



Mitchell E. Daniels, Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
MC 61-53
(317) 232-8603
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TO: Interested Parties / Applicant
DATE: January 23, 2008
RE: Bainbridge Compressor Station / 133-25139-00044
FROM: Matthew Stuckey, Deputy Branch Chief
Permits Branch
Office of Air Quality

Notice of Decision: Approval - Effective Immediately

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

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

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

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

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

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

Enclosures
FNPER.dot12/03/07



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New Source Construction and Minor Source Operating Permit OFFICE OF AIR QUALITY

Bainbridge Compressor Station Approximately 0.5 miles south of US 36 on North County Road 25 West Bainbridge, Indiana 46105

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

This permit is issued to the above mentioned company under the provisions of 326 IAC 2-1.1, 326 IAC 2-5.1, 326 IAC 2-6.1 and 40 CFR 52.780, with conditions listed on the attached pages.

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 MSOP under 326 IAC 2-6.1.

Operation Permit No.: M133-25139-00044	
Issued by: <i>Original signed by</i> Iryn Calilung, Section Chief Permits Branch Office of Air Quality	Issuance Date: January 23, 2008 Expiration Date: January 23, 2013

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SECTION A SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the source contained in conditions A.1 and A.2 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 2-5.1-3(c)][326 IAC 2-6.1-4(a)]

The Permittee owns and operates a stationary natural gas transmission and compression station.

Source Address:	Approximately 0.5 miles south of US 36 on North County Road 25 West, Bainbridge, Indiana 46105
Mailing Address:	747 East 22nd Street, Lombard, IL 60148
General Source Phone Number:	(630) 691-3802
SIC Code:	4922
County Location:	Putnam
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Minor Source Operating Permit Program Minor Source, under PSD and Emission Offset Rules Minor Source, Section 112 of the Clean Air Act Not 1 of 28 Source Categories

A.2 Emission Units and Pollution Control Equipment Summary

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

- (a) Two (2) natural gas fueled, simple cycle, combustion turbine compressors, identified as EU01 and EU02, approved for construction in 2008, with a rated capacity of 20,500 horsepower (hp) each, exhausting to Stack SV01 and SV02.

Under the NSPS for Stationary Combustion Turbines (40 CFR 60, Subpart KKKK), the two (2) compressors (EU01 and EU02) are considered affected facilities.

- (b) One (1) natural gas-fired, 4-stroke lean-burn, emergency generator, identified as EG01, approved for construction in 2008, with a rated capacity of 566 horsepower (hp), exhausting to Stack SV03.
- (c) One (1) natural gas-fired fuel gas heater, identified as H01, with a heat input capacity of 0.75 million British thermal units per hour, exhausting to Stack SV04;
- (d) Sixteen (16) natural gas-fired space heaters, with a heat input capacity of 0.06 million British thermal units per hour each.
- (e) Unpaved roadways.
- (f) One (1) condensate storage tank, with a maximum capacity of 5,830 gallons.
- (g) One (1) wastewater storage tank, with a maximum capacity of 5,830 gallons.

SECTION B GENERAL CONDITIONS

B.1 Definitions [326 IAC 2-1.1-1]

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 2-1.1-1) shall prevail.

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

Pursuant to 326 IAC 2-1.1-9(5)(Revocation of Permits), the Commissioner may revoke this permit if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.

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

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

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

B.4 Permit Term [326 IAC 2-6.1-7(a)][326 IAC 2-1.1-9.5][IC 13-15-3-6(a)]

- (a) This permit, M133-25139-00044, is issued for a fixed term of five (5) years from the issuance date of this permit, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3. Subsequent revisions, modifications, or amendments of this permit do not affect the expiration date of this permit.
- (b) If IDEM, OAQ, upon receiving a timely and complete renewal permit application, fails to issue or deny the permit renewal prior to the expiration date of this permit, this existing permit shall not expire and all terms and conditions shall continue in effect, until the renewal permit has been issued or denied.

B.5 Term of Conditions [326 IAC 2-1.1-9.5]

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

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

B.6 Enforceability

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

B.7 Severability

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

B.8 Property Rights or Exclusive Privilege

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

B.9 Duty to Provide Information

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

B.10 Certification

- (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 Notification [326 IAC 2-6.1-5(a)(5)]

- (a) An annual notification shall be submitted by an authorized individual to the Office of Air Quality stating whether or not the source is in operation and in compliance with the terms and conditions contained in this permit.
- (b) The annual notice shall be submitted in the format attached no later than March 1 of each year to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, IN 46204-2251
- (c) The notification 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.

B.12 Preventive Maintenance Plan [326 IAC 1-6-3]

- (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
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

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

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

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

- (a) All terms and conditions of permits established prior to M133-25139-00044 and issued pursuant to permitting programs approved into the state implementation plan have been either:
- (1) incorporated as originally stated,
 - (2) revised, or
 - (3) deleted.
- (b) All previous registrations and permits are superseded by this permit.

B.14 Termination of Right to Operate [326 IAC 2-6.1-7(a)]

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 ninety (90) days prior to the date of expiration of the source's existing permit, consistent with 326 IAC 2-6.1-7.

B.15 Permit Renewal [326 IAC 2-6.1-7]

- (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 2-6.1-7. Such information shall be included in the application for each emission unit at this source. The renewal application does require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

Request for renewal shall be submitted to:

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

- (b) A timely renewal application is one that is:
- (1) Submitted at least ninety (90) days prior to the date of the expiration of this permit; and
 - (2) If the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.
- (c) If the Permittee submits a timely and complete application for renewal of this permit, the source's failure to have a permit is not a violation of 326 IAC 2-6.1 until IDEM, OAQ takes final action on the renewal application, except that this protection shall cease to apply if, subsequent to the completeness determination, the Permittee fails to submit by the deadline specified in writing by IDEM, OAQ any additional information identified as being needed to process the application.

B.16 Permit Amendment or Revision [326 IAC 2-5.1-3(e)(3)][326 IAC 2-6.1-6]

- (a) Permit amendments and revisions are governed by the requirements of 326 IAC 2-6.1-6 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
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

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

- (c) The Permittee shall notify the OAQ within thirty (30) calendar days of implementing a notice-only change. [326 IAC 2-6.1-6(d)]

B.17 Source Modification Requirement

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

B.18 Inspection and Entry
[326 IAC 2-5.1-3(e)(4)(B)][326 IAC 2-6.1-5(a)(4)][IC 13-14-2-2][IC 13-17-3-2][IC 13-30-3-1]

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

- (a) Enter upon the Permittee's premises where a permitted 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.19 Transfer of Ownership or Operational Control [326 IAC 2-6.1-6]

- (a) The Permittee must comply with the requirements of 326 IAC 2-6.1-6 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
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

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

- (c) The Permittee may implement notice-only changes addressed in the request for a notice-only change immediately upon submittal of the request. [326 IAC 2-6.1-6(d)(3)]

B.20 Annual Fee Payment [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.

- (b) 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.21 Credible Evidence [326 IAC 1-1-6]

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

SECTION C SOURCE OPERATION CONDITIONS

Entire Source

Emission Limitations and Standards [326 IAC 2-6.1-5(a)(1)]

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

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

C.2 Permit Revocation [326 IAC 2-1.1-9]

Pursuant to 326 IAC 2-1.1-9 (Revocation of Permits), this permit to construct and operate may be revoked for any of the following causes:

- (a) Violation of any conditions of this permit.
- (b) Failure to disclose all the relevant facts, or misrepresentation in obtaining this permit.
- (c) Changes in regulatory requirements that mandate either a temporary or permanent reduction of discharge of contaminants. However, the amendment of appropriate sections of this permit shall not require revocation of this permit.
- (d) Noncompliance with orders issued pursuant to 326 IAC 1-5 (Episode Alert Levels) to reduce emissions during an air pollution episode.
- (e) For any cause which establishes in the judgment of IDEM, the fact that continuance of this permit is not consistent with purposes of this article.

C.3 Opacity [326 IAC 5-1]

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

- (a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

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

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

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

The Permittee shall not operate an incinerator or incinerate any waste or refuse except as provided in 326 IAC 4-2 and 326 IAC 9-1-2.

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

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

C.7 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
MC 61-52 IGCN 1003
Indianapolis, Indiana 46204-2251

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

- (e) Procedures for Asbestos Emission Control
The Permittee shall comply with the applicable emission control procedures in 326 IAC 14-10-4 and 40 CFR 61.145(c). Per 326 IAC 14-10-1, emission control requirements are applicable for any removal or disturbance of RACM greater than three (3) linear feet on pipes or three (3) square feet on any other facility components or a total of at least 0.75 cubic feet on all facility components.

- (f) **Demolition and Renovation**
The Permittee shall thoroughly inspect the affected facility or part of the facility where the demolition or renovation will occur for the presence of asbestos pursuant to 40 CFR 61.145(a).
- (g) **Indiana Accredited Asbestos Inspector**
The Permittee shall comply with 326 IAC 14-10-1(a) that requires the owner or operator, prior to a renovation/demolition, to use an Indiana Accredited Asbestos Inspector to thoroughly inspect the affected portion of the facility for the presence of asbestos. The requirement to use an Indiana Accredited Asbestos inspector is not federally enforceable.

Testing Requirements [326 IAC 2-6.1-5(a)(2)]

C.8 Performance Testing [326 IAC 3-6]

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

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

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

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

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

Compliance Requirements [326 IAC 2-1.1-11]

C.9 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 2-6.1-5(a)(2)]

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

Compliance with applicable requirements shall be documented as required by this permit. The Permittee shall be responsible for installing any necessary equipment and initiating any required

monitoring related to that equipment. All monitoring and record keeping requirements not already legally required shall be implemented when operation begins.

C.11 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.12 Instrument Specifications [326 IAC 2-1.1-11]

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

Corrective Actions and Response Steps

C.13 Actions Related to Noncompliance Demonstrated by a Stack Test

- (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 twenty (120) days is not practicable, IDEM, OAQ may extend the retesting deadline.
- (c) IDEM, OAQ reserves the authority to take any actions allowed under law in response to noncompliant stack tests.

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

Record Keeping and Reporting Requirements [326 IAC 2-6.1-5(a)(2)]

C.14 Malfunctions Report [326 IAC 1-6-2]

Pursuant to 326 IAC 1-6-2 (Records; Notice of Malfunction):

- (a) A record of all malfunctions, including startups or shutdowns of any facility or emission control equipment, which result in violations of applicable air pollution control regulations or applicable emission limitations shall be kept and retained for a period of three (3) years and shall be made available to the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) or appointed representative upon request.
- (b) When a malfunction of any facility or emission control equipment occurs which lasts more than one (1) hour, said condition shall be reported to OAQ, using the Malfunction Report Forms (2 pages). Notification shall be made by telephone or facsimile, as soon as

practicable, but in no event later than four (4) daytime business hours after the beginning of said occurrence.

- (c) Failure to report a malfunction of any emission control equipment shall constitute a violation of 326 IAC 1-6, and any other applicable rules. Information of the scope and expected duration of the malfunction shall be provided, including the items specified in 326 IAC 1-6-2(a)(1) through (6).
- (d) Malfunction is defined as any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner. [326 IAC 1-2-39]

C.15 General Record Keeping Requirements [326 IAC 2-6.1-5]

- (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.16 General Reporting Requirements [326 IAC 2-1.1-11] [326 IAC 2-6.1-2] [IC 13-14-1-13]

- (a) Reports required by conditions in Section D of this permit shall be submitted to:

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

- (b) 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.
- (c) Unless otherwise specified in this permit, all reports required in Section D of this permit shall be submitted within thirty (30) days of the end of the reporting period. All reports do require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (d) The first report shall cover the period commencing on the date of issuance of this permit and ending on the last day of the reporting period. Reporting periods are based on calendar years, unless otherwise specified in this permit. For the purpose of this permit "calendar year" means the twelve (12) month period from January 1 to December 31 inclusive.

SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

- (a) Two (2) natural gas fueled, simple cycle, combustion turbine compressors, identified as EU01 and EU02, approved for construction in 2008, with a rated capacity of 20,500 horsepower (hp) each, exhausting to Stack SV01 and SV02.

Under the NSPS for Stationary Combustion Turbines (40 CFR 60, Subpart KKKK), the two (2) compressors (EU01 and EU02) are considered affected facilities.

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

Emission Limitations and Standards [326 IAC 2-6.1-5(a)(1)]

D.1.1 Nitrogen Oxides (NOx) [326 IAC 2-6.1]

- (a) NOx emissions from the combustion turbine compressors EU01 and EU02, shall not exceed 42 parts per million (ppm) each, when the 1-hour average engine inlet temperature is less than 0°F.
- (b) NOx emissions from the combustion turbine compressors EU01 and EU02, shall not exceed 15 parts per million (ppm) each, when the 1-hour average engine inlet temperature is greater than or equal to 0°F.
- (c) The combined operating time for the combustion turbine compressors EU01 and EU02 shall not exceed 960 hours per twelve (12) consecutive month period, with compliance determined at the end of each month, when the 1-hour average engine inlet temperature is less than 0°F

Compliance with these limits combined with the potential NOx emissions from all other emission units at this source will limit the source-wide total potential to emit of NOx to less than 100 tons per 12 consecutive month period and will render 326 IAC 2-7 (Part 70 Permits) not applicable.

Compliance Determination Requirements

D.1.2 Testing Requirements [326 IAC 2-1.1-11]

- (a) In order to demonstrate compliance with Conditions D.1.1(a) and (b), the Permittee shall perform NOx testing for one (1) of the combustion turbine compressors (EU01 or EU02), within 60 days after achieving the maximum production rate, but no 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 2-6.1-5(a)(2)]

D.1.3 Engine Inlet Temperature

- (a) A continuous monitoring system shall be calibrated, maintained, and operated on one (1) of the combustion turbine compressors (EU01 or EU02) for measuring the engine inlet operating temperature. For the purpose of this condition, continuous means no less often than once per minute. The output of this system shall be recorded as a 1-hour average.

- (b) The Permittee shall determine the 1-hour average temperature from the most recent valid stack test that demonstrates compliance with limits in Condition D.1.1, as approved by IDEM.
- (c) On and after the date the approved stack test results are available, the Permittee shall operate each combustion turbine compressor (EU01 and EU02) at or above the 1-hour average temperature as observed during the compliant stack test.

Record Keeping and Reporting Requirements [326 IAC 2-6.1-5(a)(2)]

D.1.4 Record Keeping Requirements

- (a) To document compliance with Condition D.1.3, the Permittee shall maintain continuous temperature records for one (1) of the combustion turbine compressors (EU01 or EU02) and the 1-hour average temperature used to demonstrate compliance during the most recent compliant stack test.
- (b) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.1.5 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.1.1(c) shall be submitted to the addresses 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 an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

SECTION E.1 40 CFR Part 60, Subpart KKKK – Standards of Performance for Stationary Combustion Turbines

Emissions Unit Description:

- (a) Two (2) natural gas fueled, simple cycle, combustion turbine compressors, identified as EU01 and EU02, approved for construction in 2008, with a rated capacity of 156.56 MMBtu/hr or 20,500 horsepower (hp) each, exhausting to Stack SV01 and SV02.

Under the NSPS for Stationary Combustion Turbines (40 CFR 60, Subpart KKKK), the two (2) compressors (EU01 and EU02) are considered affected facilities.

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

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

- (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 facility described in this section except when otherwise specified in 40 CFR Part 60, Subpart KKKK.
- (b) Pursuant to 40 CFR 60.19, the Permittee shall submit all required notifications and reports to:

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

E.1.2 NSPS Subpart KKKK Requirements [40 CFR Part 60, Subpart KKKK]

Pursuant to 40 CFR Part 60, Subpart KKKK, the Permittee shall comply with the provisions of 40 CFR Part 60.4300, as specified as follows:

Subpart KKKK—Standards of Performance for Stationary Combustion Turbines

Source: 71 FR 38497, July 6, 2006, unless otherwise noted.

Introduction

§ 60.4300 What is the purpose of this subpart?

This subpart establishes emission standards and compliance schedules for the control of emissions from stationary combustion turbines that commenced construction, modification or reconstruction after February 18, 2005.

Applicability

§ 60.4305 Does this subpart apply to my stationary combustion turbine?

(a) If you are the owner or operator of a stationary combustion turbine with a heat input at peak load equal to or greater than 10.7 gigajoules (10 MMBtu) per hour, based on the higher heating value of the fuel, which commenced construction, modification, or reconstruction after February 18, 2005, your turbine is subject to this subpart. Only heat input to the combustion turbine should be included when determining whether or not this subpart is applicable to your turbine. Any additional heat input to associated heat

recovery steam generators (HRSG) or duct burners should not be included when determining your peak heat input. However, this subpart does apply to emissions from any associated HRSG and duct burners.

(b) Stationary combustion turbines regulated under this subpart are exempt from the requirements of subpart GG of this part. Heat recovery steam generators and duct burners regulated under this subpart are exempted from the requirements of subparts Da, Db, and Dc of this part.

Emission Limits

§ 60.4315 What pollutants are regulated by this subpart?

The pollutants regulated by this subpart are nitrogen oxide (NO_x) and sulfur dioxide (SO₂).

§ 60.4320 What emission limits must I meet for nitrogen oxides (NOX)?

(a) You must meet the emission limits for NO_x specified in Table 1 to this subpart.

(b) If you have two or more turbines that are connected to a single generator, each turbine must meet the emission limits for NO_x.

§ 60.4330 What emission limits must I meet for sulfur dioxide (SO2)?

(a) If your turbine is located in a continental area, you must comply with either paragraph (a)(1) or (a)(2) of this section. If your turbine is located in Alaska, you do not have to comply with the requirements in paragraph (a) of this section until January 1, 2008.

(1) You must not cause to be discharged into the atmosphere from the subject stationary combustion turbine any gases which contain SO₂ in excess of 110 nanograms per Joule (ng/J) (0.90 pounds per megawatt-hour (lb/MWh)) gross output, or

(2) You must not burn in the subject stationary combustion turbine any fuel which contains total potential sulfur emissions in excess of 26 ng SO₂/J (0.060 lb SO₂/MMBtu) heat input. If your turbine simultaneously fires multiple fuels, each fuel must meet this requirement.

General Compliance Requirements

§ 60.4333 What are my general requirements for complying with this subpart?

(a) You must operate and maintain your stationary combustion turbine, air pollution control equipment, and monitoring equipment in a manner consistent with good air pollution control practices for minimizing emissions at all times including during startup, shutdown, and malfunction.

§ 60.4340 How do I demonstrate continuous compliance for NOX if I do not use water or steam injection?

(a) If you are not using water or steam injection to control NO_x emissions, you must perform annual performance tests in accordance with §60.4400 to demonstrate continuous compliance. If the NO_x emissions result from the performance test is less than or equal to 75 percent of the NO_x emission limit for the turbine, you may reduce the frequency of subsequent performance tests to once every 2 years (no more than 26 calendar months following the previous performance test). If the results of any subsequent performance test exceed 75 percent of the NO_x emission limit for the turbine, you must resume annual performance tests.

§ 60.4360 How do I determine the total sulfur content of the turbine's combustion fuel?

You must monitor the total sulfur content of the fuel being fired in the turbine, except as provided in §60.4365. The sulfur content of the fuel must be determined using total sulfur methods described in §60.4415. Alternatively, if the total sulfur content of the gaseous fuel during the most recent performance test was less than half the applicable limit, ASTM D4084, D4810, D5504, or D6228, or Gas Processors Association Standard 2377 (all of which are incorporated by reference, see §60.17), which measure the major sulfur compounds, may be used.

§ 60.4365 How can I be exempted from monitoring the total sulfur content of the fuel?

You may elect not to monitor the total sulfur content of the fuel combusted in the turbine, if the fuel is demonstrated not to exceed potential sulfur emissions of 26 ng SO₂/J (0.060 lb SO₂/MMBtu) heat input for units located in continental areas and 180 ng SO₂/J (0.42 lb SO₂/MMBtu) heat input for units located in noncontinental areas or a continental area that the Administrator determines does not have access to natural gas and that the removal of sulfur compounds would cause more environmental harm than benefit. You must use one of the following sources of information to make the required demonstration:

(a) The fuel quality characteristics in a current, valid purchase contract, tariff sheet or transportation contract for the fuel, specifying that the maximum total sulfur content for oil use in continental areas is 0.05 weight percent (500 ppmw) or less and 0.4 weight percent (4,000 ppmw) or less for noncontinental areas, the total sulfur content for natural gas use in continental areas is 20 grains of sulfur or less per 100 standard cubic feet and 140 grains of sulfur or less per 100 standard cubic feet for noncontinental areas, has potential sulfur emissions of less than less than 26 ng SO₂/J (0.060 lb SO₂/MMBtu) heat input for continental areas and has potential sulfur emissions of less than less than 180 ng SO₂/J (0.42 lb SO₂/MMBtu) heat input for noncontinental areas; or

(b) Representative fuel sampling data which show that the sulfur content of the fuel does not exceed 26 ng SO₂/J (0.060 lb SO₂/MMBtu) heat input for continental areas or 180 ng SO₂/J (0.42 lb SO₂/MMBtu) heat input for noncontinental areas. At a minimum, the amount of fuel sampling data specified in section 2.3.1.4 or 2.3.2.4 of appendix D to part 75 of this chapter is required.

§ 60.4370 How often must I determine the sulfur content of the fuel?

The frequency of determining the sulfur content of the fuel must be as follows:

(a) *Fuel oil.* For fuel oil, use one of the total sulfur sampling options and the associated sampling frequency described in sections 2.2.3, 2.2.4.1, 2.2.4.2, and 2.2.4.3 of appendix D to part 75 of this chapter (*i.e.* , flow proportional sampling, daily sampling, sampling from the unit's storage tank after each addition of fuel to the tank, or sampling each delivery prior to combining it with fuel oil already in the intended storage tank).

(b) *Gaseous fuel.* If you elect not to demonstrate sulfur content using options in §60.4365, and the fuel is supplied without intermediate bulk storage, the sulfur content value of the gaseous fuel must be determined and recorded once per unit operating day.

(c) *Custom schedules.* Notwithstanding the requirements of paragraph (b) of this section, operators or fuel vendors may develop custom schedules for determination of the total sulfur content of gaseous fuels, based on the design and operation of the affected facility and the characteristics of the fuel supply. Except as provided in paragraphs (c)(1) and (c)(2) of this section, custom schedules shall be substantiated with data and shall be approved by the Administrator before they can be used to comply with the standard in §60.4330.

(1) The two custom sulfur monitoring schedules set forth in paragraphs (c)(1)(i) through (iv) and in paragraph (c)(2) of this section are acceptable, without prior Administrative approval:

(i) The owner or operator shall obtain daily total sulfur content measurements for 30 consecutive unit operating days, using the applicable methods specified in this subpart. Based on the results of the 30 daily samples, the required frequency for subsequent monitoring of the fuel's total sulfur content shall be as specified in paragraph (c)(1)(ii), (iii), or (iv) of this section, as applicable.

(ii) If none of the 30 daily measurements of the fuel's total sulfur content exceeds half the applicable standard, subsequent sulfur content monitoring may be performed at 12-month intervals. If any of the samples taken at 12-month intervals has a total sulfur content greater than half but less than the applicable limit, follow the procedures in paragraph (c)(1)(iii) of this section. If any measurement exceeds the applicable limit, follow the procedures in paragraph (c)(1)(iv) of this section.

(iii) If at least one of the 30 daily measurements of the fuel's total sulfur content is greater than half but less than the applicable limit, but none exceeds the applicable limit, then:

(A) Collect and analyze a sample every 30 days for 3 months. If any sulfur content measurement exceeds the applicable limit, follow the procedures in paragraph (c)(1)(iv) of this section. Otherwise, follow the procedures in paragraph (c)(1)(iii)(B) of this section.

(B) Begin monitoring at 6-month intervals for 12 months. If any sulfur content measurement exceeds the applicable limit, follow the procedures in paragraph (c)(1)(iv) of this section. Otherwise, follow the procedures in paragraph (c)(1)(iii)(C) of this section.

(C) Begin monitoring at 12-month intervals. If any sulfur content measurement exceeds the applicable limit, follow the procedures in paragraph (c)(1)(iv) of this section. Otherwise, continue to monitor at this frequency.

(iv) If a sulfur content measurement exceeds the applicable limit, immediately begin daily monitoring according to paragraph (c)(1)(i) of this section. Daily monitoring shall continue until 30 consecutive daily samples, each having a sulfur content no greater than the applicable limit, are obtained. At that point, the applicable procedures of paragraph (c)(1)(ii) or (iii) of this section shall be followed.

(2) The owner or operator may use the data collected from the 720-hour sulfur sampling demonstration described in section 2.3.6 of appendix D to part 75 of this chapter to determine a custom sulfur sampling schedule, as follows:

(i) If the maximum fuel sulfur content obtained from the 720 hourly samples does not exceed 20 grains/100 scf, no additional monitoring of the sulfur content of the gas is required, for the purposes of this subpart.

(ii) If the maximum fuel sulfur content obtained from any of the 720 hourly samples exceeds 20 grains/100 scf, but none of the sulfur content values (when converted to weight percent sulfur) exceeds half the applicable limit, then the minimum required sampling frequency shall be one sample at 12 month intervals.

(iii) If any sample result exceeds half the applicable limit, but none exceeds the applicable limit, follow the provisions of paragraph (c)(1)(iii) of this section.

(iv) If the sulfur content of any of the 720 hourly samples exceeds the applicable limit, follow the provisions of paragraph (c)(1)(iv) of this section.

Reporting

§ 60.4375 What reports must I submit?

(a) For each affected unit required to continuously monitor parameters or emissions, or to periodically determine the fuel sulfur content under this subpart, you must submit reports of excess emissions and monitor downtime, in accordance with §60.7(c). Excess emissions must be reported for all periods of unit operation, including start-up, shutdown, and malfunction.

(b) For each affected unit that performs annual performance tests in accordance with §60.4340(a), you must submit a written report of the results of each performance test before the close of business on the 60th day following the completion of the performance test.

§ 60.4385 How are excess emissions and monitoring downtime defined for SO₂?

If you choose the option to monitor the sulfur content of the fuel, excess emissions and monitoring downtime are defined as follows:

(a) For samples of gaseous fuel and for oil samples obtained using daily sampling, flow proportional sampling, or sampling from the unit's storage tank, an excess emission occurs each unit operating hour included in the period beginning on the date and hour of any sample for which the sulfur content of the fuel being fired in the combustion turbine exceeds the applicable limit and ending on the date and hour that a subsequent sample is taken that demonstrates compliance with the sulfur limit.

(b) If the option to sample each delivery of fuel oil has been selected, you must immediately switch to one of the other oil sampling options (i.e., daily sampling, flow proportional sampling, or sampling from the unit's storage tank) if the sulfur content of a delivery exceeds 0.05 weight percent. You must continue to use one of the other sampling options until all of the oil from the delivery has been combusted, and you must evaluate excess emissions according to paragraph (a) of this section. When all of the fuel from the delivery has been burned, you may resume using the as-delivered sampling option.

(c) A period of monitor downtime begins when a required sample is not taken by its due date. A period of monitor downtime also begins on the date and hour of a required sample, if invalid results are obtained. The period of monitor downtime ends on the date and hour of the next valid sample.

§ 60.4395 When must I submit my reports?

All reports required under §60.7(c) must be postmarked by the 30th day following the end of each 6-month period.

Performance Tests

§ 60.4400 How do I conduct the initial and subsequent performance tests, regarding NO_x?

(a) You must conduct an initial performance test, as required in §60.8. Subsequent NO_x performance tests shall be conducted on an annual basis (no more than 14 calendar months following the previous performance test).

(1) There are two general methodologies that you may use to conduct the performance tests. For each test run:

(i) Measure the NO_x concentration (in parts per million (ppm)), using EPA Method 7E or EPA Method 20 in appendix A of this part. For units complying with the output based standard, concurrently measure the

stack gas flow rate, using EPA Methods 1 and 2 in appendix A of this part, and measure and record the electrical and thermal output from the unit. Then, use the following equation to calculate the NO_x emission rate:

$$E = \frac{1.194 \times 10^{-7} * (NO_x)_c * Q_{std}}{P} \quad (\text{Eq. 5})$$

Where:

E = NO_x emission rate, in lb/MWh

1.194 × 10⁻⁷ = conversion constant, in lb/dscf-ppm

(NO_x)_c = average NO_x concentration for the run, in ppm

Q_{std} = stack gas volumetric flow rate, in dscf/hr

P = gross electrical and mechanical energy output of the combustion turbine, in MW (for simple-cycle operation), for combined-cycle operation, the sum of all electrical and mechanical output from the combustion and steam turbines, or, for combined heat and power operation, the sum of all electrical and mechanical output from the combustion and steam turbines plus all useful recovered thermal output not used for additional electric or mechanical generation, in MW, calculated according to §60.4350(f)(2); or

(ii) Measure the NO_x and diluent gas concentrations, using either EPA Methods 7E and 3A, or EPA Method 20 in appendix A of this part. Concurrently measure the heat input to the unit, using a fuel flowmeter (or flowmeters), and measure the electrical and thermal output of the unit. Use EPA Method 19 in appendix A of this part to calculate the NO_x emission rate in lb/MMBtu. Then, use Equations 1 and, if necessary, 2 and 3 in §60.4350(f) to calculate the NO_x emission rate in lb/MWh.

(2) Sampling traverse points for NO_x and (if applicable) diluent gas are to be selected following EPA Method 20 or EPA Method 1 (non-particulate procedures), and sampled for equal time intervals. The sampling must be performed with a traversing single-hole probe, or, if feasible, with a stationary multi-hole probe that samples each of the points sequentially. Alternatively, a multi-hole probe designed and documented to sample equal volumes from each hole may be used to sample simultaneously at the required points.

(3) Notwithstanding paragraph (a)(2) of this section, you may test at fewer points than are specified in EPA Method 1 or EPA Method 20 in appendix A of this part if the following conditions are met:

(i) You may perform a stratification test for NO_x and diluent pursuant to

(A) [Reserved], or

(B) The procedures specified in section 6.5.6.1(a) through (e) of appendix A of part 75 of this chapter.

(ii) Once the stratification sampling is completed, you may use the following alternative sample point selection criteria for the performance test:

(A) If each of the individual traverse point NO_x concentrations is within ±10 percent of the mean concentration for all traverse points, or the individual traverse point diluent concentrations differs by no more than ±5ppm or ±0.5 percent CO₂ (or O₂) from the mean for all traverse points, then you may use three points (located either 16.7, 50.0 and 83.3 percent of the way across the stack or duct, or, for circular

stacks or ducts greater than 2.4 meters (7.8 feet) in diameter, at 0.4, 1.2, and 2.0 meters from the wall). The three points must be located along the measurement line that exhibited the highest average NO_x concentration during the stratification test; or

(B) For turbines with a NO_x standard greater than 15 ppm @ 15% O₂, you may sample at a single point, located at least 1 meter from the stack wall or at the stack centroid if each of the individual traverse point NO_x concentrations is within ±5 percent of the mean concentration for all traverse points, or the individual traverse point diluent concentrations differs by no more than ±3ppm or ±0.3 percent CO₂(or O₂) from the mean for all traverse points; or

(C) For turbines with a NO_x standard less than or equal to 15 ppm @ 15% O₂, you may sample at a single point, located at least 1 meter from the stack wall or at the stack centroid if each of the individual traverse point NO_x concentrations is within ±2.5 percent of the mean concentration for all traverse points, or the individual traverse point diluent concentrations differs by no more than ±1ppm or ±0.15 percent CO₂(or O₂) from the mean for all traverse points.

(b) The performance test must be done at any load condition within plus or minus 25 percent of 100 percent of peak load. You may perform testing at the highest achievable load point, if at least 75 percent of peak load cannot be achieved in practice. You must conduct three separate test runs for each performance test. The minimum time per run is 20 minutes.

§ 60.4415 How do I conduct the initial and subsequent performance tests for sulfur?

(a) You must conduct an initial performance test, as required in §60.8. Subsequent SO₂ performance tests shall be conducted on an annual basis (no more than 14 calendar months following the previous performance test). There are three methodologies that you may use to conduct the performance tests.

(1) If you choose to periodically determine the sulfur content of the fuel combusted in the turbine, a representative fuel sample would be collected following ASTM D5287 (incorporated by reference, see §60.17) for natural gas or ASTM D4177 (incorporated by reference, see §60.17) for oil. Alternatively, for oil, you may follow the procedures for manual pipeline sampling in section 14 of ASTM D4057 (incorporated by reference, see §60.17). The fuel analyses of this section may be performed either by you, a service contractor retained by you, the fuel vendor, or any other qualified agency. Analyze the samples for the total sulfur content of the fuel using:

(i) For liquid fuels, ASTM D129, or alternatively D1266, D1552, D2622, D4294, or D5453 (all of which are incorporated by reference, see §60.17); or

(ii) For gaseous fuels, ASTM D1072, or alternatively D3246, D4084, D4468, D4810, D6228, D6667, or Gas Processors Association Standard 2377 (all of which are incorporated by reference, see §60.17).

(2) Measure the SO₂ concentration (in parts per million (ppm)), using EPA Methods 6, 6C, 8, or 20 in appendix A of this part. In addition, the American Society of Mechanical Engineers (ASME) standard, ASME PTC 19-10-1981-Part 10, "Flue and Exhaust Gas Analyses," manual methods for sulfur dioxide (incorporated by reference, see §60.17) can be used instead of EPA Methods 6 or 20. For units complying with the output based standard, concurrently measure the stack gas flow rate, using EPA Methods 1 and 2 in appendix A of this part, and measure and record the electrical and thermal output from the unit. Then use the following equation to calculate the SO₂ emission rate:

$$E = \frac{1.664 \times 10^{-3} * (SO_2)_c * Q_{std}}{P} \quad (\text{Eq. 6})$$

Where:

E = SO₂ emission rate, in lb/MWh

1.664×10^{-7} = conversion constant, in lb/dscf-ppm

$(SO_2)_c$ = average SO₂ concentration for the run, in ppm

Q_{std} = stack gas volumetric flow rate, in dscf/hr

P = gross electrical and mechanical energy output of the combustion turbine, in MW (for simple-cycle operation), for combined-cycle operation, the sum of all electrical and mechanical output from the combustion and steam turbines, or, for combined heat and power operation, the sum of all electrical and mechanical output from the combustion and steam turbines plus all useful recovered thermal output not used for additional electric or mechanical generation, in MW, calculated according to §60.4350(f)(2); or

(3) Measure the SO₂ and diluent gas concentrations, using either EPA Methods 6, 6C, or 8 and 3A, or 20 in appendix A of this part. In addition, you may use the manual methods for sulfur dioxide ASME PTC 19–10–1981–Part 10 (incorporated by reference, see §60.17). Concurrently measure the heat input to the unit, using a fuel flowmeter (or flowmeters), and measure the electrical and thermal output of the unit. Use EPA Method 19 in appendix A of this part to calculate the SO₂ emission rate in lb/MMBtu. Then, use Equations 1 and, if necessary, 2 and 3 in §60.4350(f) to calculate the SO₂ emission rate in lb/MWh.

(b) [Reserved]

Definitions

§ 60.4420 What definitions apply to this subpart?

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

Combined cycle combustion turbine means any stationary combustion turbine which recovers heat from the combustion turbine exhaust gases to generate steam that is only used to create additional power output in a steam turbine.

Combined heat and power combustion turbine means any stationary combustion turbine which recovers heat from the exhaust gases to heat water or another medium, generate steam for useful purposes other than additional electric generation, or directly uses the heat in the exhaust gases for a useful purpose.

Combustion turbine model means a group of combustion turbines having the same nominal air flow, combustor inlet pressure, combustor inlet temperature, firing temperature, turbine inlet temperature and turbine inlet pressure.

Combustion turbine test cell/stand means any apparatus used for testing uninstalled stationary or uninstalled mobile (motive) combustion turbines.

Diffusion flame stationary combustion turbine means any stationary combustion turbine where fuel and air are injected at the combustor and are mixed only by diffusion prior to ignition.

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

Efficiency means the combustion turbine manufacturer's rated heat rate at peak load in terms of heat input per unit of power output—based on the higher heating value of the fuel.

Emergency combustion turbine means any stationary combustion turbine which operates in an emergency situation. Examples include stationary combustion turbines used to produce power for critical networks or equipment, including power supplied to portions of a facility, when electric power from the local utility is interrupted, or stationary combustion turbines used to pump water in the case of fire or flood, etc. Emergency stationary combustion turbines do not include stationary combustion turbines used as peaking units at electric utilities or stationary combustion turbines at industrial facilities that typically operate at low capacity factors. Emergency combustion turbines may be operated for the purpose of maintenance checks and readiness testing, provided that the tests are required by the manufacturer, the vendor, or the insurance company associated with the turbine. Required testing of such units should be minimized, but there is no time limit on the use of emergency combustion turbines.

Excess emissions means a specified averaging period over which either (1) the NO_x emissions are higher than the applicable emission limit in §60.4320; (2) the total sulfur content of the fuel being combusted in the affected facility exceeds the limit specified in §60.4330; or (3) the recorded value of a particular monitored parameter is outside the acceptable range specified in the parameter monitoring plan for the affected unit.

Gross useful output means the gross useful work performed by the stationary combustion turbine system. For units using the mechanical energy directly or generating only electricity, the gross useful work performed is the gross electrical or mechanical output from the turbine/generator set. For combined heat and power units, the gross useful work performed is the gross electrical or mechanical output plus the useful thermal output (i.e., thermal energy delivered to a process).

Heat recovery steam generating unit means a unit where the hot exhaust gases from the combustion turbine are routed in order to extract heat from the gases and generate steam, for use in a steam turbine or other device that utilizes steam. Heat recovery steam generating units can be used with or without duct burners.

Integrated gasification combined cycle electric utility steam generating unit means a coal-fired electric utility steam generating unit that burns a synthetic gas derived from coal in a combined-cycle gas turbine. No solid coal is directly burned in the unit during operation.

ISO conditions means 288 Kelvin, 60 percent relative humidity and 101.3 kilopascals pressure.

Lean premix stationary combustion turbine means any stationary combustion turbine where the air and fuel are thoroughly mixed to form a lean mixture before delivery to the combustor. Mixing may occur before or in the combustion chamber. A lean premixed turbine may operate in diffusion flame mode during operating conditions such as startup and shutdown, extreme ambient temperature, or low or transient load.

Natural gas means a naturally occurring fluid mixture of hydrocarbons (e.g., methane, ethane, or propane) produced in geological formations beneath the Earth's surface that maintains a gaseous state at standard atmospheric temperature and pressure under ordinary conditions. Additionally, natural gas must either be composed of at least 70 percent methane by volume or have a gross calorific value between 950 and 1,100 British thermal units (Btu) per standard cubic foot. Natural gas does not include the following gaseous fuels: landfill gas, digester gas, refinery gas, sour gas, blast furnace gas, coal-derived gas, producer gas, coke oven gas, or any gaseous fuel produced in a process which might result in highly variable sulfur content or heating value.

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

Peak load means 100 percent of the manufacturer's design capacity of the combustion turbine at ISO conditions.

Regenerative cycle combustion turbine means any stationary combustion turbine which recovers heat from the combustion turbine exhaust gases to preheat the inlet combustion air to the combustion turbine.

Simple cycle combustion turbine means any stationary combustion turbine which does not recover heat from the combustion turbine exhaust gases to preheat the inlet combustion air to the combustion turbine, or which does not recover heat from the combustion turbine exhaust gases for purposes other than enhancing the performance of the combustion turbine itself.

Stationary combustion turbine means all equipment, including but not limited to the turbine, the fuel, air, lubrication and exhaust gas systems, control systems (except emissions control equipment), heat recovery system, and any ancillary components and sub-components comprising any simple cycle stationary combustion turbine, any regenerative/recuperative cycle stationary combustion turbine, any combined cycle combustion turbine, and any combined heat and power combustion turbine based system. Stationary means that the combustion turbine is not self propelled or intended to be propelled while performing its function. It may, however, be mounted on a vehicle for portability.

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

Unit operating hour means a clock hour during which any fuel is combusted in the affected unit. If the unit combusts fuel for the entire clock hour, it is considered to be a full unit operating hour. If the unit combusts fuel for only part of the clock hour, it is considered to be a partial unit operating hour.

Useful thermal output means the thermal energy made available for use in any industrial or commercial process, or used in any heating or cooling application, i.e., total thermal energy made available for processes and applications other than electrical or mechanical generation. Thermal output for this subpart means the energy in recovered thermal output measured against the energy in the thermal output at 15 degrees Celsius and 101.325 kilopascals of pressure.

Table 1—to Subpart KKKK of Part 60—Nitrogen Oxide Emission Limits for New Stationary Combustion Turbines

Combustion turbine type	Combustion turbine heat input at peak load (HHV)	NO_x emission standard
New turbine firing natural gas, electric generating	≤ 50 MMBtu/h	42 ppm at 15 percent O ₂ or 290 ng/J of useful output (2.3 lb/MWh).
New turbine firing natural gas, mechanical drive	≤ 50 MMBtu/h	100 ppm at 15 percent O ₂ or 690 ng/J of useful output (5.5 lb/MWh).
New turbine firing natural gas	> 50 MMBtu/h and ≤ 850 MMBtu/h	25 ppm at 15 percent O ₂ or 150 ng/J of useful output (1.2 lb/MWh).
New, modified, or reconstructed turbine firing natural gas	> 850 MMBtu/h	15 ppm at 15 percent O ₂ or 54 ng/J of useful output (0.43 lb/MWh)

New turbine firing fuels other than natural gas, electric generating	≤ 50 MMBtu/h	96 ppm at 15 percent O ₂ or 700 ng/J of useful output (5.5 lb/MWh).
New turbine firing fuels other than natural gas, mechanical drive	≤ 50 MMBtu/h	150 ppm at 15 percent O ₂ or 1,100 ng/J of useful output (8.7 lb/MWh).
New turbine firing fuels other than natural gas	> 50 MMBtu/h and ≤ 850 MMBtu/h	74 ppm at 15 percent O ₂ or 460 ng/J of useful output (3.6 lb/MWh).
New, modified, or reconstructed turbine firing fuels other than natural gas	> 850 MMBtu/h	42 ppm at 15 percent O ₂ or 160 ng/J of useful output (1.3 lb/MWh).
Modified or reconstructed turbine	≤ 50 MMBtu/h	150 ppm at 15 percent O ₂ or 1,100 ng/J of useful output (8.7 lb/MWh).
Modified or reconstructed turbine firing natural gas	> 50 MMBtu/h and ≤ 850 MMBtu/h	42 ppm at 15 percent O ₂ or 250 ng/J of useful output (2.0 lb/MWh).
Modified or reconstructed turbine firing fuels other than natural gas	> 50 MMBtu/h and ≤ 850 MMBtu/h	96 ppm at 15 percent O ₂ or 590 ng/J of useful output (4.7 lb/MWh).
Turbines located north of the Arctic Circle (latitude 66.5 degrees north), turbines operating at less than 75 percent of peak load, modified and reconstructed offshore turbines, and turbine operating at temperatures less than 0 °F	≤ 30 MW output	150 ppm at 15 percent O ₂ or 1,100 ng/J of useful output (8.7 lb/MWh).
Turbines located north of the Arctic Circle (latitude 66.5 degrees north), turbines operating at less than 75 percent of peak load, modified and reconstructed offshore turbines, and turbine operating at temperatures less than 0 °F	> 30 MW output	96 ppm at 15 percent O ₂ or 590 ng/J of useful output (4.7 lb/MWh).
Heat recovery units operating independent of the combustion turbine	All sizes	54 ppm at 15 percent O ₂ or 110 ng/J of useful output (0.86 lb/MWh).

E.1.3 One Time Deadlines Relating to the Standard of Performance for Stationary Combustion Turbines [40 CFR 60, Subpart KKKK]

Requirement	Rule Cite	Affected Facility	Deadline
Notification of the Date of Construction	40 CFR 60.7(a)(1)	Combustion Turbine (EU01 and EU02)	Within 30 days after construction was commenced.
Notification of the Date of Initial Startup	40 CFR 60.7(a)(3)	Combustion Turbine (EU01 and EU02)	Within 15 days after initial startup.
Initial Performance Test	40 CFR 60.8(a) 40 CFR 60.4400	Combustion Turbine (EU01 and EU02)	Within 60 days after achieving the maximum production rate, but not later than 180 days after initial startup.

**Indiana Department of Environmental Management
 Office of Air Quality
 Compliance Data Section**

MSOP Quarterly Report

Source Name: Bainbridge Compressor Station
 Source Address: Approximately 0.5 miles south of US 36 on North County Road 25 West, Bainbridge, IN 46105
 Mailing Address: 747 East 22nd Street, Lombard, IL 60148
 MSOP No.: M133-25139-00044
 Source: Combustion Turbine Compressors (EU01 and EU02)
 Pollutant: Hours of Operation
 Limit: The combined operating time for the combustion turbine compressors EU01 and EU02 shall not exceed 960 hours per twelve (12) consecutive month period, with compliance determined at the end of each month, when the 1-hour average engine inlet temperature is less than 0°F

Quarter: _____ **Year:** _____

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

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

Submitted by: _____

Title / Position: _____

Signature: _____

Date: _____

Phone: _____

Attach a signed certification to complete this report.

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

**MINOR SOURCE OPERATING PERMIT (MSOP)
CERTIFICATION**

Source Name: Bainbridge Compressor Station
Source Address: Approximately 0.5 miles south of US 36 on North County Road 25 West, Bainbridge, IN 46105
Mailing Address: 747 East 22nd Street, Lombard, IL 60148
MSOP No.: M133-25139-00044

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 Notification
- 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:

MALFUNCTION REPORT

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT OFFICE OF AIR QUALITY FAX NUMBER - 317 233-6865

**This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6
and to qualify for the exemption under 326 IAC 1-6-4.**

THIS FACILITY MEETS THE APPLICABILITY REQUIREMENTS BECAUSE IT HAS POTENTIAL TO EMIT 25 TONS/YEAR PARTICULATE MATTER ?_____, 25 TONS/YEAR SULFUR DIOXIDE ?_____, 25 TONS/YEAR NITROGEN OXIDES?_____, 25 TONS/YEAR VOC ?_____, 25 TONS/YEAR HYDROGEN SULFIDE ?_____, 25 TONS/YEAR TOTAL REDUCED SULFUR ?_____, 25 TONS/YEAR REDUCED SULFUR COMPOUNDS ?_____, 25 TONS/YEAR FLUORIDES ?_____, 100 TONS/YEAR CARBON MONOXIDE ?_____, 10 TONS/YEAR ANY SINGLE HAZARDOUS AIR POLLUTANT ?_____, 25 TONS/YEAR ANY COMBINATION HAZARDOUS AIR POLLUTANT ?_____, 1 TON/YEAR LEAD OR LEAD COMPOUNDS MEASURED AS ELEMENTAL LEAD ?_____, OR IS A SOURCE LISTED UNDER 326 IAC 2-5.1-3(2) ?_____. EMISSIONS FROM MALFUNCTIONING CONTROL EQUIPMENT OR PROCESS EQUIPMENT CAUSED EMISSIONS IN EXCESS OF APPLICABLE LIMITATION _____.

THIS MALFUNCTION RESULTED IN A VIOLATION OF: 326 IAC _____ OR, PERMIT CONDITION # _____ AND/OR PERMIT LIMIT OF _____

THIS INCIDENT MEETS THE DEFINITION OF "MALFUNCTION" AS LISTED ON REVERSE SIDE ? Y N

THIS MALFUNCTION IS OR WILL BE LONGER THAN THE ONE (1) HOUR REPORTING REQUIREMENT ? Y N

COMPANY: _____ PHONE NO. () _____
LOCATION: (CITY AND COUNTY) _____
PERMIT NO. _____ AFS PLANT ID: _____ AFS POINT ID: _____ INSP: _____
CONTROL/PROCESS DEVICE WHICH MALFUNCTIONED AND REASON: _____

DATE/TIME MALFUNCTION STARTED: ____/____/20____ _____ AM / PM

ESTIMATED HOURS OF OPERATION WITH MALFUNCTION CONDITION: _____

DATE/TIME CONTROL EQUIPMENT BACK-IN SERVICE ____/____/20____ _____ AM/PM

TYPE OF POLLUTANTS EMITTED: TSP, PM-10, SO2, VOC, OTHER: _____

ESTIMATED AMOUNT OF POLLUTANT EMITTED DURING MALFUNCTION: _____

MEASURES TAKEN TO MINIMIZE EMISSIONS: _____

REASONS WHY FACILITY CANNOT BE SHUTDOWN DURING REPAIRS:

CONTINUED OPERATION REQUIRED TO PROVIDE ESSENTIAL* SERVICES: _____

CONTINUED OPERATION NECESSARY TO PREVENT INJURY TO PERSONS: _____

CONTINUED OPERATION NECESSARY TO PREVENT SEVERE DAMAGE TO EQUIPMENT: _____

INTERIM CONTROL MEASURES: (IF APPLICABLE) _____

MALFUNCTION REPORTED BY: _____ TITLE: _____
(SIGNATURE IF FAXED)

MALFUNCTION RECORDED BY: _____ DATE: _____ TIME: _____

*SEE PAGE 2

Please note - This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6 and to qualify for the exemption under 326 IAC 1-6-4.

326 IAC 1-6-1 Applicability of rule

Sec. 1. This rule applies to the owner or operator of any facility required to obtain a permit under 326 IAC 2-5.1 or 326 IAC 2-6.1.

326 IAC 1-2-39 "Malfunction" definition

Sec. 39. Any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner.

***Essential services** are interpreted to mean those operations, such as, the providing of electricity by power plants. Continued operation solely for the economic benefit of the owner or operator shall not be sufficient reason why a facility cannot be shutdown during a control equipment shutdown.

If this item is checked on the front, please explain rationale:

Mail to: Permit Administration & Development Section
Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

Bainbridge Compressor Station
Approximately 0.5 miles south of US 36 on North County Road 25 West
Bainbridge, Indiana 46105

Affidavit of Construction

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

1. I live in _____ County, Indiana and being of sound mind and over twenty-one (21) years of age, I am competent to give this affidavit.
2. I hold the position of _____ for _____.
(Title) (Company Name)
3. By virtue of my position with _____, I have personal
(Company Name)
knowledge of the representations contained in this affidavit and am authorized to make these representations on behalf of _____.
(Company Name)
4. I hereby certify that Bainbridge Compressor Station, approximately 0.5 miles south of US 36 on North County Road 25 West, Bainbridge, Indiana 46105, completed construction of the natural gas transmission and compressor station on _____ in conformity with the requirements and intent of the construction permit application received by the Office of Air Quality on August 15, 2007 and as permitted pursuant to New Source Construction Permit and Minor Source Operating Permit No. M133-25139-00044, issued on _____.
5. **Permittee, please cross out the following statement if it does not apply:** Additional (operations/facilities) were constructed/substituted as described in the attachment to this document and were not made in accordance with the construction permit.

Further Affiant said not.

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

Signature _____

Date _____

STATE OF INDIANA)
)SS

COUNTY OF _____)

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

Signature _____

Name _____ (typed or printed)

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

Addendum to the Technical Support Document (TSD) for a
New Source Construction and Minor Source Operating Permit (MSOP)

Source Background and Description

Source Name:	Bainbridge Compressor Station
Source Location:	Approximately 0.5 miles south of US 36 on North County Road 25 West, Bainbridge, Indiana 46105
County:	Putnam
SIC Code:	4922
Operation Permit No.:	M133-25139-00044
Permit Reviewer:	Brian M Williams

On November 20, 2007, the Office of Air Quality (OAQ) had a notice published in the Banner Graphic newspaper in Putnam County, Indiana, stating that Bainbridge Compressor Station had applied for a New Source Construction and Minor Source Operating Permit (MSOP) to construct and operate a new natural gas transmission and compression station, located approximately 0.5 miles south of US 36 on North County Road 25 West, Bainbridge, Indiana 46105. The notice also stated that the OAQ proposed to issue a New Source Construction and Minor Source Operating Permit (MSOP) for this operation and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

Comments and Responses

Bainbridge Compressor Station, Susan and Ron Grimes, and Dennis and Georgia Gray submitted comments on the draft New Source Construction and Minor Source Operating Permit (MSOP).

The Technical Support Document (TSD) is used by IDEM, OAQ for historical purposes. IDEM, OAQ does not make any changes to the original TSD, but the Permit will have the updated changes. The comments and revised permit language are provided below with deleted language as ~~strikeouts~~ and new language **bolded**.

Bainbridge Compressor Station Comments

Comment 1:

On Page 3 of 35, the line on top of D.1.3 should read Compliance Monitoring Requirements [326 IAC 2-6.1-5(a)(2)] to match page 16 of 35.

Response to Comment 1:

IDEM, OAQ agrees with this change to the permit. The permit has been revised as follows:

D.1. EMISSIONS UNIT OPERATION CONDITIONS.....16

...

~~Compliance Determination Requirements~~ **Compliance Monitoring Requirements [326 IAC 2-6.1-5(a)(2)**

D.1.3 Engine Inlet Temperature

Comment 2:

On Page 16 of 35, Section D.1.1(c) stated, "The combined operating time for the combustion turbine compressors EU01 and EU02 shall not exceed 480 hours per twelve (12) consecutive month period, with compliance determined at the end of each month, when the 1-hour average engine inlet temperature is less than 0°F." This is incorrect, the 480 hours per year limitation is for each of the turbines and is reflected correctly in the emission calculations. Please revise the above sentence. Additionally, please revise the MSOP Quarterly Report found on Page 30 this section should be revised to change the combined operating time to operating time for each turbine.

Response to Comment 2:

IDEM, OAQ agrees that each turbine is allowed to operate 480 hours per twelve (12) consecutive month period, with compliance determined at the end of each month, when the 1-hour average engine inlet temperature is less than 0°F. The permit has been revised as follows:

D.1.1 Nitrogen Oxides (NOx) [326 IAC 2-6.1]

...

- (c) The combined operating time for the combustion turbine compressors EU01 and EU02 shall not exceed ~~480~~ **960** hours per twelve (12) consecutive month period, with compliance determined at the end of each month, when the 1-hour average engine inlet temperature is less than 0°F

MSOP Quarterly Report

Source Name: Bainbridge Compressor Station
Source Address: North County Road 25 West, Bainbridge, IN 46105
Mailing Address: 747 East 22nd Street, Lombard, IL 60148
MSOP No.: M133-25139-00044
Source: Combustion Turbine Compressors (EU01 and EU02)
Pollutant: Hours of Operation
Limit: The combined operating time for the combustion turbine compressors EU01 and EU02 shall not exceed ~~480~~ **960** hours per twelve (12) consecutive month period, with compliance determined at the end of each month, when the 1-hour average engine inlet temperature is less than 0°F

Comment 3:

On Page 5 of 7 of the emission calculations, please revise Footnotes 4 and 6 found in the methodology section. The hours shown in the potential emissions calculation should be 480 hrs/yr and 8,280 hrs/yr, respectively. However, the emission calculations themselves were correct. Please update the footnotes.

Response to Comment 3:

IDEM, OAQ agrees with these changes to the footnotes (see TSD Addendum Appendix A).

Susan and Ron Grimes Comments

Comment 1:

We would like to find out more information as to how the Bainbridge Compressor Station will affect the air, soil and wildlife in the area.

Response to Comment 1:

The federal Clean Air Act requires the United States Environmental Protection Agency (U.S. EPA) to set National Ambient Air Quality Standards (NAAQS) for six criteria pollutants. These criteria pollutants are carbon monoxide (CO), lead, sulfur dioxide (SO₂), particulate matter to a diameter of 2.5 microns (PM_{2.5}), nitrogen oxides (NO_x) and ground level ozone. More information about each of these pollutants is available at <http://www.epa.gov/air/airpollutants.html> on U.S. EPA's website. The U.S. EPA sets these standards at levels that protect human health, which is why the NAAQS are often referred to as the federal health standards for outdoor air. The NAAQS limit for all criteria pollutants is set low enough to protect the health of even the most sensitive persons, such as children, the elderly and people with preexisting health conditions, such as asthma, bronchitis and cardiovascular disease. Each NAAQS also has a secondary standard. Secondary standards set limits to protect public welfare, including protection against visibility impairment, damage to animals, crops, vegetation, and buildings. The complete table of the NAAQS for all six criteria pollutants can be found at the <http://www.epa.gov/air/criteria.html> website. EPA's website <http://www.epa.gov/air/urbanair/6poll.html> provides more detailed information about the health effects of these six common air pollutants and why they are regulated.

The federal Clean Air Act requires the U.S. EPA to determine whether the ambient air in any area of the United States fails to meet any of the National Ambient Air Quality Standards (NAAQS). Any area that fails to meet one or more of the NAAQS will be designated as in "nonattainment" for that pollutant. Large air pollution sources in a nonattainment area are subject to additional regulations and U.S. EPA may require that additional steps be taken that will result in the area meeting the NAAQS. Putnam County is in attainment for all the National Ambient Air Quality Standards. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2. Finally, the U.S. EPA works with Indiana, Illinois and Kentucky in monitoring air pollution levels and in determining when air pollution modeling is needed.

The appropriate level of permitting required by any emission source is based primarily on its potential to emit. The potential to emit ([See 326 IAC 2-1.1-1\(16\)](#)) is the total potential emissions of any regulated pollutant which could result from operating under a "worst case operating scenario," running twenty four hours a day (with no pollution control equipment), 365 days a year at full capacity. Bainbridge Compressor Station will have a potential to emit, 91.59 tons of nitrogen oxides (NO_x), 98.39 tons of carbon monoxide (CO), 11.50 tons of volatile organic compounds (VOC), 40.51 tons of particulate matter (PM), 39.74 tons of particulate matter with an aerodynamic diameter of less than ten microns (PM₁₀), 4.57 tons sulfur dioxide (SO₂), and 3.89 tons of formaldehyde. As a result, based on the potential to emit of the aforementioned pollutants, the source qualifies for a Minor Source Operating Permit (MSOP).

IDEM conducts sampling of the ambient air at monitoring stations around Indiana. This air monitoring measures whether the NAAQS are being met. Information about Indiana's air monitoring system and monitoring results is available at <http://www.in.gov/idem>. Information about current and expected air pollution levels is on IDEM's SmogWatch site at <http://www.in.gov/idem> on the internet.

Additionally, the Federal Energy Regulatory Commission (FERC) prepared a draft environmental impact statement for Rockies Express Pipeline, LLC's (Rockies Express) Rockies Express East Project (Docket No. CP07-208-000), which was issued on November 23, 2007. The project includes the construction of 639.1 miles of 42-inch-diameter pipeline from Mexico, Missouri to Clarington; Ohio and 7 new compressor stations in Audrain County, Missouri, Christian County, Illinois, Putnam County, Indiana, Butler County, Ohio, Muskingum County, Ohio, Carbon County, Wyoming, and Phelps County, Nebraska, and 20 meter stations.

The Draft Environmental Impact Statement on the Rockies Express East Project by the Federal Energy Regulatory Commission address the impacts on the air, water, soil, fisheries, vegetation,

wildlife, and threatened and endangered species from the Bainbridge Compressor Station. The Draft Environmental Impact Statement is available at the following address:
<http://www.ferc.gov/industries/gas/enviro/eis/2007/11-23-07.asp>

Comment 2:

We recently purchased lake front property at Van Bibber Lake and we would also like to know how the Bainbridge Compressor Station will affect the water in the lake?

Response 2:

The Office of Air Quality's permit review by law cannot address issues for which it does not have direct regulatory authority. Concerns relating to water quality need to be directed to the Office of Water Quality. For additional information regarding water related permits contact IDEM, OWQ employee Beth Tallon, e-mail: btallon@idem.IN.gov, telephone: (317) 232-8706 or toll free at (800) 451-6027, ext. 2-8706.

Additionally, IDEM's Office of Water Quality, Ground Water Section, protects and assesses Indiana's source water. The Ground Water Section provides guidance for public water systems in establishing Wellhead Protection Plans, Source Water Assessment Plans, as well as providing guidance to private well owners. More information is available at IDEM's website at <http://idem.IN.gov> on the internet or by contacting IDEM at (800) 451-6027 and asking for the Ground Water Section.

Dennis and Georgia Gray Comments

Comment 1:

We live on Glenn Flint Lake, which is within three miles of the compressor station. We moved here for the quiet and the fresh air.

Response 1:

IDEM, OAQ knows that these matters are of great personal concern to the commenter's and other local residents. IDEM, OAQ does not have authority over noise, odor, or traffic on roads or railroads. These matters are under the separate authority of local government units, such as a zoning board, county council or county commission. IDEM, OAQ is required to issue air pollution control permits to sources that have indicated that they can comply with all applicable air pollution control requirements, whether or not the local government unit has made zoning or construction approvals.

Comment 2:

There is not a clear address on the permit (should read something like 5000 North Country Road 25 West), there should be a distinct address. We went to the location and the roads surrounding are paved - not the unpaved roads cited in the permit.

Response 2:

At this time, a distinct address is not available. However, to further clarify the location, the source address has been updated throughout the permit to indicate the nearest crossroad as follows:

Source Address: **Approximately 0.5 miles south of US 36 on North County Road 25 West, Bainbridge, Indiana 46105**

Once the source receives a distinct address, they will notify IDEM, OAQ and request that the

permit be amended to reflect this change.

The unpaved roadways found in Section A.2(e) refer to an unpaved access road that will be constructed to allow employees to access the compressor station from North Country Road 25 West.

Comment 3:

Benzene and Toluene were not mentioned in the classified ad, which ran November 21 in the Banner Graphic, a small newspaper with between 150 and 200 circulations in Bainbridge. This ad ran the day before Thanksgiving and the 30-day response period is during the busiest time of the year for most people. It seems that the timing could have been better.

Response 3:

The public notice letter only included the potential to emit for formaldehyde, which represents the highest single hazardous air pollutant (HAP) emitted by the source. The Technical Support Document stated that the source would have the potential to emit 3.89 tons of formaldehyde and a total combination of 4.38 tons of HAPs per year. Additionally, Appendix A of the Technical Support Document (TSD) contained detailed emission calculations, which included the source-wide potential to emit Benzene and Toluene. The source will have a potential to emit 0.0164 tons of Benzene per year and 0.174 tons of Toluene per year.

IDEM, OAQ does not control the date that the newspaper publishes the public notice. Additionally, IDEM, OAQ feels the 30-day public comment period allowed ample time for the public to provide comments.

Comment 4:

This compressor station is part of the Rockies Express pipeline project, which requires a Federal permit. The pipeline project is doing an Environmental Impact Statement, which only applies to the waterways. Because this same company is the owner of the Bainbridge Compressor Station, I feel their name should be on it. In addition, there seems to be a blurring of the requirements for a State permit and a Federal permit. I feel IDEM should insist on an Environmental Impact Statement for the air pollution component.

Response 4:

Pursuant to 326 IAC 16 (Environmental Assessment, Activities of State Agencies) environmental assessments and environmental impact studies for recommendations or reports on proposals for legislation and other major state actions significantly affecting the quality of the human environment have to be performed. However, 326 IAC 16 and the Indiana Code 13-12-4-8 specifically state that an environmental impact statement is not required under state law for the issuance of a license or permit by any state agency. Therefore, no environmental impact statement under 326 IAC 16 has been performed for this permit. Similar provisions exempt PSD permit actions from the National Environmental Policy Act [15 USC 793(c)(1)].

On December 6, 2007, the link to the draft environmental impact statement was emailed to you. Additionally, the email contained information regarding the public comment period for the draft environmental impact statement and notified you that a public comment meeting would be held on January 7, 2008 in Rockville, Indiana.

Comment 5:

There are Blue Heron rookeries within five miles of this compressor station, one mile north of Bainbridge and one at Heritage Lake. These eggs are considered endangered. We also have

cornfields, forests, boating, skiing, fishing plus other forms of wildlife that would be put at risk.

Response 5:

According to the Indiana Department of Natural Resources (IDNR) website, as of April 2007, the Great Blue Heron is not a State or Federal endangered species. More information can be found at the following website: <http://www.in.gov/dnr/>.

Comment 6:

You are using figures supplied by Rockies Express as to the amount of pollutants that will be discharged by the four stacks, what if those numbers are underestimated? How long would it take them to fix the problems and at what cost to the citizens and to the environment? Scrubbers should be installed in each stack, better to err on the side of caution, wouldn't you agree?

Response 6:

Traditionally, all calculations for permitting purposes are made using emission factors from AP-42, (the) Compilation of Air Pollutant Emission Factors, (AP-42), which was produced by the U.S. EPA Office of Air Quality Planning and Standards. However, the department recognizes that source specific emission factors, when properly derived, are preferable to the generic factors developed by the U.S. EPA. As a result, Nonrule Policy Document, Air 014, effective May 5, 2005, outlines the requirements for approval of an alternative emission factor. This document is available at IDEM's website at <http://idem.IN.gov>.

As a result, in order to verify the alternative emission factors and to ensure compliance with 326 IAC 2-6.1 (MSOP Permits), the Permittee shall perform NOx testing for one (1) of the combustion turbine compressors (EU01 or EU02), within 60 days after achieving the maximum production rate, but no 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.

Pursuant to Condition C.13 (Actions related to Noncompliance Demonstrated by a Stack Test) of this permit the source shall do the following in the event of noncompliance with the required testing requirements:

- (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 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.

There are no applicable requirements that require this source to install scrubbers; therefore, by law IDEM, OAQ cannot require the source to install scrubbers on each stack at this time.

Upon further review IDEM, OAQ has decided to make additional changes to the permit as listed below. The permit is revised as follows with deleted language as ~~strikeouts~~ and new language **bolded**:

Change 1:

The fugitive emissions of criteria pollutants and hazardous air pollutants are counted toward the determination of 326 IAC 2-6.1 (Minor Source Operating Permits) applicability. Therefore, the potential to emit PM, PM10, and VOC have been updated to include fugitive emissions from unpaved roadways and leaks (see TSD Addendum Appendix A). As a result, PM emissions increased from 39.38 tons to 39.97 tons per year, PM10 emissions increased from 39.43 tons to 39.6 tons per year, and VOC emissions increased from 10.05 tons to 11.5 tons per year. The source is still subject to the provisions of 326 IAC 2-6.1 (MSOP).

Change 2:

Sections A.2, D.1, and E.1 are revised as follows:

...

A.2 Emission Units and Pollution Control Equipment Summary

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

- (a) Two (2) natural gas fueled, simple cycle, combustion turbine compressors, identified as EU01 and EU02, approved for construction in 2007~~8~~, with a rated capacity of 20,500 horsepower (hp) each, exhausting to Stack SV01 and SV02.

Under the NSPS for Stationary Combustion Turbines (40 CFR 60, Subpart KKKK), the two (2) compressors (EU01 and EU02) are considered affected facilities.

- (b) One (1) natural gas-fired, 4-stroke lean-burn, emergency generator, identified as EG01, approved for construction in 2007~~8~~, with a rated capacity of 566 horsepower (hp), exhausting to Stack SV03.

...

SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

- (a) Two (2) natural gas fueled, simple cycle, combustion turbine compressors, identified as EU01 and EU02, approved for construction in 2007~~8~~, with a rated capacity of 20,500 horsepower (hp) each, exhausting to Stack SV01 and SV02.

...

SECTION E.1 40 CFR Part 60, Subpart KKKK – Standards of Performance for Stationary Combustion Turbines

Emissions Unit Description:

- (a) Two (2) natural gas fueled, simple cycle, combustion turbine compressors, identified as EU01 and EU02, approved for construction in 2007~~8~~, with a rated capacity of 156.56 MMBtu/hr or 20,500 horsepower (hp) each, exhausting to Stack SV01 and SV02.

...

**Appendix A: Emission Calculations
HAPs**

Company Name: Bainbridge Compressor Station
Address : North County Road 25 West, Bainbridge, Indiana 46105
Permit Number: 133-25139-00044
Reviewer: Brian Williams
Date: August 15, 2007

Pollutant	Natural Gas Turbines ^{1,8}				Emergency Generator ^{2,9}		Equipment Leaks		Total
	(lb/MMBtu)	(ton/yr) ^{3,4}	(ton/yr) ^{5,6}	(ton/yr) ⁷	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	
1,3-Butadiene	4.30E-07	3.23E-05	5.40E-04	5.73E-04	1.10E-03	2.75E-04			8.48E-04
2-Methylnaphthalene					1.37E-04	3.43E-05			3.43E-05
2,2,4-Trimethylpentane					1.03E-03	2.58E-04			2.58E-04
Acenaphthene					5.14E-06	1.29E-06			1.29E-06
Acenaphthylene					2.27E-05	5.68E-06			5.68E-06
Acetaldehyde	4.00E-05	3.01E-03	5.03E-02	5.33E-02	3.44E-02	8.60E-03			6.19E-02
Acrolein	6.40E-06	4.81E-04	8.04E-03	8.52E-03	2.11E-02	5.28E-03			1.38E-02
Benzene	1.20E-05	9.02E-04	1.51E-02	1.60E-02	1.81E-03	4.53E-04			1.64E-02
Benzo(b)fluoranthene					6.83E-07	1.71E-07			1.71E-07
Benzo(e)pyrene					1.71E-06	4.28E-07			4.28E-07
Benzo(g, h, i)perylene					1.70E-06	4.25E-07			4.25E-07
Biphenyl					8.72E-04	2.18E-04			2.18E-04
Chrysene					2.85E-06	7.13E-07			7.13E-07
Ethylbenzene	3.20E-05	2.40E-03	4.02E-02	4.26E-02	1.63E-04	4.08E-05			4.27E-02
Fluoranthene					4.57E-06	1.14E-06			1.14E-06
Fluorene					2.33E-05	5.83E-06			5.83E-06
Formaldehyde	2.88E-03	2.16E-01	3.62	3.83	2.17E-01	5.43E-02			3.89
Methanol					1.03E-02	2.58E-03			2.58E-03
Methylene Chloride					8.23E-05	2.06E-05			2.06E-05
n-Hexane					4.57E-03	1.14E-03	8.97E-03	3.93E-02	4.04E-02
Napthalene	1.30E-06	9.77E-05	1.63E-03	1.73E-03	3.06E-04	7.65E-05			1.81E-03
PAH	2.20E-06	1.65E-04	2.76E-03	2.93E-03	1.11E-04	2.78E-05			2.96E-03
Phenanthrene					4.28E-05	1.07E-05			1.07E-05
Phenol					9.87E-05	2.47E-05			2.47E-05
Propylene Oxide	2.90E-05	2.18E-03	3.64E-02	3.86E-02		0.00E+00			3.86E-02
Pyrene					5.59E-06	1.40E-06			1.40E-06
Tetrachloroethane					1.02E-05	2.55E-06			2.55E-06
Toluene	1.30E-04	9.77E-03	1.63E-01	1.73E-01	1.68E-03	4.20E-04			1.74E-01
Vinyl Chloride					6.13E-05	1.53E-05			1.53E-05
Xylene	6.40E-05	4.81E-03	8.04E-02	8.52E-02	7.57E-04	1.89E-04			8.54E-02
Maximum Single HAP				3.83		0.05		0.039	3.89
Total HAPS		0.2403	4.02	4.26		0.07		0.039	4.37

Methodology

¹Emission Factors are from AP-42, Chapter 3.1, Table 3.1-3 (Supplement F 04/2000). Formaldehyde emission factor provided by source, which is higher than the AP-42 Formaldehyde emission factor.

²Emission Factors are from AP-42, Chapter 3.2, Table 3.2-2 (Supplement F 08/2000)

³ Assumes engine inlet temperature of -20°F, 100% load, and 156.56 MMBtu/hr/turbine.

⁴Potential Emission in tons/yr = Emission Factor (lb/MMBtu) * Potential Throughput (156.56 MMBtu/hr * 2 turbines) * 480 (hr/yr) * (1/2000) (ton/lb)

⁵ Assumes engine inlet temperature of 0°F, 100% load, and 151.74 MMBtu/hr/turbine.

⁶Potential Emission in tons/yr = Emission Factor (lb/MMBtu) * Potential Throughput (151.74 MMBtu/hr * 2 turbines) * 8280 (hr/yr) * (1/2000) (ton/lb)

⁷ Total Potential Emissions in tons/yr (Source) = Potential Emissions⁴ (tons/yr) + Potential Emissions⁶ (tons/yr)

⁸ Assumes 20 days per year will have a minimum temperature (°F) less than or equal to 0°F and 345 days per year will have a minimum temperature greater than 0°F.

Data provided by the National Climatic Data Center (NOAA) for Monthly Station Climate Summaries from 1971 to 2000 for weather station Greencastle 5 E, IN. indicates an average of 8.1 days per year will have a minimum temperature (°F) less than or equal to 0°F and 356.9 days per year will have a minimum temperature greater than 0°F.

Available at <http://cdo.ncdc.noaa.gov/cgi-bin/climatenormals/climatenormals.pl>

⁹Potential Emergency Generator Emissions (ton/yr) = Emission Factor (lb/hr) * 500 (hrs/yr) *1/2000 (ton/lbs)

Appendix A: Emission Calculations
Fugitive Equipment Leaks

Company Name: Bainbridge Compressor Station
Address : North County Road 25 West, Bainbridge, Indiana 46105
Permit Number: 133-25139-00044
Reviewer: Brian Williams
Date: August 15, 2007

Fugitive Equipment Leaks						
Equipment	Service	Number of Units	Emission Factor (lb/hr/unit)	VOC Content (Wt%)	Uncontrolled PTE (lb/hr)	Uncontrolled PTE (ton/yr)
Valves	Gas	300	0.00992	1.95%	0.06	0.25
	Light liquid	50	0.00551	10.00%	0.03	0.12
Pump Seals	Light liquid	2	0.02867	10.00%	0.01	0.03
Compressor Seals	Gas	16	0.0194	1.95%	0.01	0.03
	Gas	7	0.0194	10.00%	0.01	0.06
Pressure Relief Valves	Light liquid	2	0.01654	10.00%	0.003	0.014
	Gas	200	0.00086	1.95%	0.003	0.015
Connectors/Flanges	Gas	200	0.00086	1.95%	0.003	0.015
	Light liquid	50	0.00024	10.00%	0.001	0.005
Totals					0.12	0.52

Methodology

Exact number of components is not known at this time. The estimated number of units is based on engineering estimates.
Emission factors (converted to lb/hr/unit) taken from Protocol for Equipment Leak Emission Estimates, EPA-453/R-95-017, Table 2-4.
Hourly Emission (lb/hr) = Number of Units * Emission Factor (lb/hr/unit) * VOC Content (Wt %)
Annual Emissions (tpy) = Hourly Emissions (lb/hr) * 8760 (hr/yr) * (1/2000) (ton/lb)

**Appendix A: Emission Calculations
Fugitive Dust Emissions - Unpaved Roads**

**Company Name: Bainbridge Compressor Station
Address City IN Zip: North County Road 25 West, Bainbridge, Indiana 46105
Permit Number: 133-25139-00044
Reviewer: Brian Williams**

Unpaved Roads at Industrial Site

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

Vehicle Information (provided by source)

Type	Maximum number of vehicles	Number of one-way trips per day per vehicle	Maximum trips per day (trip/day)	Maximum Weight Loaded (tons/trip)	Total Weight driven per day (ton/day)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/day)	Maximum one-way miles (miles/yr)
Vehicle (entering plant) (one-way trip)	1.0	4.0	4.0	2.0	8.0	1320	0.250	1.0	365.0
Vehicle (leaving plant) (one-way trip)	1.0	4.0	4.0	2.0	8.0	1320	0.250	1.0	365.0
Total			8.0		16.0			2.0	730.0

Average Vehicle Weight Per Trip = $\frac{2.0}{1.0}$ tons/trip
Average Miles Per Trip = $\frac{0.25}{1.0}$ miles/trip

Unmitigated Emission Factor, $E_f = k \left[\frac{s}{12} \right]^a \left[\frac{W}{3} \right]^b$ (Equation 1a from AP-42 13.2.2)

	PM	PM10	
where k =	4.9	1.5	lb/mi = particle size multiplier (AP-42 Table 13.2.2-2 for Industrial Roads)
s =	5	5	% = mean % silt content of unpaved roads (AP-42 Table 13.2.2-3 Sand/Gravel Processing Plant Road)
a =	0.7	0.9	= constant (AP-42 Table 13.2.2-2)
W =	2.0	2.0	tons = average vehicle weight (provided by source)
b =	0.45	0.45	= constant (AP-42 Table 13.2.2-2)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, $E_{ext} = E \cdot \left[\frac{365 - P}{365} \right]$
Mitigated Emission Factor, $E_{ext} = \frac{E \cdot [(365 - P)/365]}$
where P = 120 days of rain greater than or equal to 0.01 inches (see Fig. 13.2.2-1)

	PM	PM10	
Unmitigated Emission Factor, E_f =	2.21	0.57	lb/mile
Mitigated Emission Factor, E_{ext} =	1.48	0.38	lb/mile

Process	Unmitigated	Unmitigated	Mitigated	Mitigated
Vehicle (entering plant) (one-way trip)	0.40	0.10	0.27	0.07
Vehicle (leaving plant) (one-way trip)	0.40	0.10	0.27	0.07
	0.81	0.21	0.54	0.14

Methodology

Total Weight driven per day (ton/day) = [Maximum Weight Loaded (tons/trip)] * [Maximum trips per day (trip/day)]
Maximum one-way distance (mi/trip) = [Maximum one-way distance (feet/trip)] / [5280 ft/mile]
Maximum one-way miles (miles/day) = [Maximum trips per year (trip/day)] * [Maximum one-way distance (mi/trip)]
Average Vehicle Weight Per Trip (ton/trip) = SUM[Total Weight driven per day (ton/day)] / SUM[Maximum trips per day (trip/day)]
Average Miles Per Trip (miles/trip) = SUM[Maximum one-way miles (miles/day)] / SUM[Maximum trips per year (trip/day)]
Unmitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Unmitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
Mitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Mitigated Emission Factor (lb/mile)) * (ton/2000 lbs)

Abbreviations

PM = Particulate Matter
PM10 = Particulate Matter (<10 um)
PTE = Potential to Emit

**Appendix A: Emission Calculations
Summary of Emissions**

Company Name: Bainbridge Compressor Station
Address : North County Road 25 West, Bainbridge, Indiana 46105
Permit Number: 133-25139-00044
Reviewer: Brian Williams
Date: August 15, 2007

Uncontrolled Potential to Emit (tons/yr)							
Process	PM	PM10	SO2	NOx	VOC	CO	HAPs
EU01	19.70	19.70	2.28	42.11	5.43	48.65	2.13
EU02	19.70	19.70	2.28	42.11	5.43	48.65	2.13
EG01	0.01	0.01	0.00	6.64	0.09	0.47	0.07
Natural Gas-Fired Heaters (Fuel and Space)	0.01	0.06	0.0044	0.73	0.0404	0.62	0.014
Fugitive Leaks	0.00	0.00	0.00	0.00	0.52	0.00	0.039
Unpaved Roads	0.54	0.14	0.00	0.00	0.00	0.00	0.00
Storage Tanks (Condensate and Wastewater)	0.00	0.00	0.00	0.00	negligible	0.00	negligible
Total	39.97	39.60	4.57	91.59	11.50	98.39	4.38

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

Technical Support Document (TSD) for a New Source Construction and a
Minor Source Operating Permit (MSOP)

Source Background and Description

Source Name: Bainbridge Compressor Station
Source Location: North County Road 25 West, Bainbridge, Indiana 46105
County: Putnam
SIC Code: 4922
Operation Permit No.: M133-25139-00044
Permit Reviewer: Brian M Williams

The Office of Air Quality (OAQ) has reviewed a New Source Construction and MSOP application from Bainbridge Compressor Station, relating to the construction and operation of a new natural gas transmission and compression station.

New Emission Units and Pollution Control Equipment

- (a) Two (2) natural gas fueled, simple cycle, combustion turbine compressors, identified as EU01 and EU02, approved for construction in 2007, with a rated capacity of 20,500 horsepower (hp) each, exhausting to Stack SV01 and SV02.

Under the NSPS for Stationary Combustion Turbines (40 CFR 60, Subpart KKKK), the two (2) compressors (EU01 and EU02) are considered affected facilities.
- (b) One (1) natural gas-fired, 4-stroke lean-burn, emergency generator, identified as EG01, approved for construction in 2007, with a rated capacity of 566 horsepower (hp), exhausting to Stack SV03.
- (c) One (1) natural gas-fired fuel gas heater, identified as H01, with a heat input capacity of 0.75 million British thermal units per hour, exhausting to Stack SV04;
- (d) Sixteen (16) natural gas-fired space heaters, with a heat input capacity of 0.06 million British thermal units per hour each.
- (e) Unpaved roadways.
- (f) One (1) condensate storage tank, with a maximum capacity of 5,830 gallons.
- (g) One (1) wastewater storage tank, with a maximum capacity of 5,830 gallons.

Unpermitted Emission Units and Pollution Control Equipment

There are no unpermitted facilities operating at this source during this review process.

Existing Approvals

No previous air approvals have been issued to this source.

Enforcement Issue

There are no enforcement actions pending.

Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (°F)
SV01	EU01	63.50	8.70	148,386.0	648.0
SV02	EU02	63.50	8.70	148,386.0	648.0
SV03	EG01	30.0	1.00	7,030.0	700.0
SV04	H01	18.0	0.33	500.0	380.0

Recommendation

The staff recommends to the Commissioner that the MSOP 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 application for the purposes of this review was received on August 15, 2007. Additional information was submitted by the source on September 12, 2007.

Emission Calculations

- (a) See Appendix A of this TSD for detailed emissions calculations (Appendix A, pages 1 through 7).
- (b) Based on information provided by the source, there are negligible emissions of regulated criteria pollutants and hazardous air pollutants from the unpaved roadways.
- (c) Using the Environmental Protection Agency's (EPA) TANKS Version 4.09b program, it was determined that the storage of condensate and wastewater at this source would have negligible potential emissions of volatile organic compounds (VOCs).

Potential to Emit of the Source Before Controls

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/year)
PM	39.42
PM-10	39.47
SO ₂	4.57
NO _x	91.59
VOC	10.98
CO	98.39

HAPs	Potential to Emit (ton/yr)
Formaldehyde	3.89
Total HAPs	4.38

- (a) The potential to emit (as defined in 326 IAC 2-1.1-1(16)) of PM, PM-10, SO₂, VOC, CO, and NO_x are less than 100 tons per year and the potential to emit PM, PM-10, NO_x, and CO is greater than 25 tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-6.1. An MSOP will be issued.
- (b) The potential to emit (as defined in 326 IAC 2-1.1-1(16)) of any single HAP is less than ten (10) tons per year and the potential to emit (as defined in 326 IAC 2-1.1-1(16)) of a combination of HAPs is less than twenty-five (25) tons per year. Therefore, this source is not subject to 326 IAC 2-7 (Part 70 Permits).

County Attainment Status

The source is located in Putnam County.

Pollutant	Status
PM-10	attainment
PM2.5	attainment
SO ₂	attainment
NO ₂	attainment
8-hour Ozone	attainment
CO	attainment
Lead	attainment

- (a) Putnam County has been classified as unclassifiable or attainment for PM2.5. U.S. EPA has not yet established the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 for PM 2.5 emissions. Therefore, until the U.S. EPA adopts specific provisions for PSD review for PM2.5 emissions, it has directed states to regulate PM10 emissions as surrogate for PM2.5 emissions. See the State Rule Applicability for the source section.
- (b) Volatile organic compounds (VOC) emissions and Nitrogen Oxides (NO_x) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NO_x emissions are considered when evaluating the rule applicability relating to ozone. Putnam 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.
- (c) Putnam County has been classified as attainment or unclassifiable in Indiana for PM, PM-10, SO₂, NO₂, CO, and lead. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2. See the State Rule Applicability for the source section.
- (d) Fugitive Emissions
 Since this type of operation is not one of the 28 listed source categories under 326 IAC 2-2 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive particulate matter (PM) and volatile organic compound (VOC) emissions are not counted toward determination of PSD applicability.

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	39.42
PM-10	39.47
SO ₂	4.57
VOC	10.98
CO	98.39
NO _x	91.59
Single HAP	3.89
Combination HAPs	4.38

- (a) This new source is not a major stationary source because no attainment pollutant is emitted at a rate of 250 tons per year or greater and it is not in one of the 28 listed source categories. Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply.

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)

This new source is not subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

- (a) each criteria pollutant is less than 100 tons per year,
(b) a single hazardous air pollutant (HAP) is less than 10 tons per year, and
(c) any combination of HAPs is less than 25 tons per year.

This is the first air approval issued to this source.

Federal Rule Applicability

- (a) The requirements of the New Source Performance Standard (NSPS), 40 CFR 60.110, Subpart Kb (Volatile Organic Liquid Storage Vessels) are not included in the permit, because this source does not have storage tanks with a capacity greater than or equal to 75 cubic meters (19,813 gallons).
- (b) The requirements of the New Source Performance Standard, 40 CFR 60.1630, Subpart KKK (Equipment Leaks of VOC from Onshore Natural Gas Processing Plants) and 40 CFR 60.1630, Subpart LLL (Onshore Natural Gas Processing) are not included in the permit, because this source is not defined as an "onshore natural gas processing plant."
- (c) The two (2) natural gas fueled, simple cycle, combustion turbine compressors, identified as EU01 and EU02, are subject to the New Source Performance Standard for Stationary Combustion Turbines, 40 CFR 60, Subpart KKKK because they are stationary combustion turbines constructed after February 18, 2005, each with a heat input at peak load equal to or greater than 10.7 gigajoules (10 MMBtu) per hour.

Pursuant to 40 CFR 60.4305, the two (2) natural gas fueled, simple cycle, combustion turbine compressors, identified as EU01 and EU02 are new stationary combustion turbines because the construction of the two (2) natural gas fueled, simple cycle, combustion turbine compressors, identified as EU01 and EU02 will commence after

February 18, 2005. The specific affected facilities include:

Two (2) natural gas fueled, simple cycle, combustion turbine compressors, identified as EU01 and EU02, with a rated capacity of 20,500 horsepower (hp) each, exhausting to Stack SV01 and SV02.

Nonapplicable portions of the NSPS will not be included in the permit. This source is subject to the following portions of Subpart KKKK.

- (1) 40 CFR 60.4300;
 - (2) 40 CFR 60.4305;
 - (3) 40 CFR 4315;
 - (4) 40 CFR 4320;
 - (5) 40 CFR 60.4330 (a)(1) or (2);
 - (6) 40 CFR 60.4333 (a);
 - (7) 40 CFR 60.4340 (a);
 - (8) 40 CFR 60.4360 or
 - (9) 40 CFR 60.4365 (a) or (b);
 - (10) 40 CFR 60.4370;
 - (11) 40 CFR 60.4375 (a) or (b);
 - (12) 40 CFR 60.4385;
 - (13) 40 CFR 60.4395;
 - (14) 40 CFR 60.4400 (a)(1)(i) or (ii), (a)(2), (a)(3)(i)(A) or (B), (a)(3)(ii)(A),(B), or (C) and (b);
 - (15) 40 CFR 60.4415 (a)(1), (2), or (3);
 - (16) 40 CFR 60.4420.
- (d) The requirements of the New Source Performance Standard, 326 IAC 12 (40 CFR 60.330, Subpart GG (NSPS for Stationary Gas Turbines)), are not included in this permit because the (2) natural gas fueled, simple cycle, combustion turbine compressors, identified as EU01 and EU02 are subject to the 40 CFR part 60, Subpart KKKK standards. The new stationary combustion turbines that are subject to 40 CFR part 60, Subpart KKKK standards are exempt from the requirements of 40 CFR part 60, subpart GG.
- (e) The requirements of the New Source Performance Standard (NSPS), 40 CFR 60, Subpart IIII—Standards of Performance for Stationary Compression Ignition Internal Combustion Engines, are not applicable to the emergency diesel generator because this emergency diesel generator will be installed in 2007, with a maximum capacity less than 3,000 Horsepower.
- (f) There are no other New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR

Part 60) included in this permit for this source.

- (g) There are no National Emission Standards for Hazardous Air Pollutants (NESHAP)(326 IAC 14, 20 and 40 CFR Part 61, 63) included in this permit.
- (h) The requirements of the National Emission Standard for Hazardous Air Pollutants (NESHAPs), 326 IAC 20 (40 CFR 63.760, Subpart HH (Oil and Natural Gas Production Facilities)), are not included in this permit because the combustion turbine compressors are part of the natural gas transmission and the compressors are not located at a natural gas processing plant.
- (i) The requirements of the National Emission Standards for Hazardous Air Pollutants, 326 IAC 20 (40 CFR 63.1270 Subpart HHH (Natural Gas Transmission and Storage Facilities)), are not included in this permit because this source does not have the potential to emit 10 tons per year or more of any hazardous air pollutant or 25 tons per year or more of any combination of hazardous air pollutants.
- (j) The requirements of the National Emission Standards for Hazardous Air Pollutants, 326 IAC 20 (40 CFR 63.6080, Subpart YYYY (Stationary Combustion Turbines)) are not included in this permit because this source does not have the potential to emit 10 tons per year or more of any single hazardous air pollutant or 25 tons per year or more of any combination of hazardous air pollutants.
- (k) This requirements of the National Emission Standards for Hazardous Air Pollutants, Subpart ZZZZ (Stationary Reciprocating Internal Combustion Engines) are not included in this permit because this source does not have the potential to emit 10 tons per year or more of any single hazardous air pollutant or 25 tons per year or more of any combination of hazardous air pollutants.

State Rule Applicability – Entire Source

326 IAC 2-2 (Prevention of Significant Deterioration)

This source, approved for construction in 2007, is a minor source under PSD rules because the potential to emit of any regulated pollutant is less than two hundred fifty (250) tons per year.

326 IAC 2-4.1 (New Source Toxics Control)

The operation of the stationary natural gas compressor station will emit less than 10 tons per year of a single HAP and less than 25 tons per year of a combination of HAPs. Therefore, 326 IAC 2-4.1 does not apply.

326 IAC 2-6.1 (MSOP Permits)

For the combustion turbine compressors EU01 and EU02, the source has elected to comply with alternative emission factors for NO_x. However, the alternative emission factors for NO_x provided by the source are less than those provided in AP-42. Therefore, the source shall comply with the following NO_x emission limits:

- (a) NO_x emissions from the combustion turbine compressors EU01 and EU02, shall not exceed 42 parts per million (ppm) each, when the engine inlet temperature is less than 0°F.
- (b) NO_x emissions from the combustion turbine compressors EU01 and EU02, shall not exceed 15 part per million (ppm) each, when the engine inlet temperature is greater than or equal to 0°F.
- (c) The combined operating time for combustion turbine compressors EU01 and EU02 shall not exceed 480 hours per twelve (12) consecutive month period, with compliance

determined at the end of each month, when the 1-hour average engine inlet temperature is less than 0°F

Compliance with these limits combined with the potential NOx emissions from all other emission units at this source will limit the source-wide total potential to emit of NOx to less than 100 tons per 12 consecutive month period and will render 326 IAC 2-7 (Part 70 Permits) not applicable.

326 IAC 2-6 (Emission Reporting)

This source is located in Putnam County, is not required to operate under a Part 70 permit, and emits less than five (5) tons per year of lead. Therefore, pursuant to 326 IAC 2-6-1(b), the source is only subject to additional information requests as provided in 326 IAC 2-6-5.

326 IAC 5-1 (Opacity Limitations)

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

- (a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

326 IAC 6-4 (Fugitive Dust Emissions)

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.

State Rule Applicability – Individual Facilities

326 IAC 6-2 (Particulate Emission Limitations for Sources of Indirect Heating)

The combustion turbine compressors (EU01 and EU02) and the emergency generator (EG01), are not subject to 326 IAC 6-2 (Particulate Emission Limitations for Sources of Indirect Heating), because, pursuant to 326 IAC 1-2-19, these emission units do not meet the definition of an indirect heating unit.

326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)

The combustion turbine compressors (EU01 and EU02) and the emergency generator (EG01) are exempt from the requirements of 326 IAC 6-3, because, pursuant to 326 IAC 1-2-59, liquid and gaseous fuels and combustion air are not considered as part of the process weight. Additionally, pursuant to 326 IAC 6-3-1(b)(14), the emergency generator (EG01) is also exempt from the requirements of 326 IAC 6-3, because the potential particulate emissions are less than five hundred fifty one thousandths (0.551) pound per hour.

326 IAC 7-1.1-1 (Sulfur Dioxide Emission Limitations)

This source is not subject to 326 IAC 7-1.1-1 (Sulfur Dioxide Emission Limitations) because the potential to emit sulfur dioxide from units EU01 and EU02 is less than twenty-five (25) tons per year and ten (10) pounds per hour.

326 IAC 8-1-6 (New Facilities; General Reduction Requirements)

The combustion turbine compressors (EU01 and EU02), are each not subject to 326 IAC 8-1-6 (New Facilities; General Reduction Requirements), because they each have the potential to emit VOC of less than twenty-five (25) tons per year.

326 IAC 9-1-1 (Carbon Monoxide Emission Limits)

The combustion turbine compressors (EU01 and EU02), are not subject to 326 IAC 9-1-1 (Carbon Monoxide Emission Limits) because there are no applicable emission limits for the source under 326 IAC 9-1-2.

326 IAC 10-1-1 (Nitrogen Oxides Control)

The combustion turbine compressors (EU01 and EU02), are not subject to 326 IAC 10-1-1 (Nitrogen Oxides Control) because the source is not located in Clark or Floyd counties.

326 IAC 10-5-1 (Nitrogen Oxide Reduction Program for Internal Combustion Engines (ICE))

The combustion turbine compressors (EU01 and EU02) and the emergency generator (EG01) are not subject to 326 IAC 10-5-1 (Nitrogen Oxide Reduction Program for Internal Combustion Engines (ICE)) because they are not large NOx SIP Call engines, as defined in 326 IAC 10-5-2(4).

Compliance Determination Requirements

- (a) In order to demonstrate compliance with 326 IAC 2-6.1 (MSOP), the Permittee shall perform NOx testing for one (1) of the combustion turbine compressors (EU01 or EU02), within 60 days after achieving the maximum production rate, but no 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

- (1) The two (2) combustion turbine compressors (EU01 and EU02) have applicable compliance monitoring requirements as specified below:
 - (a) A continuous monitoring system shall be calibrated, maintained, and operated on one (1) of the combustion turbines (EU01 or EU02) for measuring the engine inlet operating temperature. For the purpose of this condition, continuous means no less often than once per minute. The output of this system shall be recorded as a 1-hour average.
 - (b) The Permittee shall determine the 1-hour average temperature from the most recent valid stack test that demonstrates compliance with limits in this permit, as approved by IDEM.
 - (c) On and after the date the approved stack test results are available, the Permittee shall operate each combustion turbine (EU01 and EU02) at or above the 1-hour average temperature as observed during the compliant stack test.

Conclusion

The construction and operation of this stationary natural gas compressor station shall be subject to the conditions of the New Source Construction and Minor Source Operating Permit M133-25139-00044.

Appendix A: Emission Calculations
Natural Gas Fueled Combustion Turbine Compressors (EU01 and EU02)

Company Name: Bainbridge Compressor Station
Address : North County Road 25 West, Bainbridge, Indiana 46105
Permit Number: 133-25139-00044
Reviewer: Brian Williams
Date: August 15, 2007

EU01

Heat Input Capacity Horsepower (hp)	Equivalent Heat Input Capacity at -20°F Engine Inlet Temperature							Days per Year ³	Hours per Year
	20,500.0	156.56	PM	PM-10	SO ₂	NO _x	VOC		
Pollutant									
Emission Factor in MMBtu/hr (AP-42) ¹		0.0019	0.0066	0.0034	0.099	0.0021	0.015		
Emission Factor in lb/hr (AP-42) ²		0.30	1.03	0.53	15.50	0.33	2.35		
Alternative Emission Factors (Provided by Source)									
Emission Factor in lb/hr ³ (at -20°F)		4.63	4.63	0.53	18.13	4.32	43.16		
Emission Factor in lb/hr ⁴ (at 0°F)		4.49	4.49	0.52	9.12	1.06	9.25		
Potential Emission in tons/yr ⁵ (at -20°F)		1.11	1.11	0.13	4.35	1.04	10.36	20	480
Potential Emission in tons/yr ⁵ (at 0°F)		18.59	18.59	2.15	37.76	4.39	38.30	345	8280
Total Potential Emissions in tons/yr⁷		19.70	19.70	2.28	42.11	5.43	48.65		

EU02

Heat Input Capacity Horsepower (hp)	Equivalent Heat Input Capacity at -20°F Engine Inlet Temperature							Days per Year ³	Hours per Year
	20,500.0	156.56	PM	PM-10	SO ₂	NO _x	VOC		
Pollutant									
Emission Factor in MMBtu/hr (AP-42) ¹		0.0019	0.0066	0.0034	0.099	0.0021	0.015		
Emission Factor in lb/hr (AP-42) ²		0.30	1.03	0.53	15.50	0.33	2.35		
Alternative Emission Factors (Provided by Source)									
Emission Factor in lb/hr ³ (at -20°F)		4.63	4.63	0.53	18.13	4.32	43.16		
Emission Factor in lb/hr ⁴ (at 0°F)		4.49	4.49	0.52	9.12	1.06	9.25		
Potential Emission in tons/yr ⁵ (at -20°F)		1.11	1.11	0.13	4.35	1.04	10.36	20	480
Potential Emission in tons/yr ⁵ (at 0°F)		18.59	18.59	2.15	37.76	4.39	38.30	345	8280
Total Potential Emissions in tons/yr⁷		19.70	19.70	2.28	42.11	5.43	48.65		

Methodology

¹AP-42 Emission Factors are from AP-42, Chapter 3.1, Table 3.1-1 and 3.1-2a (Supplement F 04/2000)
²Emission factors in lb/hr (AP-42) = Emission Factor (lb/MMBtu) * Potential Throughput (156.56 MMBtu/hr)
³Emission factors provided by source based on engine inlet temperature of -20°F and 100% Load, which give higher estimates than AP-42.
⁴Emission factors provided by source based on engine inlet temperature of 0°F and 100% Load (Note: AP-42 gives higher estimates for SO₂ and NO_x).
⁵Potential Emission in tons/yr (Source) = Emission Factor (lb/hr) * 480 (hr/yr) * (1/2000) (ton/lb)
⁶Potential Emission in tons/yr (Source) = Emission Factor (lb/hr) * 8280 (hr/yr) * (1/2000) (ton/lb)
⁷Total Potential Emissions in tons/yr (Source) = Potential Emissions⁵ (tons/yr) + Potential Emissions⁶ (tons/yr)
⁸Assumes 20 days per year will have a minimum temperature (°F) less than or equal to 0°F and 345 days per year will have a minimum temperature greater than 0°F.
 Data provided by the National Climatic Data Center (NOAA) for Monthly Station Climate Summaries from 1971 to 2000 for weather station Greencastle 5 E, IN, indicates an average of 8.1 days per year will have a minimum temperature (°F) less than or equal to 0°F and 356.9 days per year will have a minimum temperature greater than 0°F.
 Available at <http://cdo.ncdc.noaa.gov/cgi-bin/climatenormals/climatenormals.pl>
 See Page 5 for HAPs emission calculations

**Appendix A: Emission Calculations
Natural Gas-Fired Emergency Generator (EG01)**

Company Name: Bainbridge Compressor Station
Address : North County Road 25 West, Bainbridge, Indiana 46105
Permit Number: 133-25139-00044
Reviewer: Brian Williams
Date: August 15, 2007

Heat Input Capacity Horsepower (hp)		Potential Throughput (MMBtu/yr)			Operation Limit (hr/yr)				
566.0		2056			500.0				
Pollutant		PM	PM-10	SO ₂	NO _x	VOC	CO		
Emission Factor in lb/MMBtu		9.99E-03	9.99E-03	5.88E-04					
Emission Factor in g/bhp-hr					21.30	0.29	1.50		
Potential Emission in tons/yr		0.01	0.01	0.001	6.6	0.09	0.47		

Methodology

Emission Factors are from AP-42, Chapter 3.2, Table 3.2-2 (Supplement F 08/2000)

Emission factors for NO_x, VOC, and CO are based on manufacturer's emission factors, which give higher estimates than AP-42.

PTE PM, PM10, SO₂ (tons/yr) = Potential Throughput (MMBtu/yr) * Emission Factor (lb/MMBtu) * (1 ton/2000 lb)

PTE NO_x, VOC, CO (tons/yr) = Heat Input Capacity (bhp) * Emission Factor (g/bhp-hr) * (1lb/453.6g) *(500hr/yr) * (1ton/2000lb)

Potential Throughput (MMBtu/yr) = Heat Input Capacity (hp) * Heat Rate (7266 Btu/hp-hr) / (1000000Btu/MMBtu) * 500 hr/yr

See Page 5 for HAPs emission calculations

Appendix A: Emissions Calculations

Natural Gas Combustion Only

MM BTU/HR <100

Company Name: Bainbridge Compressor Station
Address City IN Zip: North County Road 25 West, Bainbridge, Indiana 46105
Permit Number: 133-25139-00044
Reviewer: Brian Williams
Date: August 15, 2007

Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr	1 Fuel Gas Heater @ 16 Space Heaters @	MMBtu/hr 0.75 0.06,each 1.71
1.71	14.7		

Emission Factor in lb/MMCF	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
	1.9	7.6	0.6	100.0 **see below	5.5	84.0
Potential Emission in tons/yr	0.01	0.06	0.0044	0.73	0.0404	0.62

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.
 **Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.
 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/1,020 MMBtu
 Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)
 Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
 See page 4 for HAPs emissions calculations.

Appendix A: Emissions Calculations

Natural Gas Combustion Only

MM BTU/HR <100

HAPs Emissions

Company Name: Bainbridge Compressor Station
Address City IN Zip: North County Road 25 West, Bainbridge, Indiana 46105
Permit Number: 133-25139-00044
Reviewer: Brian Williams
Date: August 15, 2007

HAPs - Organics					
Emission Factor in lb/MMcf	Benzene 2.1E-03	Dichlorobenzene 1.2E-03	Formaldehyde 7.5E-02	Hexane 1.8E+00	Toluene 3.4E-03
Potential Emission in tons/yr	1.542E-05	8.812E-06	5.507E-04	1.322E-02	2.497E-05

HAPs - Metals					
Emission Factor in lb/MMcf	Lead 5.0E-04	Cadmium 1.1E-03	Chromium 1.4E-03	Manganese 3.8E-04	Nickel 2.1E-03
Potential Emission in tons/yr	3.671E-06	8.077E-06	1.028E-05	2.790E-06	1.542E-05

Methodology is the same as page 3.

The five highest organic and metal HAPs emission factors are provided above.
 Additional HAPs emission factors are available in AP-42, Chapter 1.4.

**Appendix A: Emission Calculations
HAPs**

Company Name: Bainbridge Compressor Station
Address : North County Road 25 West, Bainbridge, Indiana 46105
Permit Number: 133-25139-00044
Reviewer: Brian Williams
Date: August 15, 2007

Pollutant	Natural Gas Turbines ^{1,8}				Emergency Generator ^{2,9}		Equipment Leaks		Total
	(lb/MMBtu)	(ton/yr) ^{3,4}	(ton/yr) ^{5,6}	(ton/yr) ⁷	(lb/hr)	(ton/yr)	(lb/hr)	(ton/yr)	
1,3-Butadiene	4.30E-07	3.23E-05	5.40E-04	5.73E-04	1.10E-03	2.75E-04			8.48E-04
2-Methylnaphthalene					1.37E-04	3.43E-05			3.43E-05
2,2,4-Trimethylpentane					1.03E-03	2.58E-04			2.58E-04
Acenaphthene					5.14E-06	1.29E-06			1.29E-06
Acenaphthylene					2.27E-05	5.68E-06			5.68E-06
Acetaldehyde	4.00E-05	3.01E-03	5.03E-02	5.33E-02	3.44E-02	8.60E-03			6.19E-02
Acrolein	6.40E-06	4.81E-04	8.04E-03	8.52E-03	2.11E-02	5.28E-03			1.38E-02
Benzene	1.20E-05	9.02E-04	1.51E-02	1.60E-02	1.81E-03	4.53E-04			1.64E-02
Benzo(b)fluoranthene					6.83E-07	1.71E-07			1.71E-07
Benzo(e)pyrene					1.71E-06	4.28E-07			4.28E-07
Benzo(g, h, i)perylene					1.70E-06	4.25E-07			4.25E-07
Biphenyl					8.72E-04	2.18E-04			2.18E-04
Chrysene					2.85E-06	7.13E-07			7.13E-07
Ethylbenzene	3.20E-05	2.40E-03	4.02E-02	4.26E-02	1.63E-04	4.08E-05			4.27E-02
Fluoranthene					4.57E-06	1.14E-06			1.14E-06
Fluorene					2.33E-05	5.83E-06			5.83E-06
Formaldehyde	2.88E-03	2.16E-01	3.62	3.83	2.17E-01	5.43E-02			3.89
Methanol					1.03E-02	2.58E-03			2.58E-03
Methylene Chloride					8.23E-05	2.06E-05			2.06E-05
n-Hexane					4.57E-03	1.14E-03	8.97E-03	3.93E-02	4.04E-02
Napthalene	1.30E-06	9.77E-05	1.63E-03	1.73E-03	3.06E-04	7.65E-05			1.81E-03
PAH	2.20E-06	1.65E-04	2.76E-03	2.93E-03	1.11E-04	2.78E-05			2.96E-03
Phenanthrene					4.28E-05	1.07E-05			1.07E-05
Phenol					9.87E-05	2.47E-05			2.47E-05
Propylene Oxide	2.90E-05	2.18E-03	3.64E-02	3.86E-02		0.00E+00			3.86E-02
Pyrene					5.59E-06	1.40E-06			1.40E-06
Tetrachloroethane					1.02E-05	2.55E-06			2.55E-06
Toluene	1.30E-04	9.77E-03	1.63E-01	1.73E-01	1.68E-03	4.20E-04			1.74E-01
Vinyl Chloride					6.13E-05	1.53E-05			1.53E-05
Xylene	6.40E-05	4.81E-03	8.04E-02	8.52E-02	7.57E-04	1.89E-04			8.54E-02
Maximum Single HAP				3.83		0.05		0.039	3.89
Total HAPS		0.2403	4.02	4.26		0.07		0.039	4.37

Methodology

¹Emission Factors are from AP-42, Chapter 3.1, Table 3.1-3 (Supplement F 04/2000). Formaldehyde emission factor provided by source, which is higher than the AP-42 Formaldehyde emission factor.

²Emission Factors are from AP-42, Chapter 3.2, Table 3.2-2 (Supplement F 08/2000)

³Assumes engine inlet temperature of -20°F, 100% load, and 156.56 MMBtu/hr/turbine.

⁴Potential Emission in tons/yr = Emission Factor (lb/MMBtu) * Potential Throughput (156.56 MMBtu/hr * 2 turbines) * 194.4 (hr/yr) * (1/2000) (ton/lb)

⁵Assumes engine inlet temperature of 0°F, 100% load, and 151.74 MMBtu/hr/turbine.

⁶Potential Emission in tons/yr = Emission Factor (lb/MMBtu) * Potential Throughput (151.74 MMBtu/hr * 2 turbines) * 8565.6 (hr/yr) * (1/2000) (ton/lb)

⁷Total Potential Emissions in tons/yr (Source) = Potential Emissions⁴ (tons/yr) + Potential Emissions⁶ (tons/yr)

⁸Assumes 20 days per year will have a minimum temperature (°F) less than or equal to 0°F and 345 days per year will have a minimum temperature greater than 0°F.

Data provided by the National Climatic Data Center (NOAA) for Monthly Station Climate Summaries from 1971 to 2000 for weather station Greencastle 5 E, IN. indicates an average of 8.1 days per year will have a minimum temperature (°F) less than or equal to 0°F and 356.9 days per year will have a minimum temperature greater than 0°F.

Available at <http://cdo.ncdc.noaa.gov/cgi-bin/climatnormals/climatnormals.pl>

⁹Potential Emergency Generator Emissions (ton/yr) = Emission Factor (lb/hr) * 500 (hrs/yr) * 1/2000 (ton/lbs)

**Appendix A: Emission Calculations
Fugitive Equipment Leaks**

Company Name: Bainbridge Compressor Station
Address : North County Road 25 West, Bainbridge, Indiana 46105
Permit Number: 133-25139-00044
Reviewer: Brian Williams
Date: August 15, 2007

Fugitive Equipment Leaks						
Equipment	Service	Number of Units	Emission Factor (lb/hr/unit)	VOC Content (Wt%)	Uncontrolled PTE (lb/hr)	Uncontrolled PTE (ton/yr)
Valves	Gas	300	0.00992	1.95%	0.06	0.25
	Light liquid	50	0.00551	10.00%	0.03	0.12
Pump Seals	Light liquid	2	0.02867	10.00%	0.01	0.03
Compressor Seals	Gas	16	0.0194	1.95%	0.01	0.03
	Gas	7	0.0194	10.00%	0.01	0.06
Pressure Relief Valves	Light liquid	2	0.01654	10.00%	0.003	0.014
	Gas	200	0.00086	1.95%	0.003	0.015
Connectors/Flanges	Gas	200	0.00086	1.95%	0.003	0.015
	Light liquid	50	0.00024	10.00%	0.001	0.005
Totals					0.12	0.52

Methodology

Exact number of components is not known at this time. The estimated number of units is based on engineering estimates.

Emission factors (converted to lb/hr/unit) taken from Protocol for Equipment Leak Emission Estimates, EPA-453/R-95-017, Table 2-4.

Hourly Emission (lb/hr) = Number of Units * Emission Factor (lb/hr/unit) * VOC Content (Wt %)

Annual Emissions (tpy) = Hourly Emissions (lb/hr) * 8760 (hr/yr) * (1/2000) (ton/lb)

Appendix A: Emission Calculations
Summary of Emissions

Company Name: Bainbridge Compressor Station

Address : North County Road 25 West, Bainbridge, Indiana 46105

Permit Number: 133-25139-00044

Reviewer: Brian Williams

Date: August 15, 2007

Uncontrolled Potential to Emit (tons/yr)							
Process	PM	PM10	SO₂	NO_x	VOC	CO	HAPs
EU01	19.70	19.70	2.28	42.11	5.43	48.65	2.13
EU02	19.70	19.70	2.28	42.11	5.43	48.65	2.13
EG01	0.01	0.01	0.001	6.64	0.09	0.47	0.07
Natural Gas-Fired Heaters (Fuel and Space)	0.01	0.06	0.0044	0.73	0.0404	0.62	0.014
Fugitive Leaks	0.00	0.00	0.00	0.00	0.52	0.00	0.039
Unpaved Roads	negligible	negligible	0.00	0.00	0.00	0.00	0.00
Storage Tanks (Condensate and Wastewater)	0.00	0.00	0.00	0.00	negligible	0.00	negligible
Total	39.42	39.47	4.57	91.59	10.98	98.39	4.38