligned}$$

4. Potential to Emit HAPs:

HAP emissions are mainly from the unloading process for trucks, which may have been used to ship gasoline previously.

HAP	*HAP Fraction	PTE of HAP before Control (tons/yr)	Limited PTE of HAP after Control (tons/yr)
Benzene	2.50E-03	1.01	1.51E-03
Carbon Disulfide	2.00E-05	0.01	1.20E-05
Cumene	1.00E-04	0.04	6.02E-05
Ethyl benzene	5.00E-05	0.02	3.01E-05
n-Hexane	5.00E-02	20.1	3.01E-02
Toluene	5.00E-03	2.01	3.01E-03
Xylene	5.00E-04	0.20	3.01E-04
Total	0.06	23.4	0.04

* This is the HAP fraction for gasoline vapors.

Methodology

PTE of HAP before Control (tons/yr) = PTE of VOC before Control (tons/yr) x HAP %

Limited PTE of HAP after Control (tons/yr) = Limited PTE of VOC by Trucks (tons/yr) x HAP %

**Appendix A: Emission Calculations
Fugitive Emissions From Paved Roads**

**Company Name: Central Indiana Ethanol, LLC
Address: NW 1/4, Section 3, T24N, R7E, Marion, IN 46952
FESOP: 053-21057-00062
Reviewer: ERG/YC
Date: June 22, 2005**

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 = road surface silt loading (g/m²) = 0.6 (g/m²) (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 = 120

PM Emission Factor = $(0.082 \times (7.4/2)^{0.65} \times (29/3)^{1.5} - 0.00047) \times (1 - 120/1460) = 1.03$ lbs/mile

PM10 Emission Factor = $(0.016 \times (7.4/2)^{0.65} \times (29/3)^{1.5} - 0.00047) \times (1 - 120/1460) = 0.20$ lbs/mile

2. Potential to Emit (PTE) of PM/PM10 Before Control from Paved Roads:

Vehicle Type	*Ave Weight of Vehicles (tons)	*Trip Number (trips/day)	* Round Trip Distance (mile/trip)	Vehicle Mile Traveled (VMT) (miles/yr)	Traffic Component (%)	Component Vehicle Weight (tons)	PTE of PM before Control (tons/yr)	PTE of PM10 before Control (tons/yr)
Grain Receiving	29	71	0.84	21,769	60.7%	17.6	11.3	2.19
DDGS Load Out	29	23	0.84	7,052	19.7%	5.70	3.65	0.71
Ethanol Load Out	29	22	0.84	6,745	18.8%	5.45	3.49	0.68
Denaturant Delivery	29	1	0.84	307	0.85%	0.25	0.16	0.03
Total				35,872	100%	29.0	18.5	3.61

* This information is provided by the source.

Methodology

Vehicle Mile Traveled (miles/yr) = Trip Number (trips/hr) x Round-Trip Distance (mile/trip) x 8760 hrs/yr

Traffic Component (%) = VMT / Total VMT

Component Vehicle Weight = Ave. Weight of Vehicles (ton) x Traffic Component (%)

PTE of PM/PM10 before Control (tons/yr) = VMT (miles/yr) x PM/PM10 Emission Factors x 1 ton/2000 lbs

3. Potential to Emit (PTE) of PM/PM10 after Control from Paved Roads:

The source proposed to use periodic sweeping to control the fugitive dust emissions.

The control efficiency from sweeping is assumed to be 50%.

PTE of PM after Control = 18.5 tons/yr x (1-50%) = **9.27 tons/yr**

PTE of PM10 after Control = 3.61 tons/yr x (1-50%) = **1.81 tons/yr**

**Appendix A: Emission Calculations
Internal Combustion Engines
From the Diesel Fired Emergency Generator EU034 (Insignificant)**

**Company Name: Central Indiana Ethanol, LLC
Address: NW 1/4, Section 3, T24N, R7E, Marion, IN 46952
FESOP: 053-21057-00062
Reviewer: ERG/YC
Date: June 22, 2005**

Power Output
Horse Power (HP)

1,788

Operation Limit
hr/yr

500

S = Weight % Sulfur

0.5

Emission Factor in lb/HP-hr	Pollutant					
	PM*	PM10*	SO ₂ (8.09E-03*S)	NO _x	**VOC	CO
	7.00E-04	7.00E-04	4.05E-03	2.40E-02	7.05E-04	5.50E-03
Potential to Emit in tons/yr	0.31	0.31	1.81	10.7	0.32	2.46

*Assume PM10 emissions are equal to PM emissions.

** Assume TOC (total organic compounds) emissions are equal to VOC emissions.

Emission factors are from AP-42, Chapter 3.3, Table 3.3-1, SCC #2-02-001-02 and 2-03-001-01 (AP-42 Supplement B, 10/96).

Note: As defined in the September 6, 1995 memorandum from John S. Seitz of US EPA on the subject of "Calculating Potential to Emit for Emergency Generators", an emergency generator's sole function is to provide back-up power when power from the local utility is interrupted. The only circumstances under which an emergency generator would operate when utility power is available are during operator training or brief maintenance checks. The generator's potential to emit is based on an operating time of 500 hours per year as set forth in the EPA memo.

Methodology

PTE (tons/yr) = Power Output (HP) x Emission Factor (lb/HP-hr) x Operation Limit (hr/yr) x 1 ton/2000 lbs

**Appendix A: Emission Calculations
PM/PM10 Emissions
From the the Cooling Tower (Insignificant Activity)**

**Company Name: Central Indiana Ethanol, LLC
Address: NW 1/4, Section 3, T24N, R7E, Marion, IN 46952
FESOP: 053-21057-00062
Reviewer: ERG/YC
Date: June 22, 2005**

1. Process Description:

Type of Cooling Tower:	Induced Draft
Circulation Flow Rate:	33,000 gal/min
Total Drift:	0.005% of the circulating flow
Total Dissolved Solids:	2,500 ppm
Density:	8.345 lbs/gal

Note: The information above was provided by the cooling tower manufacturer for the same units located at a similar source.

2. Potential to Emit PM/PM10:

Assume all the dissolved solids become PM10 emissions and assume PM emissions are equal to PM10 emissions.

$$\text{PTE of PM/PM10 (lbs/hr)} = 33,000 \text{ gal/min} \times 60 \text{ min/hr} \times 0.005\% \times 8.345 \text{ lbs/gal} \times 2,500 \text{ ppm} \times 1/1,000,000 \text{ ppm} = \quad \mathbf{2.07 \text{ lbs/hr}}$$

$$\text{PTE of PM/PM (tons/yr)} = 2.07 \text{ lbs/hr} \times 8760 \text{ hr/yr} \times 1 \text{ ton}/2000 \text{ lbs} = \quad \mathbf{9.05 \text{ tons/yr}}$$

**Appendix A: Emission Calculations
VOC and HAP Emissions
From Equipment Leaks**

**Company Name: Central Indiana Ethanol, LLC
Address: NW 1/4, Section 3, T24N, R7E, Marion, IN 46952
FESOP: 053-21057-00062
Reviewer: ERG/YC
Date: June 22, 2005**

1. Fugitive VOC Emissions:

Equipment Component Source	Product	Component Count*	Emission Factor** (lbs/comp-hr)	Subpart VV Control Effectiveness*** (%)	Fugitive VOC Emissions (tons/yr)
Valves	Gas/Vapor	75	0.013134	87%	0.56
Valves	Light Liquid	100	0.008866	84%	0.62
Pumps	Gas/Vapor	10	0.04378	69%	0.59
Pressure-Relief Valves	Gas/Vapor	5	0.2288	87%	0.65
Sampling Connections	All	5	0.033	0%	0.72
Open-Ended Lines	All	10	0.00374	0%	0.16
Flanges	All	115	0.004026	0%	2.03
Total					5.34

* 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.

Methodology

Fugitive VOC Emissions (tons/yr) = Component Count x Emission Factor (lbs/hr) x 8760 hr/yr x 1 ton/2000 lbs x (1-Control Effectiveness)

2. Fugitive HAP Emissions:

HAP	HAP Fraction*	Fugitive HAP Emissions (tons/yr)
Acetaldehyde	2.00E-04	1.07E-03
Methanol	2.00E-04	1.07E-03
Benzene	2.50E-03	1.34E-02
Carbon Disulfide	2.00E-05	1.07E-04
Cumene	1.00E-04	5.34E-04
Ethylbenzene	5.00E-05	2.67E-04
n-Hexane	5.00E-02	2.67E-01
Toluene	5.00E-03	2.67E-02
Xylenes	5.00E-04	2.67E-03
Total		0.31

* This is the HAP fraction for gasoline vapors or from test results.

Methodology

Fugitive HAP Emissions (tons/yr) = Fugitive VOC Emissions (tons/yr) x HAP Fraction

Appendix B

Best Available Control Technology (BACT) Determinations

Source Background and Description

Source Name:	Central Indiana Ethanol, LLC
Source Location:	NW ¼, Section 3, T24N, R7E, Marion, Indiana 46952
County:	Grant
SIC Code:	2869
Operating Permit No.:	F053-21057-00062
Permit Reviewer:	ERG/YC

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 (EU035); and
- Ethanol Loading Rack (EU045).

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 dryer is provided in Section B.3, and the BACT review for the ethanol loading rack 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:

Central Indiana 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, Central Indiana Ethanol, LLC is required to control the VOC emissions from the fermentation process with 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 adsorbent are recovered.

Carbon adsorption systems operate in two phases: adsorption and desorption. Adsorption is rapid and removes most of the VOC in the stream. Eventually, the adsorbent becomes saturated with the vapors and the system's efficiency drops. Regulatory considerations dictate that the adsorbent be regenerated or replaced soon after efficiency begins to decline. In regenerative systems, the adsorbent is reactivated with steam or hot air and the adsorbate (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 solvent used. However, other solvents are used dependent upon 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 the one whose VOC reduction efficiency 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 the VOC 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 95%. 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
Putnam Ethanol, LLC	F133-19163-00003	10/05/04 (IN)	Fermentation	Wet scrubber with a control efficiency of 97%. VOC emissions < 2.44 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.

(c) In addition to the RBLC data, Central Indiana Ethanol, LLC and IDEM, OAQ collected the following information for the fermentation processes at other ethanol production plants:

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)
AI-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 this type of operation. 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 (%)
Thermal Oxidizer	98%
Catalytic Oxidizer	98%
Flare	98%
Wet Scrubber	98%* or 20 ppmv
Refrigeration Condenser	90%

* Although previous permits (see tables in Step 1 of Appendix B.1) required wet scrubbers to achieve minimum control efficiencies that are less than 98%, the Permittee proposes to install a wet scrubber with a control efficiency greater than 98% or with VOC emissions less than 20 ppmv. Based on the stack test results from AI-Corn and Central MN Ethanol (see the table in Step 1 (c)), the Permittee believes that the wet scrubber will provide a control efficiency greater than 98% for the fermentation process because they plan to install a wet scrubber which is made by the same manufacturer as the ones previously installed at the AI-Corn and Central MN Ethanol plants. These plants have demonstrated using stack testing that the 98% control efficiency is technically feasible for the wet scrubber to be installed at this source.

Step 4 – Evaluate the Most Effective Controls and Document Results

Based on control efficiency, the thermal oxidizer, flare, and wet scrubber are the most effective control technologies.

Step 5 – Select BACT

The Permittee plans to recover and sell the carbon dioxide from the fermentation process, which can only be achieved using the wet scrubber. Both thermal oxidizer and flare destroy the product rather than recovering it. In addition, both the thermal oxidizer and flare generate their own emissions from the combustion process. Since the use of scrubbers has lower environmental impact, generates economic benefit for the Permittee, and provides the highest ranked control efficiency of 98%, the Permittee proposed to use wet scrubber CE005 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 wet scrubber CE005.
- (b) The overall VOC control efficiency for the wet scrubber CE005 (including the capture efficiency and destruction efficiency) shall be at least 98% or the VOC emissions from scrubber CE005 shall not exceed 20 ppmv.

Note that when the inlet VOC concentration is low, the scrubber will not be able to achieve a control efficiency of 98%. However, the scrubber manufacturer guarantees that the VOC outlet concentration will be less than 20 ppmv or VOC emissions will be reduced by 98%. Therefore, the Permittee shall either comply with the VOC control efficiency requirement or comply with the VOC outlet concentration limits, depending on the inlet VOC concentrations. Compliance with these limits will be demonstrated by stack testing.

- (c) The VOC emissions from wet scrubber CE005 shall not exceed 6.0 lbs/hr. This VOC emission limit was proposed by the Permittee and is based on stack test results from similar sources.

Appendix B.2 Best Available Control Technology (BACT) Determination For Distillation and Dehydration Process

Introduction:

Central Indiana Ethanol, LLC will use distillation to concentrate the ethanol produced in the fermentation process. The potential VOC emissions from the distillation and dehydration 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 rules in 326 IAC 8 applicable to this process, Central Indiana Ethanol, LLC is required to implement BACT to comply with 326 IAC 8-1-6. The Permittee proposes to use the wet scrubber CE005, which will also be used to control the emissions from the fermentation process, to control the emissions from the distillation and dehydration process.

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 the dryers in EPA’s RACT/BACT/LAER Clearinghouse (RBLCL) 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
Putnam Ethanol, LLC	F133-19163-00003	10/05/04 (IN)	Distillation/Dryers	RTO with a control efficiency of 98%. VOC emissions < 9.61 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.

(c) In addition to the RBLCL data, Central Indiana Ethanol, LLC submitted the following information collected from other ethanol production plants for the distillation process:

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 and dehydration 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 (%)
Thermal Oxidizer	98
Catalytic Oxidizer	98
Flare	98
Wet Scrubber	98* or 20 ppmv
Refrigeration Condenser	90

*Based on to the stack testing results from AI-Corn and Central MN Ethanol (see the table in Step 1 (c)), the Permittee believes that the proposed wet scrubber will provide a control efficiency greater than 98% for the distillation process since they will install a scrubber from the same manufacturer as the ones previously installed at the AI-Corn and Central MN Ethanol plants. Therefore, the 98% control efficiency is believed to be technically feasible for the wet scrubber at this source based on the stack test data for AI-Corn and Central MN Ethanol.

Step 4 – Evaluate the Most Effective Controls and Document Results

Based on control efficiency, the thermal oxidizer, flare, and wet scrubber are the most effective control technologies.

Step 5 – Select BACT

Both thermal oxidizer and flare generate their own emissions from the combustion process. Central Indiana Ethanol, LLC proposes to use scrubber CE005, which will also be used to control the emissions from the fermentation process as the BACT for the distillation and dehydration process. Pursuant to 326 IAC 8-1-6, IDEM, OAQ has determined that the following requirements represent BACT for the distillation and dehydration process:

- (a) The VOC emissions from the distillation and dehydration process shall be controlled by wet scrubber CE005.

- (b) The overall VOC control efficiency for the wet scrubber CE005 (including the capture efficiency and control efficiency) shall be at least 98% or the VOC emissions from scrubber CE005 shall not exceed 20 ppmv.

Note that when the inlet VOC concentration is low, the scrubber will not be able to achieve a control efficiency of 98%. However, the scrubber manufacturer guarantees that the VOC outlet concentration will be less than 20 ppmv or VOC emissions will be reduced by 98%. Therefore, the Permittee shall either comply with the VOC control efficiency requirement or comply with the VOC outlet concentration limits, depending on the inlet VOC concentrations. Compliance with these limits will be demonstrated by stack testing.

- (c) The VOC emissions from wet scrubber CE005 shall not exceed 6.0 lbs/hr. This VOC emission limit was proposed by the Permittee and is based on stack test results from similar sources.

**Appendix B.3
 Best Available Control Technology (BACT) Determination
 For the DDGS Dryer (EU035)**

Introduction:

VOC will be emitted from the DDGS drying and cooling 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 dryer and the partial oxidation of organic material during the drying process. The potential VOC emissions from the DDGS dryer EU035 are greater than 25 tons per year and there are no other rules in 326 IAC 8 applicable to this DDGS dryer, the Permittee is required to control the VOC emissions from the DDGS dryer (EU035) with BACT. Central Indiana Ethanol, LLC proposed to control the VOC emissions from the DDGS drying and cooling process by a regenerative thermal oxidizer (CE007) with a control efficiency of 96%.

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 the 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
Putnam Ethanol, LLC	F133-19163-00003	10/05/04 (IN)	Distillation/Dryers	RTO with a control efficiency of 98%. VOC emissions < 9.61 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)

(c) In addition to the RBLC data, Central Indiana Ethanol, LLC and IDEM, OAQ collected the following information for the DDGS dryers at other ethanol production plants:

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 this type of operation. 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 dryers due to the characteristics of the dryer exhaust gasses.

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. As a result, particulate matter in the dryer exhaust streams is likely to accumulate in the catalyst material, thereby fouling the catalyst and reducing the control efficiency. For this reason, OAQ has concluded that catalytic oxidation is an unreliable control technology for the dryers because of the presence of particulates in the exhaust gasses.

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 dryers, natural gas must be added to the exhaust gasses 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 condensers 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	98% 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

According to the analysis above, the most effective control is a thermal oxidizer with a control efficiency of 98%.

Step 5 – Select BACT

Central Indiana Ethanol, LLC proposed to use a regenerative thermal oxidizer with a control efficiency of 98% to control the VOC emissions from the DDGS dryer (EU035). Pursuant to 326 IAC 8-1-6, IDEM, OAQ has determined that the following requirements represent BACT for the DDGS dryer (EU035) at this source:

- (a) The VOC emissions from the DDGS dryer (EU035) shall be controlled by thermal oxidizer CE007.
- (b) The overall efficiency for the thermal oxidizer CE007 (including the capture efficiency and destruction efficiency) shall be at least 98% or the maximum outlet VOC concentration shall not exceed 10 ppmv. The Permittee is required to perform stack testing to demonstrate compliance with these limits.
- (c) The VOC emissions from thermal oxidizer CE007 shall not exceed 6.0 lbs/hr. This VOC emission limit was proposed by the Permittee and was calculated based on stack test results from similar sources and scaled up with plant capacities. The Permittee is required to perform stack testing to demonstrate compliance with these limits.

Appendix B.4 Best Available Control Technology (BACT) Determination For the Ethanol Loading Rack

Introduction:

Central Indiana Ethanol, LLC will ship denatured ethanol using either tank trucks or railcars. During the loading of the truck and rail tanks, VOC 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 carry gasoline before filling with ethanol. 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 when loading to trucks (see the calculations in Appendix A). Since the ethanol truck loading rack will be constructed after the January 1, 1980 applicability date and there are no other rules in 326 IAC 8 applicable to the ethanol loading rack, the Permittee is required to control the VOC emissions from the ethanol loading rack with BACT when loading to trucks.

With a production limit of 63 million gallons per year of denatured ethanol production, the potential VOC emissions from railcar loading are less than 25 tons/yr (see the calculations in Appendix A). Therefore, the ethanol loading terminal is not subject to the requirements of 326 IAC 8-1-6 (BACT) when loading ethanol to railcars.

Step 1 – Identify Control Options

The following available technologies were identified and evaluated to control VOC emissions from the ethanol loading racks:

(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. Flare; and
5. Refrigeration Condenser.

(b) The search for ethanol loading 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
Putnam Ethanol, LLC	F133-19163-00003	10/05/04 (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.

(c) In addition to the RBLC data, Central Indiana Ethanol, LLC submitted the following information collected from other ethanol production plants for the ethanol loadout process:

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 technically infeasible for this type of operation. 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 loading 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; therefore, potentially affect the control efficiency of the scrubber. A significant amount of VOC emissions emitted during the loading of tank trucks 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 loading facility. IDEM, OAQ reviewed industry data to determine the VOC control efficiency of each of these remaining control technologies. The results of this review are summarized in the following table.

Control Technology	VOC Control Efficiency (%)
Flare	98
Thermal Oxidizer	98
Refrigeration Condenser	Greater than 90

Step 4 – Evaluate the Most Effective Controls and Document Results

The two most effective control technologies are thermal oxidizers and flares.

Step 5 – Select BACT

Since flares achieve the highest control efficiency and have been used to control VOC emissions from other ethanol loading racks, Central Indiana Ethanol, LLC proposed to use an enclosed flare CE009 with a control efficiency of 98% to control the VOC emissions from the ethanol loading rack (EU045) when loading to the trucks. Pursuant to 326 IAC 8-1-6, IDEM, OAQ has determined that the following requirements represent BACT for the ethanol loading rack (EU045) at this source:

- (a) The VOC emissions from the ethanol loading rack (EU045) shall be collected and controlled by enclosed flare CE009 when loading denatured ethanol to trucks.
- (b) The overall efficiency for the enclosed flare CE009 (including the capture efficiency and destruction efficiency) shall be at least 98%.
- (c) The VOC emissions from the flare CE009 shall not exceed 1.84 lbs/hr. This limit was calculated based on the VOC emission factor of 0.96 lbs/kgal, the maximum truck loadout rate of 96 kgal/hr, and the flare control efficiency of 98% ($0.96 \text{ lbs/kgal} \times 96 \text{ kgal/hr} \times (1-98\%) = 1.84 \text{ lbs/hr}$). The VOC emission factor of 0.96 lbs/kgal was calculated using the equation in AP-42, Chapter 5.2.