



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

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

Michael R. Pence
Governor

Carol S. Comer
Commissioner

NOTICE OF 30-DAY PERIOD FOR PUBLIC COMMENT

Preliminary Findings Regarding the Renewal of a
Part 70 Operating Permit

for Indiana Research Institute in Bartholomew County

Part 70 Operating Permit Renewal No.: T 005-35853-00104

The Indiana Department of Environmental Management (IDEM) has received an application from Indiana Research Institute located at 1402 Hutchins Ave., Columbus, Indiana for a renewal of its Part 70 Operating Permit issued on June 8, 2011. If approved by IDEM's Office of Air Quality (OAQ), this proposed renewal would allow Indiana Research Institute to continue to operate its existing source.

This draft for a Part 70 Operating Permit Renewal does not contain any new equipment that would emit air pollutants; however, some conditions from previously issued permits/approvals have been corrected, changed, or removed. These corrections, changes, and removals may include Title I changes (e.g., changes that add or modify synthetic minor emission limits). This notice fulfills the public notice procedures to which those conditions are subject. IDEM has reviewed this application and has developed preliminary findings, consisting of a draft permit and several supporting documents, which would allow for these changes.

A copy of the permit application and IDEM's preliminary findings are available at:

Bartholomew County Public Library
536 Fifth Street
Columbus, IN 47201-6225

and

IDEM Southeast Regional Office
820 West Sweet Street
Brownstown, IN 47220-9557

A copy of the preliminary findings is available on the Internet at: <http://www.in.gov/ai/appfiles/idem-caats/>.

How can you participate in this process?

The date that this notice is published in a newspaper marks the beginning of a 30-day public comment period. If the 30th day of the comment period falls on a day when IDEM offices are closed for business, all comments must be postmarked or delivered in person on the next business day that IDEM is open.

You may request that IDEM hold a public hearing about this draft permit. If adverse comments concerning the **air pollution impact** of this draft permit are received, with a request for a public hearing, IDEM will decide whether or not to hold a public hearing. IDEM could also decide to hold a public meeting instead of, or in addition to, a public hearing. If a public hearing or meeting is held, IDEM will make a separate announcement of the date, time, and location of that hearing or meeting. At a hearing,

you would have an opportunity to submit written comments and make verbal comments. At a meeting, you would have an opportunity to submit written comments, ask questions, and discuss any air pollution concerns with IDEM staff.

Comments and supporting documentation, or a request for a public hearing should be sent in writing to IDEM at the address below. If you comment via e-mail, please include your full U.S. mailing address so that you can be added to IDEM's mailing list to receive notice of future action related to this permit. If you do not want to comment at this time, but would like to receive notice of future action related to this permit application, please contact IDEM at the address below. Please refer to permit number T 005-35853-00104 in all correspondence.

Comments should be sent to:

Anh Nguyen
IDEM, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251
(800) 451-6027, ask for extension 3-5334
Or dial directly: (317) 233-5334
Fax: (317) 232-6749 attn: Anh Nguyen
E-mail: Anh.Nguyen@idem.IN.gov

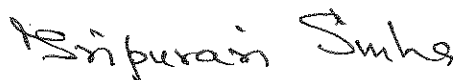
All comments will be considered by IDEM when we make a decision to issue or deny the permit. Comments that are most likely to affect final permit decisions are those based on the rules and laws governing this permitting process (326 IAC 2), air quality issues, and technical issues. IDEM does not have legal authority to regulate zoning, odor, or noise. For such issues, please contact your local officials.

For additional information about air permits and how the public and interested parties can participate, refer to the IDEM Permit Guide on the Internet at: <http://www.in.gov/idem/5881.htm>; and the Citizens' Guide to IDEM on the Internet at: <http://www.in.gov/idem/6900.htm>.

What will happen after IDEM makes a decision?

Following the end of the public comment period, IDEM will issue a Notice of Decision stating whether the permit has been issued or denied. If the permit is issued, it may be different than the draft permit because of comments that were received during the public comment period. If comments are received during the public notice period, the final decision will include a document that summarizes the comments and IDEM's response to those comments. If you have submitted comments or have asked to be added to the mailing list, you will receive a Notice of the Decision. The notice will provide details on how you may appeal IDEM's decision, if you disagree with that decision. The final decision will also be available on the Internet at the address indicated above, at the local library indicated above, at the IDEM Regional Office indicated above, and the IDEM public file room on the 12th floor of the Indiana Government Center North, 100 N. Senate Avenue, Indianapolis, Indiana 46204-2251.

If you have any questions, please contact Anh Nguyen of my staff at the above address.



Tripurari P. Sinha, Ph.D., Section Chief
Permits Branch
Office of Air Quality



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DRAFT

Part 70 Operating Permit Renewal OFFICE OF AIR QUALITY

**Indiana Research Institute
1402 Hutchins Ave
Columbus, Indiana 47201**

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

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

This permit is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-7 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17.

Operation Permit No.: T005-35853-00104	
Issued by:	Issuance Date:
Tripurari P. Sinha, Ph. D., Section Chief Permits Branch Office of Air Quality	Expiration Date:

TABLE OF CONTENTS

A. SOURCE SUMMARY

- A.1 General Information [326 IAC 2-7-4(c)][326 IAC 2-7-5(14)][326 IAC 2-7-1(22)]
- A.2 Part 70 Source Definition [326 IAC 2-7-1(22)]
- A.3 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)]
[326 IAC 2-7-5(14)]
- A.4 Insignificant Activities [326 IAC 2-7-1(21)][326 IAC 2-7-4(c)] [326 IAC 2-7-5(14)]
[326 IAC 2-7-5(14)]
- A.5 Part 70 Permit Applicability [326 IAC 2-7-2]

B. GENERAL CONDITIONS

- B.1 Definitions [326 IAC 2-7-1]
- B.2 Permit Term [326 IAC 2-7-5(2)][326 IAC 2-1.1-9.5][326 IAC 2-7-4(a)(1)(D)]
[IC 13-15-3-6(a)]
- B.3 Term of Conditions [326 IAC 2-1.1-9.5]
- B.4 Enforceability [326 IAC 2-7-7] [IC 13-17-12]
- B.5 Severability [326 IAC 2-7-5(5)]
- B.6 Property Rights or Exclusive Privilege [326 IAC 2-7-5(6)(D)]
- B.7 Duty to Provide Information [326 IAC 2-7-5(6)(E)]
- B.8 Certification [326 IAC 2-7-4(f)][326 IAC 2-7-6(1)][326 IAC 2-7-5(3)(C)]
- B.9 Annual Compliance Certification [326 IAC 2-7-6(5)]
- B.10 Preventive Maintenance Plan [326 IAC 2-7-5(12)][326 IAC 1-6-3]
- B.11 Emergency Provisions [326 IAC 2-7-16]
- B.12 Permit Shield [326 IAC 2-7-15][326 IAC 2-7-20][326 IAC 2-7-12]
- B.13 Prior Permits Superseded [326 IAC 2-1.1-9.5][326 IAC 2-7-10.5]
- B.14 Termination of Right to Operate [326 IAC 2-7-10][326 IAC 2-7-4(a)]
- B.15 Permit Modification, Reopening, Revocation and Reissuance, or Termination
[326 IAC 2-7-5(6)(C)][326 IAC 2-7-8(a)][326 IAC 2-7-9]
- B.16 Permit Renewal [326 IAC 2-7-3][326 IAC 2-7-4][326 IAC 2-7-8(e)]
- B.17 Permit Amendment or Modification [326 IAC 2-7-11][326 IAC 2-7-12]
- B.18 Permit Revision Under Economic Incentives and Other Programs [326 IAC 2-7-5(8)]
[326 IAC 2-7-12(b)(2)]
- B.19 Operational Flexibility [326 IAC 2-7-20][326 IAC 2-7-10.5]
- B.20 Source Modification Requirement [326 IAC 2-7-10.5]
- B.21 Inspection and Entry [326 IAC 2-7-6][IC 13-14-2-2][IC 13-30-3-1][IC 13-17-3-2]
- B.22 Transfer of Ownership or Operational Control [326 IAC 2-7-11]
- B.23 Annual Fee Payment [326 IAC 2-7-19] [326 IAC 2-7-5(7)][326 IAC 2-1.1-7]
- B.24 Credible Evidence [326 IAC 2-7-5(3)][326 IAC 2-7-6][62 FR 8314] [326 IAC 1-1-6]

C. SOURCE OPERATION CONDITIONS

Emission Limitations and Standards [326 IAC 2-7-5(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]
- C.2 Opacity [326 IAC 5-1]
- C.3 Open Burning [326 IAC 4-1] [IC 13-17-9]
- C.4 Incineration [326 IAC 4-2] [326 IAC 9-1-2]
- C.5 Fugitive Dust Emissions [326 IAC 6-4]
- C.6 Stack Height [326 IAC 1-7]
- C.7 Asbestos Abatement Projects [326 IAC 14-10] [326 IAC 18] [40 CFR 61, Subpart M]

Testing Requirements [326 IAC 2-7-6(1)]

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

Compliance Requirements [326 IAC 2-1.1-11]

- C.9 Compliance Requirements [326 IAC 2-1.1-11]

Compliance Monitoring Requirements [326 IAC 2-7-5(1)][326 IAC 2-7-6(1)]

- C.10 Compliance Monitoring [326 IAC 2-7-5(3)][326 IAC 2-7-6(1)]
- C.11 Instrument Specifications [326 IAC 2-1.1-11] [326 IAC 2-7-5(3)]
[326 IAC 2-7-6(1)]

Corrective Actions and Response Steps [326 IAC 2-7-5][326 IAC 2-7-6]

- C.12 Risk Management Plan [326 IAC 2-7-5(12)] [40 CFR 68]
- C.13 Response to Excursions or Exceedances [326 IAC 2-7-5] [326 IAC 2-7-6]
- C.14 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-7-5]
[326 IAC 2-7-6]

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

- C.15 Emission Statement [326 IAC 2-7-5(3)(C)(iii)][326 IAC 2-7-5(7)][326 IAC 2-7-19(c)]
[326 IAC 2-6]
- C.16 General Record Keeping Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-6]
- C.17 General Reporting Requirements [326 IAC 2-7-5(3)(C)] [326 IAC 2-1.1-11]

Stratospheric Ozone Protection

- C.18 Compliance with 40 CFR 82 and 326 IAC 22-1

D. EMISSIONS UNIT OPERATION CONDITIONS

Emission Limitations and Standards [326 IAC 2-7-5(1)]

- D.1.1 PSD Minor Limit [326 IAC 2-2]
- D.1.2 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

Compliance Determination Requirements [326 IAC 2-7-6(1),(6)] [326 IAC 2-1.1-11]

- D.1.3 Compliance Determination with PSD Minor limit
- D.1.4 Testing Requirements [326 IAC 2-7-6(1),(6)] [326 IAC 2-1.1-11]

Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

- D.1.5 Visible Emissions Notations [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

- D.1.6 Record Keeping Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]
- D.1.7 Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

Certification

Emergency Occurrence Report

Quarterly Report

Quarterly Deviation and Compliance Monitoring Report

SECTION A

SOURCE SUMMARY

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

A.1 General Information [326 IAC 2-7-4(c)][326 IAC 2-7-5(14)][326 IAC 2-7-1(22)]

The Permittee owns and operates a stationary internal combustion engine manufacturing facility..

Source Address:	1402 Hutchins Ave, Columbus, Indiana 47201
General Source Phone Number:	(812) 378-5363
SIC Code:	8734 (Testing Laboratories)
County Location:	Bartholomew
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Part 70 Operating Permit Program
	Minor Source, under PSD
	Minor Source, Section 112 of the Clean Air Act
	Not 1 of 28 Source Categories

A.2 Part 70 Source Definition [326 IAC 2-7-1(22)]

IDEM has determined that Cummins Technical Center (Cummins TC), 005-00002, located at 1900 McKinley Avenue, Columbus, Indiana, and Indiana Research Institute (IRI), 005-00104, located at 1402 Hutchins Avenue, Columbus, Indiana, will be considered two (2) sources as defined by 326 IAC 2-7-1(22) because the plants are not under common ownership or common control, neither plant serves as a support facility for the other; and the plants are not located on contiguous or adjacent properties. Therefore, based on this evaluation these plants are still not considered one (1) major source, as defined by 326 IAC 2-7-1(22). This conclusion was initially determined under Part 70 Operating Permit Renewal T005-30139-00104 on June 8, 2011.

A.3 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)][326 IAC 2-7-5(14)]

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

- (a) Two (2) Low Power Rating (<300 HP) Engine Test Cells, identified as TC19 and TC20, constructed in 2011, each with a maximum capacity of 13.4 gallons of fuel per hour. Each cell is capable of testing diesel and JP-8 fueled 4 stroke, lean burn, compression ignition, reciprocating internal combustion engines. Emissions are uncontrolled and exhaust to stacks S19 and S20.
- (b) Nine (9) Midrange Power Rating (<600 HP) Engine Test Cells, identified as TC5 through TC10, TC12, TC14, and TC15 constructed in 2011, each with a maximum capacity of 13.4 gallons of fuel per hour. Each cell is capable of testing diesel and JP-8 fueled 4 stroke, lean burn, compression ignition, reciprocating internal combustion engines. Emissions are uncontrolled and exhaust to stacks S5 through S10, S12, S14, and S15.
- (c) Three (3) High Power Rating (<1500 HP) Engine Test Cells, identified as TC16 through TC18, constructed in 2011, each with a maximum capacity of 20.0 gallons of fuel per hour. Each cell is capable of testing diesel and JP-8 fueled 4 stroke, lean burn, compression ignition, reciprocating internal combustion engines. Emissions are uncontrolled and exhaust to stacks S16 through S18.

- (d) Four (4) Midrange Power Rating (<600 HP) Engine Test Cells, identified as TC1 through TC4, permitted in 2012, each with a maximum capacity of 26.8 gallons of diesel or JP 8 fuel per hour or 1750 cu. ft. of Natural Gas per hour. Each cell is capable of testing diesel, JP-8, and Natural gas reciprocating internal combustion engines. Emissions are uncontrolled and exhaust to stacks S1 through S4.

A.4 Insignificant Activities [326 IAC 2-7-1(21)][326 IAC 2-7-4(c)][326 IAC 2-7-5(14)]

This stationary source does not currently have any insignificant activities, as defined in 326 IAC 2-7-1(21).

- (a) One (1) paint booth, identified as P1, permitted in 2011, with a maximum capacity of 3.0 engines per day. Emissions are uncontrolled and exhaust to stack PH.
- (b) Closed loop heating and cooling systems.
- (c) Activities associated with the treatment of wastewater streams with an oil and grease content less than or equal to one percent (1%) by volume.
- (d) Noncontact cooling tower systems with forced and induced draft cooling tower systems not regulated under a NESHAP.
- (e) Blowdown for compressors and cooling tower.
- (f) Emissions from a laboratory as defined in 326 IAC 2-7-1(21)(F).

A.5 Part 70 Permit Applicability [326 IAC 2-7-2]

This stationary source is required to have a Part 70 permit by 326 IAC 2-7-2 (Applicability) because:

- (a) It is a major source, as defined in 326 IAC 2-7-1(22);
- (b) It is a source in a source category designated by the United States Environmental Protection Agency (U.S. EPA) under 40 CFR 70.3 (Part 70 - Applicability).

SECTION B GENERAL CONDITIONS

B.1 Definitions [326 IAC 2-7-1]

Terms in this permit shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, the applicable definitions found in the statutes or regulations (IC 13-11, 326 IAC 1-2 and 326 IAC 2-7) shall prevail.

B.2 Permit Term [326 IAC 2-7-5(2)][326 IAC 2-1.1-9.5][326 IAC 2-7-4(a)(1)(D)][IC 13-15-3-6(a)]

- (a) This permit, T005-35853-00104, 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, including any permit shield provided in 326 IAC 2-7-15, until the renewal permit has been issued or denied.

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

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

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

B.4 Enforceability [326 IAC 2-7-7] [IC 13-17-12]

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

B.5 Severability [326 IAC 2-7-5(5)]

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

B.6 Property Rights or Exclusive Privilege [326 IAC 2-7-5(6)(D)]

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

B.7 Duty to Provide Information [326 IAC 2-7-5(6)(E)]

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

B.8 Certification [326 IAC 2-7-4(f)][326 IAC 2-7-6(1)][326 IAC 2-7-5(3)(C)]

- (a) A certification required by this permit meets the requirements of 326 IAC 2-7-6(1) if:

- (1) it contains a certification by a "responsible official" as defined by 326 IAC 2-7-1(35), and
- (2) the certification states that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.
- (b) The Permittee may use the attached Certification Form, or its equivalent with each submittal requiring certification. One (1) certification may cover multiple forms in one (1) submittal.
- (c) A "responsible official" is defined at 326 IAC 2-7-1(35).

B.9 Annual Compliance Certification [326 IAC 2-7-6(5)]

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

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

and

United States Environmental Protection Agency, Region V
Air and Radiation Division, Air Enforcement Branch - Indiana (AE-17J)
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

- (b) The annual compliance certification report required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.
- (c) The annual compliance certification report shall include the following:
 - (1) The appropriate identification of each term or condition of this permit that is the basis of the certification;
 - (2) The compliance status;
 - (3) Whether compliance was continuous or intermittent;
 - (4) The methods used for determining the compliance status of the source, currently and over the reporting period consistent with 326 IAC 2-7-5(3); and
 - (5) Such other facts, as specified in Sections D of this permit, as IDEM, OAQ may require to determine the compliance status of the source.

The submittal by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

B.10 Preventive Maintenance Plan [326 IAC 2-7-5(12)][326 IAC 1-6-3]

- (a) A Preventive Maintenance Plan meets the requirements of 326 IAC 1-6-3 if it includes, at a minimum:
- (1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;
 - (2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and
 - (3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

The Permittee shall implement the PMPs.

- (b) If required by specific condition(s) in Section D of this permit where no PMP was previously required, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMPs) no later than ninety (90) days after issuance of this permit or ninety (90) days after initial start-up, whichever is later, including the following information on each facility:
- (1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;
 - (2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and
 - (3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

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

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

The PMP extension notification does not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

The Permittee shall implement the PMPs.

- (c) A copy of the PMPs shall be submitted to IDEM, OAQ upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ may require the Permittee to revise its PMPs whenever lack of proper maintenance causes or is the primary contributor to an exceedance of any limitation on emissions. The PMPs and their submittal do not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

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

B.11 Emergency Provisions [326 IAC 2-7-16]

- (a) An emergency, as defined in 326 IAC 2-7-1(12), is not an affirmative defense for an action brought for noncompliance with a federal or state health-based emission limitation.
- (b) An emergency, as defined in 326 IAC 2-7-1(12), constitutes an affirmative defense to an action brought for noncompliance with a technology-based emission limitation if the affirmative defense of an emergency is demonstrated through properly signed, contemporaneous operating logs or other relevant evidence that describe the following:

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

Telephone Number: 1-800-451-6027 (ask for Office of Air Quality, Compliance and Enforcement Branch), or
Telephone Number: 317-233-0178 (ask for Office of Air Quality, Compliance and Enforcement Branch)
Facsimile Number: 317-233-6865
Southeast Regional Office phone: (812) 358-2027; fax: (812) 358-2058.

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

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

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

The notice fulfills the requirement of 326 IAC 2-7-5(3)(C)(ii) and must contain the following:

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

(C) Corrective actions taken.

The notification which shall be submitted by the Permittee does not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

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

- (c) In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.
- (d) This emergency provision supersedes 326 IAC 1-6 (Malfunctions). This permit condition is in addition to any emergency or upset provision contained in any applicable requirement.
- (e) The Permittee seeking to establish the occurrence of an emergency shall make records available upon request to ensure that failure to implement a PMP did not cause or contribute to an exceedance of any limitations on emissions. However, IDEM, OAQ may require that the Preventive Maintenance Plans required under 326 IAC 2-7-4(c)(8) be revised in response to an emergency.
- (f) Failure to notify IDEM, OAQ by telephone or facsimile of an emergency lasting more than one (1) hour in accordance with (b)(4) and (5) of this condition shall constitute a violation of 326 IAC 2-7 and any other applicable rules.
- (g) If the emergency situation causes a deviation from a technology-based limit, the Permittee may continue to operate the affected emitting facilities during the emergency provided the Permittee immediately takes all reasonable steps to correct the emergency and minimize emissions.

B.12 Permit Shield [326 IAC 2-7-15][326 IAC 2-7-20][326 IAC 2-7-12]

- (a) Pursuant to 326 IAC 2-7-15, the Permittee has been granted a permit shield. The permit shield provides that compliance with the conditions of this permit shall be deemed compliance with any applicable requirements as of the date of permit issuance, provided that either the applicable requirements are included and specifically identified in this permit or the permit contains an explicit determination or concise summary of a determination that other specifically identified requirements are not applicable. The Indiana statutes from IC 13 and rules from 326 IAC, referenced 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 Part 70 permit under 326 IAC 2-7 or for applicable requirements for which a permit shield has been granted.

This permit shield does not extend to applicable requirements which are promulgated after the date of issuance of this permit unless this permit has been modified to reflect such new requirements.

- (b) If, after issuance of this permit, it is determined that the permit is in nonconformance with an applicable requirement that applied to the source on the date of permit issuance, IDEM, OAQ shall immediately take steps to reopen and revise this permit and issue a compliance order to the Permittee to ensure expeditious compliance with the applicable requirement until the permit is reissued. The permit shield shall continue in effect so long as the Permittee is in compliance with the compliance order.

- (c) No permit shield shall apply to any permit term or condition that is determined after issuance of this permit to have been based on erroneous information supplied in the permit application. Erroneous information means information that the Permittee knew to be false, or in the exercise of reasonable care should have been known to be false, at the time the information was submitted.
- (d) Nothing in 326 IAC 2-7-15 or in this permit shall alter or affect the following:
 - (1) The provisions of Section 303 of the Clean Air Act (emergency orders), including the authority of the U.S. EPA under Section 303 of the Clean Air Act;
 - (2) The liability of the Permittee for any violation of applicable requirements prior to or at the time of this permit's issuance;
 - (3) The applicable requirements of the acid rain program, consistent with Section 408(a) of the Clean Air Act; and
 - (4) The ability of U.S. EPA to obtain information from the Permittee under Section 114 of the Clean Air Act.
- (e) This permit shield is not applicable to any change made under 326 IAC 2-7-20(b)(2) (Sections 502(b)(10) of the Clean Air Act changes) and 326 IAC 2-7-20(c)(2) (trading based on State Implementation Plan (SIP) provisions).
- (f) This permit shield is not applicable to modifications eligible for group processing until after IDEM, OAQ, has issued the modifications. [326 IAC 2-7-12(c)(7)]
- (g) This permit shield is not applicable to minor Part 70 permit modifications until after IDEM, OAQ, has issued the modification. [326 IAC 2-7-12(b)(8)]

B.13 Prior Permits Superseded [326 IAC 2-1.1-9.5][326 IAC 2-7-10.5]

- (a) All terms and conditions of permits established prior to T005-35853-00104 and issued pursuant to permitting programs approved into the state implementation plan have been either:
 - (1) incorporated as originally stated,
 - (2) revised under 326 IAC 2-7-10.5, or
 - (3) deleted under 326 IAC 2-7-10.5.
- (b) Provided that all terms and conditions are accurately reflected in this permit, all previous registrations and permits are superseded by this Part 70 operating permit.

B.14 Termination of Right to Operate [326 IAC 2-7-10][326 IAC 2-7-4(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 nine (9) months prior to the date of expiration of the source's existing permit, consistent with 326 IAC 2-7-3 and 326 IAC 2-7-4(a).

B.15 Permit Modification, Reopening, Revocation and Reissuance, or Termination [326 IAC 2-7-5(6)(C)][326 IAC 2-7-8(a)][326 IAC 2-7-9]

- (a) This permit may be modified, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a Part 70 Operating Permit modification, revocation and reissuance, or termination, or of a notification of planned changes or

anticipated noncompliance does not stay any condition of this permit.

[326 IAC 2-7-5(6)(C)] The notification by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

- (b) This permit shall be reopened and revised under any of the circumstances listed in IC 13-15-7-2 or if IDEM, OAQ determines any of the following:
 - (1) That this permit contains a material mistake.
 - (2) That inaccurate statements were made in establishing the emissions standards or other terms or conditions.
 - (3) That this permit must be revised or revoked to assure compliance with an applicable requirement. [326 IAC 2-7-9(a)(3)]
- (c) Proceedings by IDEM, OAQ to reopen and revise this permit shall follow the same procedures as apply to initial permit issuance and shall affect only those parts of this permit for which cause to reopen exists. Such reopening and revision shall be made as expeditiously as practicable. [326 IAC 2-7-9(b)]
- (d) The reopening and revision of this permit, under 326 IAC 2-7-9(a), shall not be initiated before notice of such intent is provided to the Permittee by IDEM, OAQ at least thirty (30) days in advance of the date this permit is to be reopened, except that IDEM, OAQ may provide a shorter time period in the case of an emergency. [326 IAC 2-7-9(c)]

B.16 Permit Renewal [326 IAC 2-7-3][326 IAC 2-7-4][326 IAC 2-7-8(e)]

- (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 2-7-4. Such information shall be included in the application for each emission unit at this source, except those emission units included on the trivial or insignificant activities list contained in 326 IAC 2-7-1(21) and 326 IAC 2-7-1(42). The renewal application does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

Request for renewal shall be submitted to:

Indiana Department of Environmental Management
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

- (b) A timely renewal application is one that is:
 - (1) Submitted at least nine (9) months prior to the date of the expiration of this permit; and
 - (2) If the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.
- (c) If the Permittee submits a timely and complete application for renewal of this permit, the source's failure to have a permit is not a violation of 326 IAC 2-7 until IDEM, OAQ takes

final action on the renewal application, except that this protection shall cease to apply if, subsequent to the completeness determination, the Permittee fails to submit by the deadline specified, pursuant to 326 IAC 2-7-4(a)(2)(D), in writing by IDEM, OAQ any additional information identified as being needed to process the application.

B.17 Permit Amendment or Modification [326 IAC 2-7-11][326 IAC 2-7-12]

- (a) Permit amendments and modifications are governed by the requirements of 326 IAC 2-7-11 or 326 IAC 2-7-12 whenever the Permittee seeks to amend or modify this permit.

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

Indiana Department of Environmental Management
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

Any such application does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

- (c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-7-11(c)(3)]

B.18 Permit Revision Under Economic Incentives and Other Programs [326 IAC 2-7-5(8)][326 IAC 2-7-12(b)(2)]

- (a) No Part 70 permit revision or notice shall be required under any approved economic incentives, marketable Part 70 permits, emissions trading, and other similar programs or processes for changes that are provided for in a Part 70 permit.
- (b) Notwithstanding 326 IAC 2-7-12(b)(1) and 326 IAC 2-7-12(c)(1), minor Part 70 permit modification procedures may be used for Part 70 modifications involving the use of economic incentives, marketable Part 70 permits, emissions trading, and other similar approaches to the extent that such minor Part 70 permit modification procedures are explicitly provided for in the applicable State Implementation Plan (SIP) or in applicable requirements promulgated or approved by the U.S. EPA.

B.19 Operational Flexibility [326 IAC 2-7-20][326 IAC 2-7-10.5]

- (a) The Permittee may make any change or changes at the source that are described in 326 IAC 2-7-20(b) or (c) without a prior permit revision, if each of the following conditions is met:
- (1) The changes are not modifications under any provision of Title I of the Clean Air Act;
 - (2) Any preconstruction approval required by 326 IAC 2-7-10.5 has been obtained;
 - (3) The changes do not result in emissions which exceed the limitations provided in this permit (whether expressed herein as a rate of emissions or in terms of total emissions);
 - (4) The Permittee notifies the:

Indiana Department of Environmental Management
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

and

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

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

- (5) The Permittee maintains records on-site, on a rolling five (5) year basis, which document all such changes and emission trades that are subject to 326 IAC 2-7-20(b)(1) and (c)(1). The Permittee shall make such records available, upon reasonable request, for public review.

Such records shall consist of all information required to be submitted to IDEM, OAQ in the notices specified in 326 IAC 2-7-20(b)(1) and (c)(1).

- (b) The Permittee may make Section 502(b)(10) of the Clean Air Act changes (this term is defined at 326 IAC 2-7-1(37)) without a permit revision, subject to the constraint of 326 IAC 2-7-20(a). For each such Section 502(b)(10) of the Clean Air Act change, the required written notification shall include the following:

- (1) A brief description of the change within the source;
- (2) The date on which the change will occur;
- (3) Any change in emissions; and
- (4) Any permit term or condition that is no longer applicable as a result of the change.

The notification which shall be submitted is not considered an application form, report or compliance certification. Therefore, the notification by the Permittee does not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

- (c) Emission Trades [326 IAC 2-7-20(c)]
The Permittee may trade emissions increases and decreases at the source, where the applicable SIP provides for such emission trades without requiring a permit revision, subject to the constraints of Section (a) of this condition and those in 326 IAC 2-7-20(c).
- (d) Alternative Operating Scenarios [326 IAC 2-7-20(d)]
The Permittee may make changes at the source within the range of alternative operating scenarios that are described in the terms and conditions of this permit in accordance with 326 IAC 2-7-5(9). No prior notification of IDEM, OAQ or U.S. EPA is required.

- (e) Backup fuel switches specifically addressed in, and limited under, Section D of this permit shall not be considered alternative operating scenarios. Therefore, the notification requirements of part (a) of this condition do not apply.

B.20 Source Modification Requirement [326 IAC 2-7-10.5]

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

B.21 Inspection and Entry [326 IAC 2-7-6][IC 13-14-2-2][IC 13-30-3-1][IC 13-17-3-2]

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 Part 70 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 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 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 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.22 Transfer of Ownership or Operational Control [326 IAC 2-7-11]

- (a) The Permittee must comply with the requirements of 326 IAC 2-7-11 whenever the Permittee seeks to change the ownership or operational control of the source and no other change in the permit is necessary.
- (b) Any application requesting a change in the ownership or operational control of the source shall contain a written agreement containing a specific date for transfer of permit responsibility, coverage and liability between the current and new Permittee. The application shall be submitted to:

Indiana Department of Environmental Management
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

Any such application does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

- (c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-7-11(c)(3)]

B.23 Annual Fee Payment [326 IAC 2-7-19] [326 IAC 2-7-5(7)][326 IAC 2-1.1-7]

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

B.24 Credible Evidence [326 IAC 2-7-5(3)][326 IAC 2-7-6][62 FR 8314] [326 IAC 1-1-6]

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

SECTION C

SOURCE OPERATION CONDITIONS

Entire Source

Emission Limitations and Standards [326 IAC 2-7-5(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 Opacity [326 IAC 5-1]

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

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

C.3 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.4 Incineration [326 IAC 4-2] [326 IAC 9-1-2]

The Permittee shall not operate an incinerator except as provided in 326 IAC 4-2 or in this permit. The Permittee shall not operate a refuse incinerator or refuse burning equipment except as provided in 326 IAC 9-1-2 or in this permit.

C.5 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). 326 IAC 6-4-2(4) is not federally enforceable.

C.6 Stack Height [326 IAC 1-7]

The Permittee shall comply with the applicable provisions of 326 IAC 1-7 (Stack Height Provisions), for all exhaust stacks through which a potential (before controls) of twenty-five (25) tons per year or more of particulate matter or sulfur dioxide is emitted. The provisions of 326 IAC 1-7-1(3), 326 IAC 1-7-2, 326 IAC 1-7-3(c) and (d), 326 IAC 1-7-4, and 326 IAC 1-7-5(a), (b), and (d) are not federally enforceable.

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

The notice shall include a signed certification from the owner or operator that the information provided in this notification is correct and that only Indiana licensed workers and project supervisors will be used to implement the asbestos removal project. The notifications do not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

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

thoroughly inspect the affected portion of the facility for the presence of asbestos. The requirement to use an Indiana Licensed Asbestos inspector is not federally enforceable.

Testing Requirements [326 IAC 2-7-6(1)]

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

- (a) For performance testing required by this permit, a test protocol, except as provided elsewhere in this permit, shall be submitted to:

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

no later than thirty-five (35) days prior to the intended test date. The protocol submitted by the Permittee does not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

- (b) The Permittee shall notify IDEM, OAQ of the actual test date at least fourteen (14) days prior to the actual test date. The notification submitted by the Permittee does not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).
- (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 2-7-5(1)][326 IAC 2-7-6(1)]

C.10 Compliance Monitoring [326 IAC 2-7-5(3)][326 IAC 2-7-6(1)]

- (a) For new units:
Unless otherwise specified in the approval for the new emission unit(s), compliance monitoring for new emission units shall be implemented on and after the date of initial start-up.
- (b) For existing units:
Unless otherwise specified in this permit, for all monitoring requirements not already legally required, the Permittee shall be allowed up to ninety (90) days from the date of permit issuance to begin such monitoring. If, due to circumstances beyond the Permittee's control, any monitoring equipment required by this permit cannot be installed and operated no later than ninety (90) days after permit issuance, the Permittee may extend the compliance schedule related to the equipment for an additional ninety (90) days provided the Permittee notifies:

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

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

The notification which shall be submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

C.11 Instrument Specifications [326 IAC 2-1.1-11] [326 IAC 2-7-5(3)] [326 IAC 2-7-6(1)]

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

Corrective Actions and Response Steps [326 IAC 2-7-5][326 IAC 2-7-6]

C.12 Risk Management Plan [326 IAC 2-7-5(12)] [40 CFR 68]

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

C.13 Response to Excursions or Exceedances [326 IAC 2-7-5] [326 IAC 2-7-6]

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

- (a) The Permittee shall take reasonable response steps to restore operation of the emissions unit (including any control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing excess emissions.
- (b) The response shall include minimizing the period of any startup, shutdown or malfunction. The response may include, but is not limited to, the following:
 - (1) initial inspection and evaluation;
 - (2) recording that operations returned or are returning to normal without operator action (such as through response by a computerized distribution control system); or
 - (3) any necessary follow-up actions to return operation to normal or usual manner of operation.

- (c) A determination of whether the Permittee has used acceptable procedures in response to an excursion or exceedance will be based on information available, which may include, but is not limited to, the following:
 - (1) monitoring results;
 - (2) review of operation and maintenance procedures and records; and/or
 - (3) inspection of the control device, associated capture system, and the process.
- (d) Failure to take reasonable response steps shall be considered a deviation from the permit.
- (e) The Permittee shall record the reasonable response steps taken.

C.14 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-7-5][326 IAC 2-7-6]

- (a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall submit a description of its response actions to IDEM, OAQ no later than seventy-five (75) days after the date of the test.
- (b) A retest to demonstrate compliance shall be performed no later than one hundred eighty (180) days after the date of the test. Should the Permittee demonstrate to IDEM, OAQ that retesting in one hundred eighty (180) days is not practicable, IDEM, OAQ may extend the retesting deadline.
- (c) IDEM, OAQ reserves the authority to take any actions allowed under law in response to noncompliant stack tests.

The response action documents submitted pursuant to this condition do require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

C.15 Emission Statement [326 IAC 2-7-5(3)(C)(iii)][326 IAC 2-7-5(7)][326 IAC 2-7-19(c)][326 IAC 2-6]

Pursuant to 326 IAC 2-6-3(b)(3), starting in 2006 and every three (3) years thereafter, the Permittee shall submit by July 1 an emission statement covering the previous calendar year. The emission statement shall contain, at a minimum, the information specified in 326 IAC 2-6-4(c) and shall meet the following requirements:

- (1) Indicate estimated actual emissions of all pollutants listed in 326 IAC 2-6-4(a);
- (2) Indicate estimated actual emissions of regulated pollutants as defined by 326 IAC 2-7-1(33) ("Regulated pollutant, which is used only for purposes of Section 19 of this rule") from the source, for purpose of fee assessment.

The statement must be submitted to:

Indiana Department of Environmental Management
Technical Support and Modeling Section, Office of Air Quality
100 North Senate Avenue

MC 61-50 IGCN 1003
Indianapolis, Indiana 46204-2251

The emission statement does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

C.16 General Record Keeping Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-6]

- (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. Support information includes the following, where applicable:

- (AA) All calibration and maintenance records.
- (BB) All original strip chart recordings for continuous monitoring instrumentation.
- (CC) Copies of all reports required by the Part 70 permit.

Records of required monitoring information include the following, where applicable:

- (AA) The date, place, as defined in this permit, and time of sampling or measurements.
- (BB) The dates analyses were performed.
- (CC) The company or entity that performed the analyses.
- (DD) The analytical techniques or methods used.
- (EE) The results of such analyses.
- (FF) The operating conditions as existing at the time of sampling or measurement.

These records shall be physically present or electronically accessible at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.

- (b) Unless otherwise specified in this permit, for all record keeping requirements not already legally required, the Permittee shall be allowed up to ninety (90) days from the date of permit issuance or the date of initial start-up, whichever is later, to begin such record keeping.

C.17 General Reporting Requirements [326 IAC 2-7-5(3)(C)] [326 IAC 2-1.1-11]

- (a) The Permittee shall submit the attached Quarterly Deviation and Compliance Monitoring Report or its equivalent. Proper notice submittal under Section B –Emergency Provisions satisfies the reporting requirements of this paragraph. Any deviation from permit requirements, the date(s) of each deviation, the cause of the deviation, and the response steps taken must be reported except that a deviation required to be reported pursuant to an applicable requirement that exists independent of this permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report. This report shall be submitted not later than thirty (30) days after the end of the reporting period. The Quarterly Deviation and Compliance Monitoring Report shall include a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35). A deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit.

- (b) The address for report submittal is:

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

Indianapolis, Indiana 46204-2251

- (c) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.
- (d) Reporting periods are based on calendar years, unless otherwise specified in this permit. For the purpose of this permit "calendar year" means the twelve (12) month period from January 1 to December 31 inclusive.

Stratospheric Ozone Protection

C.18 Compliance with 40 CFR 82 and 326 IAC 22-1

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

SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

- (a) Two (2) Low Power Rating (<300 HP) Engine Test Cells, identified as TC19 and TC20, permitted in 2011, each with a maximum capacity of 13.4 gallons of fuel per hour. Each cell is capable of testing diesel and JP-8 fueled 4 stroke, lean burn, compression ignition, reciprocating internal combustion engines. Emissions are uncontrolled and exhaust to stacks S19 and S20.
- (b) Nine (9) Midrange Power Rating (<600 HP) Engine Test Cells, identified as TC5 through TC10, TC12, TC14, and TC15 permitted in 2011, each with a maximum capacity of 13.4 gallons of fuel per hour. Each cell is capable of testing diesel and JP-8 fueled 4 stroke, lean burn, compression ignition, reciprocating internal combustion engines. Emissions are uncontrolled and exhaust to stacks S5 through S10, S12, S14, and S15.
- (c) Three (3) High Power Rating (<1500 HP) Engine Test Cells, identified as TC16 through TC18, permitted in 2011, each with a maximum capacity of 20.0 gallons of fuel per hour. Each cell is capable of testing diesel and JP-8 fueled 4 stroke, lean burn, compression ignition, reciprocating internal combustion engines. Emissions are uncontrolled and exhaust to stacks S16 through S18.
- (d) Four (4) Midrange Power Rating (<600 HP) Engine Test Cells, identified as TC1 through TC4, permitted in 2012, each with a maximum capacity of 26.8 gallons of diesel or JP 8 fuel per hour or 1750 cu. ft. of Natural Gas per hour. Each cell is capable of testing diesel, JP-8, and Natural gas reciprocating internal combustion engines. Emissions are uncontrolled and exhaust to stacks S1 through S4.

(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 2-7-5(1)]

D.1.1 PSD Minor Limit [326 IAC 2-2]

In order to comply with the requirements of 326 IAC 2-2 (PSD), the source shall comply with the following:

- (a) The total NO_x emissions from the engine test cells, identified as TC1 through TC10, TC12, and TC14 through TC20, shall not exceed 245 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
- (b) The total CO emissions from the engine test cells, identified as TC1 through TC10, TC12, and TC14 through TC20, shall not exceed 245 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

Compliance with these limit, combined with the potential to emit NO_x and CO from all other emission units at this source, shall limit the source-wide total potential to emit of NO_x and CO to less than 250 tons per year, and shall render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), not applicable.

D.1.2 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan (PMP) is required for the engine test cells, identified as TC1 through TC10, TC12, and TC14 through TC20. Section B - Preventive Maintenance Plan contains the Permittee's obligations with regard to the preventive maintenance plan required by this condition.

Compliance Determination Requirements [326 IAC 2-7-6(1),(6)] [326 IAC 2-1.1-11]

D.1.3 Compliance Determination with PSD Minor limit

(a) Compliance with Condition D.1.1 (a) will be demonstrated as follows:

$$E = \frac{(EF_{d1} \times U_{d1}) + (EF_{d2} \times U_{d2}) + (EF_{jp} \times U_{jp}) + (U_{NG} \times HV_{NG} \times EF_{NG})}{2000 \text{ lb/ton}}$$

Where:

E = Total NO_x emissions, in tons/month.
U_{d1} = Total diesel fuel used in engines rated <600hp, in gallons/month.
U_{d2} = Total diesel fuel used in engines rated >600hp, in gallons/month.
U_{jp} = Total JP-8 fuel used, in gallons/month.
U_{NG} = Total Natural Gas fuel used, in mmscf/month
EF_{d1} = NO_x emission factor for diesel fuel used in engines rated <600hp, in lb/gallon.
EF_{d2} = NO_x emission factor for diesel fuel used in engines rated >600hp, in lb/gallon.
EF_{jp} = NO_x emission factor for JP-8 fuel used, in lb/gallon.
EF_{NG} = NO_x emission factor for NG, in lb/mmBtu.
HV_{NG} = Heating Value of Natural Gas, mmBtu/mmscf

(b) Compliance with Condition D.1.1 (b) will be demonstrated as follows:

$$E = \frac{(EF_{d1} \times U_{d1}) + (EF_{d2} \times U_{d2}) + (EF_{jp} \times U_{jp}) + (U_{NG} \times HV_{NG} \times EF_{NG})}{2000 \text{ lb/ton}}$$

Where:

E = Total CO emissions, in tons/month.
U_{d1} = Total diesel fuel used in engines rated <600hp, in gallons/month.
U_{d2} = Total diesel fuel used in engines rated >600hp, in gallons/month.
U_{jp} = Total JP-8 fuel used, in gallons/month.
U_{NG} = Total Natural Gas fuel used, in mmscf/month
EF_{d1} = CO emission factor for diesel fuel used in engines rated <600hp, in lb/gallon.
EF_{d2} = CO emission factor for diesel fuel used in engines rated >600hp, in lb/gallon.
EF_{jp} = CO emission factor for JP-8 fuel used, in lb/gallon.
EF_{NG} = CO emission factor for NG, in lb/mmBtu.
HV_{NG} = Heating Value of Natural Gas, mmBtu/mmscf

D.1.4 Testing Requirements [326 IAC 2-7-6(1),(6)] [326 IAC 2-1.1-11]

(a) In order to demonstrate compliance with the NO_x limitation in Condition D.1.1 (a) for engine test cells identified as TC1 through TC10, TC12, and TC14 through TC20, the Permittee shall perform NO_x testing of the engine test cells utilizing methods as approved by the Commissioner. These tests shall be repeated at least once every five years from the date of the most recent valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures).

Testing shall be conducted as follows:

- (1) Testing of both diesel and JP-8 fuel in one of the fifteen (15) engine test cells, identified as TC1 through TC10, TC12, TC14, TC15, TC19, and TC20 , rated at <600 hp;
- (2) Testing of both diesel and JP-8 fuel in one of the three (3) engine test cells, identified as TC16 through TC18, rated at >600 hp;
- (b) Within one hundred eighty (180) days of the issuance of permit No.T005-35853-00104, in order to demonstrate compliance with Condition D.1.1 (b), the Permittee shall perform CO testing on the test cells identified as TC1 through TC10, TC12, and TC14 through TC20) utilizing methods as approved by the Commissioner. These tests shall be repeated at least once every five years from the date of the most recent valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures).

Testing shall be conducted as follows:

- (1) Testing of both diesel and JP-8 fuel in one of the fifteen (15) engine test cells, identified as TC1 through TC10, TC12, TC14, TC15, TC19, and TC20 , rated at <600 hp;
- (2) Testing of both diesel and JP-8 fuel in one of the three (3) engine test cells, identified as TC16 through TC18, rated at >600 hp;
- (c) Section C - Performance Testing contains the Permittee's obligations with regard to the performance testing required by this condition.

Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

D.1.5 Visible Emissions Notations [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

-
- (a) Visible emission notations of the engine test cells stack exhaust (Stacks S1 through S10, S12, S14, and S15 through S20) shall be performed once per day during normal daylight operations, when operating on diesel oil. A trained employee shall record whether emissions are normal or abnormal.
 - (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, approximately eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
 - (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
 - (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
 - (e) If abnormal emissions are observed, the Permittee shall take reasonable response steps. Observation of abnormal emissions that do not violate an applicable opacity limit is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit. Section C – Response to Excursions or Exceedances contains the Permittee's obligations with regard to responding to the reasonable response steps required by this condition.

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.1.6 Record Keeping Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

- (a) In order to document the compliance status with Conditions D.1.1 (a), the Permittee shall maintain monthly records of the NO_x emissions from the engine test cells, identified as TC1 through TC10, TC12, and TC14 through TC20.
- (a) In order to document the compliance status with Conditions D.1.1 (b), the Permittee shall maintain monthly records of the CO emissions from the engine test cells, identified as TC1 through TC10, TC12, and TC14 through TC20.
- (c) To document the compliance status with Condition D.1.5, the Permittee shall maintain records of daily visible emission notations of the diesel internal combustion engine test cell stack exhausts. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g. the process did not operate that day).
- (c) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the record keeping required by this condition.

D.1.7 Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

A quarterly summary of the information to document the compliance status with Condition D.1.1 shall be submitted using the reporting form located at the end of this permit, or its equivalent, not later than thirty (30) days following the end of each calendar quarter. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34). Section C - General Reporting Requirements contains the Permittee's obligations with regard to the reporting required by this condition.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH
PART 70 OPERATING PERMIT
CERTIFICATION**

Source Name: Indiana Research Institute
Source Address: 1402 Hutchins Ave, Columbus, Indiana 47201
Part 70 Permit No.: T005-35853-00104

This certification shall be included when submitting monitoring, testing reports/results or other documents as required by this permit.

Please check what document is being certified:

- ☐ Annual Compliance Certification Letter
- ☐ Test Result (specify)
- ☐ Report (specify)
- ☐ Notification (specify)
- ☐ Affidavit (specify)
- ☐ Other (specify)

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

Signature:

Printed Name:

Title/Position:

Phone:

Date:

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251
Phone: (317) 233-0178
Fax: (317) 233-6865

PART 70 OPERATING PERMIT
EMERGENCY OCCURRENCE REPORT

Source Name: Indiana Research Institute
Source Address: 1402 Hutchins Ave, Columbus, Indiana 47201
Part 70 Permit No.: T005-35853-00104

This form consists of 2 pages

Page 1 of 2

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

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

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

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

Page 2 of 2

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

Form Completed by: _____

Title / Position: _____

Date: _____

Phone: _____

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

Part 70 Quarterly Report

Source Name: Indiana Research Institute
Source Address: 1402 Hutchins Ave, Columbus, Indiana 47201
Part 70 Permit No.: T005-35853-00104
Facility: TC1 through TC10, TC12, and TC14 through TC20
Parameter: NOx
Limit: Total NOx emissions shall not exceed 245 tons per twelve (12) consecutive month period, with compliance determined at the end of each month

QUARTER :

YEAR:

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

☐ No deviation occurred in this quarter.

☐ Deviation/s occurred in this quarter.

Deviation has been reported on:

Submitted by: _____

Title / Position: _____

Signature: _____

Date: _____

Phone: _____

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

Part 70 Quarterly Report

Source Name: Indiana Research Institute
Source Address: 1402 Hutchins Ave, Columbus, Indiana 47201
Part 70 Permit No.: T005-35853-00104
Facility: TC1 through TC10, TC12, and TC14 through TC20
Parameter: CO
Limit: Total CO emissions shall not exceed 245 tons per twelve (12) consecutive month period, with compliance determined at the end of each month

QUARTER :

YEAR:

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

☐ No deviation occurred in this quarter.

☐ Deviation/s occurred in this quarter.

Deviation has been reported on:

Submitted by: _____

Title / Position: _____

Signature: _____

Date: _____

Phone: _____

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH
PART 70 OPERATING PERMIT
QUARTERLY DEVIATION AND COMPLIANCE MONITORING REPORT**

Source Name: Indiana Research Institute
Source Address: 1402 Hutchins Ave, Columbus, Indiana 47201
Part 70 Permit No.: T005-35853-00104

Months: _____ to _____ Year: _____

Page 1 of 2

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

☐ NO DEVIATIONS OCCURRED THIS REPORTING PERIOD.

☐ THE FOLLOWING DEVIATIONS OCCURRED THIS REPORTING PERIOD

Permit Requirement (specify permit condition #)

Date of Deviation:

Duration of Deviation:

Number of Deviations:

Probable Cause of Deviation:

Response Steps Taken:

Permit Requirement (specify permit condition #)

Date of Deviation:

Duration of Deviation:

Number of Deviations:

Probable Cause of Deviation:

Response Steps Taken:

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

Form Completed by: _____

Title / Position: _____

Date: _____

Phone: _____

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

Technical Support Document (TSD) for a Part 70 Operating Permit Renewal

Source Background and Description
--

Source Name: Source Location: County: SIC Code: Permit Renewal No.: Permit Reviewer:	Indiana Research Institute 1402 Hutchins Ave., Columbus, IN 47201 Bartholomew 8734 (Testing Laboratories) T 005-35853-00104 Anh Nguyen
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The Office of Air Quality (OAQ) has reviewed the operating permit renewal application from Indiana Research Institute relating to the operation of a testing laboratory. On May 22, 2015 Indiana Research Institute submitted an application to the OAQ requesting to renew its operating permit. Indiana Research Institute was issued its first Part 70 Operating Permit Renewal T 005-30139-00104 on June 8, 2011.

Source Definition

This stationary internal combustion engine manufacturing facility consists of two (2) plants:

- (1) Plant 1, Indiana Research Institute (IRI), 005-00104, is located at 1402 Hutchins Avenue, Columbus, Indiana; and
- (2) Plant 2, Cummins Technical Center (Cummins TC), 005-00002, is located at 1900 McKinley Avenue, Columbus, Indiana.

In order to consider the plants as one major source, all three of the following criteria must be met:

- (1) The plants must have common ownership or common control;
- (2) The plants must have the same two digit SIC code or a support relationship; and
- (3) The plants must be located on contiguous or adjacent properties.

IDEM has determined that Cummins Technical Center (Cummins TC), 005-00002, located at 1900 McKinley Avenue, Columbus, Indiana, and Indiana Research Institute (IRI), 005-00104, located at 1402 Hutchins Avenue, Columbus, Indiana, will be considered two (2) sources as defined by 326 IAC 2-7-1(22) because the plants are not under common ownership or common control, neither plant serves as a support facility for the other; and the plants are not located on contiguous or adjacent properties. Therefore, based on this evaluation these plants are still not considered one (1) major source, as defined by 326 IAC 2-7-1(22). This conclusion was initially determined under Part 70 Operating Permit Renewal T005-30139-00104 on June 8, 2011.

Permitted Emission Units and Pollution Control Equipment

The source consists of the following permitted emission units:

- (a) Two (2) Low Power Rating (<300 HP) Engine Test Cells, identified as TC19 and TC20, constructed in 2011, each with a maximum capacity of 13.4 gallons of fuel per hour. Each cell is capable of testing diesel and JP-8 fueled 4 stroke, lean burn, compression ignition, reciprocating internal combustion engines. Emissions are uncontrolled and exhaust to stacks S19 and S20.

- (b) Nine (9) Midrange Power Rating (<600 HP) Engine Test Cells, identified as TC5 through TC10, TC12, TC14, and TC15 constructed in 2011, each with a maximum capacity of 26.8 gallons of fuel per hour. Each cell is capable of testing diesel and JP-8 fueled 4 stroke, lean burn, compression ignition, reciprocating internal combustion engines. Emissions are uncontrolled and exhaust to stacks S5 through S10, S12, S14, and S15.
- (c) Three (3) High Power Rating (<1500 HP) Engine Test Cells, identified as TC16 through TC18, constructed in 2011, each with a maximum capacity of 36.5 gallons of fuel per hour. Each cell is capable of testing diesel and JP-8 fueled 4 stroke, lean burn, compression ignition, reciprocating internal combustion engines. Emissions are uncontrolled and exhaust to stacks S16 through S18.
- (d) Four (4) Midrange Power Rating (<600 HP) Engine Test Cells, identified as TC1 through TC4, permitted in 2012, each with a maximum capacity of 26.8 gallons of diesel or JP 8 fuel per hour or 1750 cu. ft. of Natural Gas per hour. Each cell is capable of testing diesel, JP-8, and Natural gas reciprocating internal combustion engines. Emissions are uncontrolled and exhaust to stacks S1 through S4.

Insignificant Activities

The source also consists of the following insignificant activities:

- (a) One (1) paint booth, identified as P1, permitted in 2011, with a maximum capacity of 3.0 engines per day. Emissions are uncontrolled and exhaust to stack PH.
- (b) Closed loop heating and cooling systems.
- (c) Activities associated with the treatment of wastewater streams with an oil and grease content less than or equal to one percent (1%) by volume.
- (d) Noncontact cooling tower systems with forced and induced draft cooling tower systems not regulated under a NESHAP.
- (e) Blowdown for compressors and cooling tower.
- (f) Emissions from a laboratory as defined in 326 IAC 2-7-1(21)(F).

Existing Approvals

Since the issuance of the Part 70 Operating Permit 005-30139-00104 on June 8, 2011, the source has constructed or has been operating under the following additional approvals:

- (a) Significant Source Modification No.005-32257-00104, issued on December 14, 2012; and
- (b) Significant Permit Modification No. 005-32324-00104, issued on January 3, 2013; and
- (c) Administrative Amendment No. 005-34528-00101, issued on June 6, 2014.

All terms and conditions of previous permits issued pursuant to permitting programs approved into the State Implementation Plan have been either incorporated as originally stated, revised, or deleted by this permit. All previous registrations and permits are superseded by this permit.

Enforcement Issue

There are no enforcement actions pending.

Emission Calculations

See Appendix A of this document for detailed emission calculations.

County Attainment Status

The source is located in Bartholomew County.

Pollutant	Designation
SO ₂	Better than national standards.
CO	Unclassifiable or attainment effective November 15, 1990.
O ₃	Unclassifiable or attainment effective July 20, 2012, for the 2008 8-hour ozone standard. ¹
PM ₁₀	Unclassifiable effective November 15, 1990.
PM _{2.5}	Unclassifiable or attainment effective April 5, 2005, for the annual PM _{2.5} standard.
PM _{2.5}	Unclassifiable or attainment effective December 13, 2009, for the 24-hour PM _{2.5} standard.
NO ₂	Cannot be classified or better than national standards.
Pb	Unclassifiable or attainment effective December 31, 2011.
¹ Unclassifiable or attainment effective October 18, 2000, for the 1-hour ozone standard which was revoked effective June 15, 2005.	

- (a) Ozone Standards
Volatile organic compounds (VOC) 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. Bartholomew County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NO_x emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.
- (b) PM_{2.5}
Bartholomew County has been classified as attainment for PM_{2.5}. Therefore, direct PM_{2.5}, SO₂, and NO_x emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.
- (c) Other Criteria Pollutants
Bartholomew County has been classified as attainment or unclassifiable in Indiana for PM₁₀, CO, SO₂, NO_x, Pb. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

Fugitive Emissions

Since this type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2, 326 IAC 2-3, or 326 IAC 2-7, and there is no applicable New Source Performance Standard that was in effect on August 7, 1980, fugitive emissions are not counted toward the determination of PSD, Emission Offset, and Part 70 Permit applicability.

Unrestricted Potential Emissions

This table reflects the unrestricted potential emissions of the source.

Unrestricted Potential Emissions	
Pollutant	Tons/year
PM	74.76
PM ₁₀	73.44
PM _{2.5}	73.44
SO ₂	98.47
NO _x	1,117.72
VOC	87.35
CO	269.74
Single HAP (Formaldehyde)	4.33
Total HAP	6.33

Appendix A of this TSD reflects the unrestricted potential emissions of the source.

On June 23, 2014, in the case of *Utility Air Regulatory Group v. EPA*, cause no. 12-1146, (available at http://www.supremecourt.gov/opinions/13pdf/12-1146_4g18.pdf) the United States Supreme Court ruled that the U.S. EPA does not have the authority to treat greenhouse gases (GHGs) as an air pollutant for the purpose of determining operating permit applicability or PSD Major source status. On July 24, 2014, the U.S. EPA issued a memorandum to the Regional Administrators outlining next steps in permitting decisions in light of the Supreme Court's decision. U.S. EPA's guidance states that U.S. EPA will no longer require PSD or Title V permits for sources "previously classified as 'Major' based solely on greenhouse gas emissions."

The Indiana Environmental Rules Board adopted the GHG regulations required by U.S. EPA at 326 IAC 2-2-1(zz), pursuant to Ind. Code § 13-14-9-8(h) (Section 8 rulemaking). A rule, or part of a rule, adopted under Section 8 is automatically invalidated when the corresponding federal rule, or part of the rule, is invalidated. Due to the United States Supreme Court Ruling, IDEM, OAQ cannot consider GHGs emissions to determine operating permit applicability or PSD applicability to a source or modification.

- (a) The potential to emit (as defined in 326 IAC 2-7-1(30)) of NO_x and CO is equal to or greater than 100 tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-7 and will be issued a Part 70 Operating Permit Renewal.

Actual Emissions

The following table shows the actual emissions as reported by the source. This information reflects the 2014 OAQ emission data.

Pollutant	Actual Emissions (tons/year)
PM	not reported
PM ₁₀	not reported
SO ₂	1
NO _x	1
VOC	0
CO	1
HAP (specify)	not reported

Part 70 Permit Conditions

This source is subject to the requirements of 326 IAC 2-7, because the source met the following:

- (a) Emission limitations and standards, including those operational requirements and limitations that assure compliance with all applicable requirements at the time of issuance of Part 70 permits.
- (b) Monitoring and related record keeping requirements which assume that all reasonable information is provided to evaluate continuous compliance with the applicable requirements.

Potential to Emit After Issuance

The table below summarizes the potential to emit, reflecting all limits, of the emission units. Any new control equipment is considered federally enforceable only after issuance of this Part 70 permit renewal, and only to the extent that the effect of the control equipment is made practically enforceable in the permit.

Process/ Emission Unit	Potential To Emit of the Entire Source After Issuance of Renewal (tons/year)								
	PM	PM ₁₀ *	PM _{2.5} *	SO ₂	NO _x	VOC	CO	Total HAPs	Worst Single HAP
Engine Test Cells (TC19 - TC20)	4.99	4.99	4.99	4.66	245	5.79	245	0.06	0.02 Formaldehyde
Engine Test Cells (TC5- TC10, TC12, TC14, TC15)	44.87	44.87	44.87	41.97		52.10		0.55	0.17 Formaldehyde
Engine Test Cells (TC16 - TC18)	4.58	3.26	3.26	33.18		5.91		0.24	0.08 Formaldehyde
Engine Test Cells (TC1 - TC4)	19.94	19.94	19.94	18.65		23.16		5.70	4.06 Formaldehyde
Paint Booth (P1)	0.39	0.39	0.39	0.00	0.00	0.39	0.0	0.0023	0.00
Total Limited PTE	74.76	73.44	73.44	98.47	245	87.35	245	6.55	4.33
Title V Major Source Thresholds	NA	100	100	100	100	100	100	25	10
PSD Major Source Thresholds	250	250	250	250	250	250	250	NA	NA
negl. = negligible * Under the Part 70 Permit program (40 CFR 70), PM ₁₀ and PM _{2.5} , not particulate matter (PM), are each considered as a regulated air pollutant". **PM _{2.5} listed is direct PM _{2.5} .									

On June 23, 2014, in the case of *Utility Air Regulatory Group v. EPA*, cause no. 12-1146, (available at http://www.supremecourt.gov/opinions/13pdf/12-1146_4q18.pdf) the United States Supreme Court ruled that the U.S. EPA does not have the authority to treat greenhouse gases (GHGs) as an air pollutant for the purpose of determining operating permit applicability or PSD Major source status. On July 24, 2014, the U.S. EPA issued a memorandum to the Regional Administrators outlining next steps in permitting decisions in light of the Supreme Court's decision. U.S. EPA's guidance states that U.S. EPA will no longer require PSD or Title V permits for sources "previously classified as 'Major' based solely on greenhouse gas emissions."

The Indiana Environmental Rules Board adopted the GHG regulations required by U.S. EPA at 326 IAC 2-2-1(zz), pursuant to Ind. Code § 13-14-9-8(h) (Section 8 rulemaking). A rule or part of a rule, adopted under Section 8 is automatically invalidated when the corresponding federal rule, or part of the rule, is invalidated. Due to the United States Supreme Court Ruling, IDEM, OAQ cannot consider GHGs emissions to determine operating permit applicability or PSD applicability to a source or modification.

- (a) This existing source is not a major stationary source, under PSD (326 IAC 2-2), because no PSD regulated pollutant is emitted at a rate of two hundred fifty (250) tons per year or more and it is not one of the twenty-eight (28) listed source categories, as specified in 326 IAC 2-2-1(ff)(1).
- (b) This existing source is not a major source of HAPs, as defined in 40 CFR 63.2, because HAPs emissions are less than ten (10) tons per year for any single HAP and less than

twenty-five (25) tons per year of a combination of HAPs. Therefore, this source is an area source under Section 112 of the Clean Air Act (CAA).

Federal Rule Applicability

CAM [40 CFR 64]

- (a) Pursuant to 40 CFR 64.2, Compliance Assurance Monitoring (CAM) is applicable to each existing pollutant-specific emission unit that meets the following criteria:
- (1) has a potential to emit before controls equal to or greater than the major source threshold for the pollutant involved;
 - (2) is subject to an emission limitation or standard for that pollutant; and
 - (3) uses a control device, as defined in 40 CFR 64.1, to comply with that emission limitation or standard.

The unrestricted potential to emit CO, NOX, PM, PM10, SO2, and VOC, is less than the major source threshold of one hundred (100) tons per year, from each of the engine test cells, identified as TC1 through TC10, TC12, and TC14 through TC20 (18 engine test cells); therefore, the requirements of 40 CFR Part 64, CAM, are not applicable to the 18 engine test cells, for CO, NOX, PM, PM10, SO2, and VOC.

The unrestricted potential to emit PM, PM10, and VOC, is less than the major source threshold of one hundred (100) tons per year, from the paint booth, identified as P1; therefore, the requirements of 40 CFR Part 64, CAM, are not applicable to the paint booth, identified as P1, for PM, PM10, and VOC.

The unrestricted potential to emit single HAP is less than the major source threshold of ten (10) tons per year, and the unrestricted potential to emit combined HAPs is less than the major source threshold of twenty-five (25) tons per year, from the engine test cells, identified as TC1 through TC10, TC12, and TC14 through TC20 (18 engine test cells); and the paint booth, identified as P1; therefore, the requirements of 40 CFR Part 64, CAM, are not applicable to the 18 engine test cells; and the paint booth, identified as P1, for single HAP and combined HAPs.

Based on this evaluation, the requirements of 40 CFR Part 64, CAM are not applicable to any of the existing units as part of this Part 70 permit renewal.

New Source Performance Standards (NSPS) [326 IAC 12 and 40 CFR Part 60]

- (b) Pursuant to 40 CFR Part 60.4200 (b), the provisions of the Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (40 CFR Part 60, Subpart IIII) are not applicable to stationary compression ignition internal combustion engines (CI ICE) that are being tested at a stationary CI ICE test cells/stands.
- (c) The provisions of the Standards of Performance for Stationary Spark Ignition Internal Combustion Engines (40 CFR Part 60, Subpart JJJJ) are not applicable to engine test cells, identified TC1 through TC10, TC12, and TC14 through TC20 because these test cells do not perform testing on spark ignition internal combustion engines.
- (d) There are no New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60) included in the permit for this source.

National Emission Standards for Hazardous Air Pollutants (NESHAP) [326 IAC 14, 326 IAC 20 and 40 CFR Part 63]

- (e) Pursuant to 40 CFR Part 63.6585, the provisions of the National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines (40 CFR Part 63, Subpart ZZZZ) are not applicable to stationary compression ignition internal combustion engines that are being tested in the engine test cells/stands.
- (f) Pursuant to 40 CFR Part 63.9285, the provisions of the National Emission Standards for Hazardous Air Pollutants for Engine Test Cells / Stands (40 CFR Part 63, Subpart PPPPP) are not applicable to the engine test cells, identified as TC1 through TC10, TC12, and TC14 through TC20, because Indiana Research Institute is not a major source of emissions of HAP.
- (g) There are no other National Emission Standards for Hazardous Air Pollutants (NESHAP) (326 IAC 14, 326 IAC 20 and 40 CFR Part 63) included in this permit renewal.

State Rule Applicability - Entire Source

326 IAC 1-6-3 (Preventive Maintenance Plan)

The source is subject to 326 IAC 1-6-3.

326 IAC 1-5-2 (Emergency Reduction Plans)

The source is subject to 326 IAC 1-5-2.

326 IAC 2-2 (PSD)

The unrestricted potential to emit of this source is greater than two hundred fifty (250) tons of NO_x per year; this source has elected to limit the potential to emit. In order to comply with the requirements of 326 IAC 2-2 (PSD), the source shall comply with the following:

- (a) The total NO_x emissions from the engine test cells, identified as TC1 through TC10, TC12, and TC14 through TC20, shall not exceed 245 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
- (b) The total CO emissions from the engine test cells, identified as TC1 through TC10, TC12, and TC14 through TC20, shall not exceed 245 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

Compliance with these limits, combined with the potential to emit NO_x and CO from all other emission units at this source, shall limit the source-wide total potential to emit of NO_x and CO, to less than 250 tons per year, and shall render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), not applicable.

- (c) Compliance with the above limit of NO_x will be demonstrated as follows:

$$E = \frac{(EF_{d1} \times U_{d1}) + (EF_{d2} \times U_{d2}) + (EF_{jp} \times U_{jp}) + (U_{NG} \times HV_{NG} \times EF_{NG})}{2000 \text{ lb/ton}}$$

Where:

- E = Total NO_x emissions, in tons/month.
- U_{d1} = Total diesel fuel used in engines rated <600hp, in gallons/month.
- U_{d2} = Total diesel fuel used in engines rated >600hp, in gallons/month.
- U_{jp} = Total JP-8 fuel used, in gallons/month.
- U_{NG} = Total Natural Gas fuel used, in mmscf/month
- EF_{d1} = NO_x emission factor for diesel fuel used in engines rated <600hp, in lb/gallon.
- EF_{d2} = NO_x emission factor for diesel fuel used in engines rated >600hp, in lb/gallon.
- EF_{jp} = NO_x emission factor for JP-8 fuel used, in lb/gallon.

EF_{NG} = NOx emission factor for NG, in lb/mmBtu.
 HV_{NG} = Heating Value of Natural Gas, mmBtu/mmscf

(d) Compliance with the above limit of CO will be demonstrated as follows:

$$E = \frac{(EF_{d1} \times U_{d1}) + (EF_{d2} \times U_{d2}) + (EF_{jp} \times U_{jp}) + (U_{NG} \times HV_{NG} \times EF_{NG})}{2000 \text{ lb/ton}}$$

Where:

E = Total CO emissions, in tons/month.
 U_{d1} = Total diesel fuel used in engines rated <600hp, in gallons/month.
 U_{d2} = Total diesel fuel used in engines rated >600hp, in gallons/month.
 U_{jp} = Total JP-8 fuel used, in gallons/month.
 U_{NG} = Total Natural Gas fuel used, in mmscf/month
 EF_{d1} = CO emission factor for diesel fuel used in engines rated <600hp, in lb/gallon.
 EF_{d2} = CO emission factor for diesel fuel used in engines rated >600hp, in lb/gallon.
 EF_{jp} = CO emission factor for JP-8 fuel used, in lb/gallon.
 EF_{NG} = CO emission factor for NG, in lb/mmBtu.
 HV_{NG} = Heating Value of Natural Gas, mmBtu/mmscf

326 IAC 2-6 (Emission Reporting)

This source, not located in Lake, Porter, or LaPorte County, is subject to 326 IAC 2-6 (Emission Reporting) because it is required to have an operating permit pursuant to 326 IAC 2-7 (Part 70). The potential to emit of VOC and PM10 is less than 250 tons per year; and the potential to emit of CO, NOx, and SO2 is less than 2,500 tons per year. Therefore, pursuant to 326 IAC 2-6-3(a)(2), triennial reporting is required. An emission statement shall be submitted in accordance with the compliance schedule in 326 IAC 2-6-3 every three (3) years. The emission statement shall contain, at a minimum, the information specified in 326 IAC 2-6-4.

326 IAC 2-7-6(5) (Annual Compliance Certification)

The U.S. EPA Federal Register 79 FR 54978 notice does not exempt Title V Permittees from the requirements of 40 CFR 70.6(c)(5)(iv) or 326 IAC 2-7-6(5)(D), but the submittal of the Title V annual compliance certification to IDEM satisfies the requirement to submit the Title V annual compliance certifications to EPA. IDEM does not intend to revise any permits since the requirements of 40 CFR 70.6(c)(5)(iv) or 326 IAC 2-7-6(5)(D) still apply, but Permittees can note on their Title V annual compliance certification that submission to IDEM has satisfied reporting to EPA per Federal Register 79 FR 54978. This only applies to Title V Permittees and Title V compliance certifications.

326 IAC 5-1 (Opacity Limitations)

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

326 IAC 6-4 (Fugitive Dust Emissions)

Pursuant to 326 IAC 6-4 (Fugitive Dust Emissions), the Permittee shall be in violation of 326 IAC 6-4 (Fugitive Dust Emissions) if any of the criteria specified in 326 IAC 6-4-2(1) through (4) are violated pursuant to 326 IAC 6-4-5(c). Observations of visible emissions crossing the property line of the source at or near ground level must be made by a qualified representative of IDEM.

326 IAC 6.5 PM Limitations Except Lake County

This source is not subject to 326 IAC 6.5 because it is not located in one of the following counties: Clark, Dearborn, Dubois, Howard, Marion, St. Joseph, Vanderburgh, Vigo or Wayne.

326 IAC 6.8 PM Limitations for Lake County

This source is not subject to 326 IAC 6.5 because it is not located in Lake County.

326 IAC 9 (Carbon Monoxide Emission Limits)

Pursuant to 326 IAC 9 (Carbon Monoxide Emission Limits), the source is not subject to this rule because no CO emission limits have been established pursuant to 326 IAC 2.

State Rule Applicability – Individual Facilities

326 IAC 8-1-6 (New facilities; general reduction requirements)

All test cells have potential VOC emissions less than twenty five (25) tons per year, therefore, 326 IAC 8-1-6 requirements do not apply.

326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))

- (a) The operation of the engine test cells, identified as TC1 through TC10, TC12, TC14 through TC20 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.
- (b) The operation of the Paint Booth, P1, 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 6-2 (Particulate Emissions Limitations for Source of Indirect Heating)

None of the engine test cells are subject to 326 IAC 6-2 because the engine test cells are internal combustion sources and not sources of indirect heating

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)

- (a) The engine test cells are manufacturing processes. However, they are not subject to this rule because the engines use only gaseous and liquid fuel. Therefore, they are not subject to 6-3-2.
- (b) The paint booth, P1, is not subject to 326 IAC 6-3-2 because the paint booth uses less than five (5) gallons of coating per day.

326 IAC 7-1.1 (Sulfur Dioxide Emission Limits)

When operating with diesel, alternate fuel JP8 and natural gas fuel, none of the test cell engines identified as TC1 through TC10, TC12, and TC14 through TC20 have the potential to emit of twenty five (25) tons per year or ten (10) pounds per hour or greater of SO₂. Therefore, the requirements of 326 IAC 7-1.1 do not apply to any of these facilities.

Paint Booth, P1

326 IAC 8-1 (Volatile Organic Compound Rules)

The requirements of 326 IAC 8-1-1(b) (Volatile Organic Compound Rules) are not applicable to the paint booth, P1, because VOC emissions are less than fifteen (15) pounds per day before control.

326 IAC 8-2-9 (Miscellaneous Metal Coating)

The paint booth (P1) will emit less than fifteen (15) pounds of VOC per day. Therefore, the requirements of 326 IAC 8-2-9 do not apply.

326 IAC 10-1 (NO_x Control In Clark and Floyd Counties)

Since this source is not in Clark or Floyd counties, the requirements of 326 IAC 10-1 do not apply.

Compliance Determination and Monitoring Requirements

Permits issued under 326 IAC 2-7 are required to ensure that sources can demonstrate compliance with all applicable state and federal rules on a continuous basis. All state and federal rules contain compliance provisions; however, these provisions do not always fulfill the requirement for a continuous demonstration. When this occurs, IDEM, OAQ, in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-7-5. As a result, Compliance Determination Requirements are included in the permit. The Compliance Determination Requirements in Section D of the permit are those conditions that are found directly within state and federal rules and the violation of which serves as grounds for enforcement action.

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

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

Emission Unit	Control Device	Timeframe for Testing	Fuel	Pollutant	Frequency of Testing	Basis for Requirement
one of the following: TC1 through TC10, TC12, TC14, TC15, TC19 and TC20 rated at <600 HP	none	within 180 days of issuance of Permit No.T005-35853-00104	Diesel	CO	every 5 years	326 IAC 2-2 PSD Minor Limit
			JP-8			
one of the following: TC16 through TC18 rated at >600 HP	none	within 180 days of issuance of Permit No.T005-35853-00104	Diesel	CO	every 5 years	326 IAC 2-2 PSD Minor Limit
			JP-8			

Emission Unit	Control Device	Fuel	Pollutant	Frequency of Testing	Basis for Requirement
one of the following: TC1 through TC10, TC12, TC14, TC15, TC19 and TC20 rated at <600 HP	none	Diesel	NO _x	every 5 years	326 IAC 2-2 PSD Minor Limit
		JP-8			
one of the following: TC16 through TC18 rated at >600 HP	none	Diesel	NO _x	every 5 years	326 IAC 2-2 PSD Minor Limit
		JP-8			

The Compliance Monitoring Requirements applicable to this modification are as follows:

Emission Unit	Parameter	Frequency	Range	Excursions and Exceedances
engine test cells stack exhaust S1 through S10, S12, S14, and S15 through S20 while burning diesel fuel	Visible Emissions	Daily	Normal-Abnormal	Response Steps

These monitoring conditions are necessary to ensure compliance with 326 IAC 5-1 (Opacity Limitations)

Recommendation

The staff recommends to the Commissioner that the Part 70 Operating Permit Renewal 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 May 22, 2015

Conclusion

The operation of this stationary internal combustion engine manufacturing facility shall be subject to the conditions of the attached Part 70 Operating Permit Renewal No. T005-35853-00104.

IDEM Contact

- (a) Questions regarding this proposed permit can be directed to Anh Nguyen at the Indiana Department Environmental Management, Office of Air Quality, Permits Branch, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana 46204-2251 or by telephone at (317) 233-5334 or toll free at 1-800-451-6027 extension 5-5334.
- (b) A copy of the findings is available on the Internet at: <http://www.in.gov/ai/appfiles/idem-caats/>
- (c) For additional information about air permits and how the public and interested parties can participate, refer to the IDEM Permit Guide on the Internet at: <http://www.in.gov/idem/5881.htm>; and the Citizens' Guide to IDEM on the Internet at: <http://www.in.gov/idem/6900.htm>.

Appendix A – Emission Calculations
 Technical Support Document (TSD)
Summary of Emissions

Company Name: Indiana Research Institute
 Address City IN Zip: 1402 Hutchins Avenue, Columbus, IN 47201
 County: Bartholomew
 SIC : 8734 (Testing Laboratories)
 Permit No.: T 005-35853-00104
 Plant ID: 005-00104
 Permit Reviewer: Anh Nguyen
 Date: May 22,2015

Process / Emission Unit	Uncontrolled Potential To Emit (ton/yr)									
	PM	PM ₁₀	PM _{2.5}	SO ₂	NO _x	VOC	CO	Total HAPs	Single HAP	
Engine Test Cells (TC19 - TC20)	4.99	4.99	4.99	4.66	70.92	5.79	15.28	0.06	0.02	formaldehyde
Engine Test Cells (TC5- TC10, TC12,TC14, TC15)	44.87	44.87	44.87	41.97	638.28	52.10	137.50	0.55	0.17	formaldehyde
Engine Test Cells (TC16 - TC18)	4.58	3.26	3.26	33.18	124.84	5.91	55.85	0.24	0.08	formaldehyde
Engine Test Cells (TC1 - TC4)	19.94	19.94	19.94	18.65	283.68	23.16	61.11	2.42	1.73	formaldehyde
Paint Booth (P1)	0.39	0.39	0.39	0	0	0.39	0	1.93E-04	0.00	
Total Uncontrolled PTE	74.76	73.44	73.44	98.47	1,117.72	87.35	269.74	3.28	1.99	

The worst case emissions are shown. For most pollutants, the worst case emissions result from combustion of diesel fuel; however 1, 3 butadiene is only emitted when JP-8 is the fuel. Refer to the following pages to see the analysis for each unit using either fuel.

Process / Emission Unit	Limited Potential To Emit (ton/yr)									
	PM	PM ₁₀	PM _{2.5}	SO ₂	NO _x	VOC	CO	Total HAPs	Single HAP	
Engine Test Cells (TC19 - TC20)	4.99	4.99	4.99	4.66	245	5.79	245	0.06	0.02	formaldehyde
Engine Test Cells (TC5- TC10, TC12,TC14, TC15)	44.87	44.87	44.87	41.97		52.10		0.55	0.17	formaldehyde
Engine Test Cells (TC16 - TC18)	4.58	3.26	3.26	33.18		5.91		0.24	0.08	formaldehyde
#REF!	19.94	19.94	19.94	18.65		23.16		2.42	1.73	formaldehyde
Paint Booth (P1)	0.39	0.39	0.39	0.00	0.00	0.39	0	0.0002	0.00	
Total Limited PTE	74.76	73.44	73.44	98.47	245	87.35	245	3.28	1.99	

Engine Test Cells
for Reciprocating Internal Combustion Engines
4 Stroke, Lean Burn, Compression Ignition

TC5-TC20

Alternate Fuel -- JP-8

Company Name: Indiana Research Institute
Address City IN Zip: 1402 Hutchins Avenue, Columbus, IN 47201
County: Bartholomew
SIC : 8734 (Testing Laboratories)
Permit No.: T 005-35853-00104
Plant ID: 005-00104
Permit Reviewer: Anh Nguyen
Date: May 22, 2015

Engine Test Cells	TC19 and TC20	(TC5- TC10, TC12, TC14, TC15)	TC16 - TC18	Total
Power Range (HP)	<300	<600	<1500	
No. of Test Cells	2	9	3	14
JP-8 Usage (gal/hr) per test cell	13.40	26.80	36.50	
Maximum Hours Operated per Year	8760	8760	8760	
Total Heat Input Capacity (MMBtu/hr)	3.62	32.56	14.78	
Potential Throughput (MMBtu/yr)	31,694	285,243	129,495	
Maximum Throughput (gal/yr)	234,768	2,112,912	959,220	3,306,900
Sulfur Content (S) of Fuel (% by weight)	0.5	0.5	0.5	

	Pollutant						
	PM	PM ₁₀	PM _{2.5}	SO ₂	NO _x	VOC	CO
Emission Factor in lb/MMBtu	0.0425	0.0425	0.0425	0.0397	0.604	0.0493	0.13
Emission Factor in lb/gal of JP-8					0.082		
Uncontrolled Emissions (tons/yr)							
Engine Test Cells (TC19 - TC20)	0.67	0.67	0.67	0.63	9.57	0.78	2.06
Engine Test Cells (TC5- TC10, TC12, TC14, TC15)	6.06	6.06	6.06	5.66	86.14	7.03	18.54
Engine Test Cells (TC16 - TC18)	2.75	2.75	2.75	2.57	39.11	3.19	8.42
TOTAL (tons/yr)	9.49	9.49	9.49	8.86	134.82	11.00	29.02

PSD Minor Limit for NO_x (ton/yr) 245.00

	Hazardous Air Pollutants (HAPs)							
	Benzene	Toluene	Xylene	Formaldehyde	Acetaldehyde	Acrolein	1,3 Butadiene	TOTAL
Emission Factor in lb/MMBtu	9.33E-04	4.09E-04	2.85E-04	1.18E-03	7.67E-04	9.25E-05	3.91E-05	
Uncontrolled Emissions (tons/yr)								
Engine Test Cells (TC19 - TC20)	0.0148	0.0065	0.0045	0.0187	0.0122	0.0015	0.0006	0.0587
Engine Test Cells (TC5- TC10, TC12, TC14, TC15)	0.1331	0.0583	0.0406	0.1683	0.1094	0.0132	0.0056	0.5285
Engine Test Cells (TC16 - TC18)	0.0604	0.0265	0.0185	0.0764	0.0497	0.0060	0.0025	0.2399
TOTAL (tons/yr)	0.2083	0.0913	0.0636	0.2634	0.1712	0.0206	0.0087	0.8271

Methodology

Emission factors for JP-8 adapted from "Emissions from a 6.5 HMMWV Engine on Low Sulfur Diesel Fuel and JP-8", Tables: 2, 2A, and 4. (Interim report TFLRF No. 376 / DAAE-07-99-C-L053 (WD-11))

Fuel Heating Value = 135,000 Btu/gal JP-8
Conversion of HP to MMBtu/hr = 0.0025425 MMBtu/hr / HP

Total Heat Input Capacity (MMBtu/hr) = JP-8 Usage (gal/hr) per test cell x No. of cells x Fuel Heating Value (MMBtu/gal)
Potential Throughput (MMBtu/yr) = Total Heat Input Capacity (MMBtu/hr) x 8760 hr/yr
Maximum Throughput (gal/yr) = Potential Throughput (MMBtu/yr) / Fuel Heating Value (MMBtu/gal)
Potential Throughput (MMBtu/yr) = [Heat Input Capacity (MMBtu/hr)] * [Maximum Hours Operated per Year]
Potential Emission (tons/yr) = [Potential Throughput (MMBtu/yr)] * [Emission Factor (lb/MMBtu)] / [2,000 lb/ton]

Fuel Equivalency

JP-8 Usage (gal/yr) x 0.985 gal diesel / gal JP-8 + Diesel Usage (gal/yr) < 245 ton/yr

Engine Test Cells
for Reciprocating Internal Combustion Engines
4 Stroke, Lean Burn, Compression Ignition

TC1-TC4

Alternate Fuel -- JP-8

Company Name: Indiana Research Institute
Address City IN Zip: 1402 Hutchins Avenue, Columbus, IN 47201
County: Bartholomew
SIC : 8734 (Testing Laboratories)
Permit No.: T 005-35853-00104
Plant ID: 005-00104
Permit Reviewer: Anh Nguyen
Date: May 22, 2015

Engine Test Cells	TC1 - TC4	Total
Power Range (HP)	<600	
No. of Test Cells	4	4
JP-8 Usage (gal/hr) per test cell	26.80	
Maximum Hours Operated per Year	8760	
Total Heat Input Capacity (MMBtu/hr)	14.47	
Potential Throughput (MMBtu/yr)	126,775	
Maximum Throughput (gal/yr)	939,072	939,072
Sulfur Content (S) of Fuel (% by weight)	0.5	

	Pollutant						
	PM	PM ₁₀	PM _{2.5}	SO ₂	NO _x	VOC	CO
Emission Factor in lb/MMBtu	0.0425	0.0425	0.0425	0.0397	0.604	0.0493	0.13
Uncontrolled Emissions (tons/yr)							
Test Cell (TC1-TC4)	2.69	2.69	2.69	2.52	38.29	3.12	8.24
TOTAL (tons/yr)	2.69	2.69	2.69	2.52	38.29	3.12	8.24

PSD Minor Limit for NO_x (ton/yr) 245.00

NO_x Emission Factor = 0.082 lb/gal JP-8

	Hazardous Air Pollutants (HAPs)							
	Benzene	Toluene	Xylene	Formaldehyde	Acetaldehyde	Acrolein	1,3 Butadiene	TOTAL
Emission Factor in lb/MMBtu	9.33E-04	4.09E-04	2.85E-04	1.18E-03	7.67E-04	9.25E-05	3.91E-05	
Uncontrolled Emissions (tons/yr)								
Test Cell (TC1-TC4)	0.0591	0.0259	0.0181	0.0748	0.0486	0.0059	0.0025	0.2349
TOTAL (tons/yr)	0.0591	0.0259	0.0181	0.0748	0.0486	0.0059	0.0025	0.2349

Worse HAP = 0.2 tpy = 1.3 lb/yr

Methodology

Emission factors for JP-8 adapted from "Emissions from a 6.5 HMMWV Engine on Low Sulfur Diesel Fuel and JP-8", Tables: 2, 2A, and 4. (Interim report TFLRF No. 376 / DAAE-07-99-C-L053 (WD-11))

Fuel Heating Value = 135,000 Btu/gal JP-8
Conversion of HP to MMBtu/hr = 0.0025425 MMBtu/hr / HP

Total Heat Input Capacity (MMBtu/hr) = JP-8 Usage (gal/hr) per test cell x No. of cells x Fuel Heating Value (MMBtu/gal)

Potential Throughput (MMBtu/yr) = Total Heat Input Capacity (MMBtu/hr) x 8760 hr/yr

Maximum Throughput (gal/yr) = Potential Throughput (MMBtu/yr) / Fuel Heating Value (MMBtu/gal)

Potential Throughput (MMBtu/yr) = [Heat Input Capacity (MMBtu/hr)] * [Maximum Hours Operated per Year]

Potential Emission (tons/yr) = [Potential Throughput (MMBtu/yr)] * [Emission Factor (lb/MMBtu)] / [2,000 lb/ton]

Fuel Equivalency

JP-8 Usage (gal/yr) x 0.985 $\frac{\text{gal diesel}}{\text{gal JP-8}}$ + Diesel Usage (gal/yr) < 245 ton/yr

Engine Test Cells
for Reciprocating Internal Combustion Engines
4 Stroke, Lean Burn, Compression Ignition
Fuel Oil #2 -- Diesel

TC5-TC18

Company Name: Indiana Research Institute
Address City IN Zip: 1402 Hutchins Avenue, Columbus, IN 47201
County: Bartholomew
SIC : 8734 (Testing Laboratories)
Permit No.: T 005-35853-00104
Plant ID: 005-00104
Permit Reviewer: Anh Nguyen
Date: May 22,2015

Engine Test Cells	TC19 - TC20	(TC5- TC10, TC12,TC14, TC15)	TC16 - TC18	Total	Proposed Limit
Power Range (HP)	<300	<600	<1500		
No. of Test Cells	2	9	3	14	
Diesel Fuel Usage (gal/hr) per test cell	13.40	26.80	36.50		
Maximum Hours Operated per Year	8760	8760	8760		
Total Heat Input Capacity (MMBtu/hr)	3.67	33.04	15.00		
Potential Throughput (MMBtu/yr)	32,163	289,469	131,413		
Maximum Throughput (gal/yr)	234,768	2,112,912	959,220	3,306,900	245 ton/yr
Sulfur Content (S) of Fuel (% by weight)	0.5	0.5	0.5		

	Pollutant					
	PM	PM ₁₀ /PM _{2.5}	SO ₂	NO _x	VOC	CO
Emission Factor (<600hp) in lb/MMBtu	0.31	0.31	0.29	4.41	0.36	0.95
Emission Factor (>600hp) in lb/MMBtu	0.0697	0.0496	0.505	1.9	0.09	0.85
Uncontrolled Emissions (tons/yr)						
Engine Test Cells (TC19 - TC20)	4.99	4.99	4.66	70.92	5.79	15.28
Engine Test Cells (TC5- TC10, TC12,TC14, TC15)	44.87	44.87	41.97	638.28	52.10	137.50
Engine Test Cells (TC16 - TC18)	4.58	3.26	33.18	124.84	5.91	55.85
TOTAL (tons/yr)	54.43	53.11	79.82	834.04	63.81	208.63

PSD Minor Limit for NO_x (ton/yr)	245
--	------------

NO_x Emission Factor (<600hp) = 0.604 lb/gal diesel

NO_x Emission Factor (>600hp) = 0.260 lb/gal diesel

	Hazardous Air Pollutants (HAPs)							
	Benzene	Toluene	Xylene	Formaldehyde	Acetaldehyde	Acrolein	PAH**	TOTAL
Emission Factor (<600hp) in lb/MMBtu	9.33E-04	4.09E-04	2.85E-04	1.18E-03	7.67E-04	9.25E-05	1.68E-04	
Emission Factor (>600hp) in lb/MMBtu	7.76E-04	2.81E-04	1.93E-04	7.89E-05	2.52E-05	7.88E-06	2.12E-04	
Uncontrolled Emissions (tons/yr)								
Engine Test Cells (TC19 - TC20)	0.0150	0.0066	0.0046	0.0190	0.0123	0.0015	0.0027	0.0617
Engine Test Cells (TC5- TC10, TC12,TC14, TC15)	0.1350	0.0592	0.0412	0.1708	0.1110	0.0134	0.0243	0.5550
Engine Test Cells (TC16 - TC18)	0.0510	0.0185	0.0127	0.0052	0.0017	0.0005	0.0139	0.1034
TOTAL (tons/yr)	0.2010	0.0842	0.0585	0.1949	0.1250	0.0154	0.0409	0.7201

Methodology

Emission Factors for Small Engines (<600hp) are from AP 42 (Supplement B 10/96) Tables 3.3-1, 3.3-2, and 3.3-3

Emission Factors for Large Engines (>600hp) are from AP 42 (Supplement B 10/96) Tables 3.4-1, 3.4-2, 3.4-3, 3.4-4, and 3.4-5

Fuel Heating Value = 137,000 Btu/gal diesel
Conversion of HP to MMBtu/hr = 0.0025425 MMBtu/hr / HP

Total Heat Input Capacity (MMBtu/hr) = Diesel Fuel Usage (gal/hr) per test cell x No. of cells x Fuel Heating Value (MMBtu/gal)

Potential Throughput (MMBtu/yr) = Total Heat Input Capacity (MMBtu/hr) x 8760 hr/yr

Maximum Throughput (gal/yr) = Potential Throughput (MMBtu/yr) / Fuel Heating Value (MMBtu/gal)

Potential Throughput (MMBtu/yr) = [Heat Input Capacity (MMBtu/hr)] * [Maximum Hours Operated per Year]

Potential Emission (tons/yr) = [Potential Throughput (MMBtu/yr)] * [Emission Factor (lb/MMBtu)] / [2,000 lb/ton]

Engine Test Cells
for Reciprocating Internal Combustion Engines
4 Stroke, Lean Burn, Compression Ignition
Fuel Oil #2 -- Diesel

TC1-TC4

Company Name: Indiana Research Institute
Address City IN Zip: 1402 Hutchins Avenue, Columbus, IN 47201
County: Bartholomew
SIC : 8734 (Testing Laboratories)
Permit No.: T 005-35853-00104
Plant ID: 005-00104
Permit Reviewer: Anh Nguyen
Date: May 22,2015

Engine Test Cells	TC1 - TC4	Proposed Limit
Power Range (HP)	<600	
No. of Test Cells	4	
Diesel Fuel Usage (gal/hr) per test cell	26.80	
Maximum Hours Operated per Year	8760	
Total Heat Input Capacity (MMBtu/hr)	14.69	
Potential Throughput (MMBtu/yr)	128,653	
Maximum Throughput (gal/yr)	939,072	245 tpy
Sulfur Content (S) of Fuel (% by weight)	0.5	

	Pollutant						
	PM	PM ₁₀	PM _{2.5}	SO ₂	NO _x	VOC	CO
Emission Factor (<600hp) in lb/MMBtu	0.31	0.31	0.31	0.29	4.41	0.36	0.95
Uncontrolled Emissions (tons/yr)							
Test Cells (TC1-TC4)	19.94	19.94	19.94	18.65	283.68	23.16	61.11
TOTAL (tons/yr)	19.94	19.94	19.94	18.65	283.68	23.16	61.11

PSD Minor Limit for NO_x (ton/yr) 245 tpy

NO_x Emission Factor (<600hp) = 0.604 lb/gal diesel

	Hazardous Air Pollutants (HAPs)						
	Benzene	Toluene	Xylene	Formaldehyde	Acetaldehyde	Acrolein	PAH**
Emission Factor (<600hp) in lb/MMBtu	9.33E-04	4.09E-04	2.85E-04	1.18E-03	7.67E-04	9.25E-05	1.68E-04
Uncontrolled Emissions (tons/yr)							
Test Cells (TC1-TC4)	0.0600	0.0263	0.0183	0.0759	0.0493	0.0060	0.0108
TOTAL (tons/yr)	0.0600	0.0263	0.0183	0.0759	0.0493	0.0060	0.0108

Worse HAP = 0.1 tpy = 0.4 tpy

Methodology

Emission Factors for Small Engines (<600hp) are from AP 42 (Supplement B 10/96) Tables 3.3-1, 3.3-2, and 3.3-3

Emission Factors for Large Engines (>600hp) are from AP 42 (Supplement B 10/96) Tables 3.4-1, 3.4-2, 3.4-3, 3.4-4, and 3.4-5

Fuel Heating Value = 137,000 Btu/gal diesel
Conversion of HP to MMBtu/hr = 0.0025425 MMBtu/hr / HP

Total Heat Input Capacity (MMBtu/hr) = Diesel Fuel Usage (gal/hr) per test cell x No. of cells x Fuel Heating Value (MMBtu/gal)

Potential Throughput (MMBtu/yr) = Total Heat Input Capacity (MMBtu/hr) x 8760 hr/yr

Maximum Throughput (gal/yr) = Potential Throughput (MMBtu/yr) / Fuel Heating Value (MMBtu/gal)

Potential Throughput (MMBtu/yr) = [Heat Input Capacity (MMBtu/hr)] * [Maximum Hours Operated per Year]

Potential Emission (tons/yr) = [Potential Throughput (MMBtu/yr)] * [Emission Factor (lb/MMBtu)] / [2,000 lb/ton]

Appendix A: Emission Calculations**Reciprocating Internal Combustion Engines - Natural Gas (TC1-TC4)**

Company Name: Indiana Research Institute
 Address City IN Zip: 1402 Hutchins Avenue, Columbus, IN 47201
 County: Bartholomew
 SIC : 8734 (Testing Laboratories)
 Permit No.: T 005-35853-00104
 Plant ID: 005-00104
 Permit Reviewer: Anh Nguyen
 Date: May 22,2015

Emissions calculated based on heat input capacity (MMBtu/hr)

Heat Input Capacity (MMBtu/hr)	7.14
Maximum Hours Operated per Year	8760
Potential Throughput (MMBtu/yr)	62,546

	Pollutant						
	PM	PM10	direct PM2.5	SO2	NOx	VOC	CO
Emission Factor in lb/MMBtu	0.0099	0.0384	0.0384	5.88E-04	3.17	0.12	0.39
Potential Emission in tons/yr	0.31	1.20	1.20	0.02	99.14	3.75	12.07

Hazardous Air Pollutants (HAPs)

	Pollutant									
	Trimethylpenta ne	Acetaldehyde	Acrolein	Benzene	Ethylbenzene	Methanol	Styrene	Toluene	Xylenes	Formaldehyde
Emission Factor in lb/MMBtu	8.46E-04	7.76E-03	7.78E-03	1.94E-03	1.08E-04	2.48E-03	5.48E-05	9.63E-04	2.68E-04	5.52E-02
Potential Emission in tons/yr	2.65E-02	2.43E-01	2.43E-01	6.07E-02	3.38E-03	7.76E-02	1.71E-03	3.01E-02	8.38E-03	1.73E+00
Potential Emission of Total HAPs (tons/yr)										2.42E+00

Worst HAP = **1.7 tpy = 9.5 lb/day**

Methodology

Emission Factors are from AP42 (Supplement B 10/96), Tables 3.2-1

each engine =26.8 gal/hr diesel or 1750 cubic feet of Natural gas per hour

Heat Input Capacity (MMBtu/hr = 1750 FT3/hr x 1020 Btu/FT3 x 1 MMBTU/1E6 BTU = 1.79 MMBtu/hr x 7.14 MMBTU/HR

Potential Throughput (MMBtu/yr) = [Heat Input Capacity (MMBtu/hr)] * [Maximum Hours Operated per Year]

Potential Emission (tons/yr) = [Potential Throughput (MMBtu/yr)] * [Emission Factor (lb/MMBtu)] / [2,000 lb/ton]

CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21)

+ N2O Potential Emission ton/yr x N2O GWP (310).

Paint Booth P1

Air Atomization Spray Coating

Coating 4 Stroke, Lean Burn, Compression Ignition, Reciprocating Internal Combustion Engines

Company Name: Indiana Research Institute
 Address City IN Zip: 1402 Hutchins Avenue, Columbus, IN 47201
 County: Bartholomew
 SIC : 8734 (Testing Laboratories)
 Permit No.: T 005-35853-00104
 Plant ID: 005-00104
 Permit Reviewer: Anh Nguyen
 Date: May 22,2015

Material	Density (lb/gal)	Weight % Volatile (%)	Weight % Water (%)	Weight % Organics (%)	Weight % Solids (%)	Volume % Volatile (%)	Volume % Water (%)	Volume % Organics (%)	Volume % Solids (%)	Material Usage (gal/unit)	Maximum Capacity (unit/day) (unit/hr)		VOC Content (less water & exempt solvents) (lb VOC/gal coating)	Volatile Content (lb/gal coating)	VOC Emissions (lb VOC/hr) (lb VOC/day) (ton VOC/yr)			PM Emissions (ton PM/yr)	lb VOC/gal solids (lb VOC/gal solids)	Transfer Efficiency (%)
09994KWA-1 Cummins 94 Titanium Black Aqua-Zen Enamel	8.72	70.07%	53.80%	16.27%	29.93%	73.46%	56.43%	17.03%	26.54%	0.50	3.0	0.125	3.26	1.42	0.09	2.13	0.39	0.00	5.35	100%

METHODOLOGY

Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) * Weight % Organics) / (1-Volume % water)

Pounds of VOC per Gallon Coating = (Density (lb/gal) * Weight % Organics)

Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr)

Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (24 hr/day)

Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (8760 hr/yr) * (1 ton/2000 lbs)

Particulate Potential Tons per Year = (units/hour) * (gal/unit) * (lbs/gal) * (1- Weight % Volatiles) * (1-Transfer efficiency) * (8760 hrs/yr) * (1 ton/2000 lbs)

Pounds VOC per Gallon of Solids = (Density (lbs/gal) * Weight % organics) / (Volume % solids)

Total = Worst Coating + Sum of all solvents used

Material	Density (lb/gal)	Material Usage (gal/unit)	Maximum Capacity (unit/hr)	Weight % Cobalt	Cobalt (ton/yr)	Weight % Glycol Ethers	Glycol Ethers (ton/yr)	Total HAP (ton/yr)
09994KWA-1 Cummins 94 Titanium Black Aqua-Zen Enamel	8.72	0.50	0.125	0.29%	0.00E+00	0.0496%	1.93E-04	1.93E-04

Annual Coating
Usage (estimate)

547.5 gal/yr

13.08 lb/day

Glycol
Ethers
Emissions

(ton/yr)

METHODOLOGY

HAPS emission rate (tons/yr) = Density (lb/gal) * Gal of Material (gal/unit) * Maximum (unit/hr) * Weight % HAP * 8760 hrs/yr * 1 ton/

Engine Test Cells

Company Name: Indiana Research Institute
 Address City IN Zip: 1402 Hutchins Avenue, Columbus, IN 47201
 County: Bartholomew
 SIC : 8734 (Testing Laboratories)
 Permit No.: T 005-35853-00104
 Plant ID: 005-00104
 Permit Reviewer: Anh Nguyen
 Date: May 22,2015

Compliance Demonstration for NO_x emissions

$$E = \frac{(EF_{d1} \times U_{d1}) + (EF_{d2} \times U_{d2}) + (EF_{jp} \times U_{jp}) + (UNG \times HVNG \times EFNG)}{2000 \text{ lb/ton}}$$

Where:

E = Total NO_x emissions, in tons/month.
 U_{d1} = Total diesel fuel used in engines rated <600hp, in gallons/month.
 U_{d2} = Total diesel fuel used in engines rated >600hp, in gallons/month.
 U_{jp} = Total JP-8 fuel used, in gallons/month.
 U_{NG} = Total Natural Gas fuel used, in mmscf/month
 EF_{d1} = NO_x emission factor for diesel fuel used in engines rated <600hp, in lb/gallon.
 EF_{d2} = NO_x emission factor for diesel fuel used in engines rated >600hp, in lb/gallon.
 EF_{jp} = NO_x emission factor for JP-8 fuel used, in lb/gallon.
 EF_{NG} = NO_x emission factor for NG, in lb/mmBtu
 HV_{NG} = Heating Value of Natural Gas, mmBtu/mmscf

Compliance Demonstration for CO emissions

$$E = \frac{(EF_{d1} \times U_{d1}) + (EF_{d2} \times U_{d2}) + (EF_{jp} \times U_{jp}) + (UNG \times HVNG \times EFNG)}{2000 \text{ lb/ton}}$$

Where:

E = Total CO emissions, in tons/month.
 U_{d1} = Total diesel fuel used in engines rated <600hp, in gallons/month.
 U_{d2} = Total diesel fuel used in engines rated >600hp, in gallons/month.
 U_{jp} = Total JP-8 fuel used, in gallons/month.
 U_{NG} = Total Natural Gas fuel used, in mmscf/month
 EF_{d1} = CO emission factor for diesel fuel used in engines rated <600hp, in lb/gallon.
 EF_{d2} = CO emission factor for diesel fuel used in engines rated >600hp, in lb/gallon.
 EF_{jp} = CO emission factor for JP-8 fuel used, in lb/gallon.
 EF_{NG} = CO emission factor for NG, in lb/mmBtu.
 HV_{NG} = Heating Value of Natural Gas, mmBtu/mmscf

Fuel Heating Value =	135,000	Btu/gal JP-8
Fuel Heating Value =	137,000	Btu/gal diesel
Conversion of HP to MMBtu/hr =	0.0025425	MMBtu/hr / HP

Fuel Equivalency

JP-8 Usage (gal/yr) 0.985 gal diesel + Diesel Usage (gal/yr) < 245 ton/yr
 gal JP-8



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

100 N. Senate Avenue • Indianapolis, IN 46204

(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Michael R. Pence
Governor

Carol S. Comer
Commissioner

Notice of Public Comment

October 28, 2015
Indiana Research Institute
005-35853-00104

Dear Concerned Citizen(s):

You have been identified as someone who could potentially be affected by this proposed air permit. The Indiana Department of Environmental Management, in our ongoing efforts to better communicate with concerned citizens, invites your comment on the draft permit.

Enclosed is a Notice of Public Comment, which has been placed in the Legal Advertising section of your local newspaper. The application and supporting documentation for this proposed permit have been placed at the library indicated in the Notice. These documents more fully describe the project, the applicable air pollution control requirements and how the applicant will comply with these requirements.

If you would like to comment on this draft permit, please contact the person named in the enclosed Public Notice. Thank you for your interest in the Indiana's Air Permitting Program.

Please Note: *If you feel you have received this Notice in error, or would like to be removed from the Air Permits mailing list, please contact Patricia Pear with the Air Permits Administration Section at 1-800-451-6027, ext. 3-6875 or via e-mail at PPEAR@IDEM.IN.GOV. If you have recently moved and this Notice has been forwarded to you, please notify us of your new address and if you wish to remain on the mailing list. Mail that is returned to IDEM by the Post Office with a forwarding address in a different county will be removed from our list unless otherwise requested.*

Enclosure
PN AAA Cover.dot 8/27/2015



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Michael R. Pence
Governor

Carol S. Comer
Commissioner

AFFECTED STATE NOTIFICATION OF PUBLIC COMMENT PERIOD DRAFT INDIANA AIR PERMIT

October 28, 2015

A 30-day public comment period has been initiated for:

Permit Number: 005-35853-00104
Applicant Name: Indiana Research Institute
Location: Columbus, Bartholomew County, Indiana

The public notice, draft permit and technical support documents can be accessed via the **IDEM Air Permits Online** site at:

<http://www.in.gov/ai/appfiles/idem-caats/>

Questions or comments on this draft permit should be directed to the person identified in the public notice by telephone or in writing to:

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

Questions or comments regarding this email notification or access to this information from the EPA Internet site can be directed to Chris Hammack at chammack@idem.IN.gov or (317) 233-2414.

Affected States Notification.dot 8/27/2015



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Michael R. Pence
Governor

Carol S. Comer
Commissioner

October 28, 2015

Mr. Don McCloskey
Indiana Research Institute
1402 Hutchins Avenue
Columbus, IN 47201

Re: Public Notice
Indiana Research Institute
Permit Level: Part 70 Operating Permit Renewal
Permit Number: 005-35853-00104

Dear Mr. McCloskey:

Enclosed is a copy of your draft Part 70 Operating Permit Renewal, Technical Support Document, emission calculations, and the Public Notice which will be printed in your local newspaper.

The Office of Air Quality (OAQ) has prepared two versions of the Public Notice Document. The abbreviated version will be published in the newspaper, and the more detailed version will be made available on the IDEM's website and provided to interested parties. Both versions are included for your reference. The OAQ has requested that the Republic in Columbus, Indiana publish the abbreviated version of the public notice no later than October 31, 2015. You will not be responsible for collecting any comments, nor are you responsible for having the notice published in the newspaper.

OAQ has submitted the draft permit package to the Bartholomew County Public Library, 536 Fifth Street in Columbus, Indiana. As a reminder, you are obligated by 326 IAC 2-1.1-6(c) to place a copy of the complete permit application at this library no later than ten (10) days after submittal of the application or additional information to our department. We highly recommend that even if you have already placed these materials at the library, that you confirm with the library that these materials are available for review and request that the library keep the materials available for review during the entire permitting process.

Please review the enclosed documents carefully. This is your opportunity to comment on the draft permit and notify the OAQ of any corrections that are needed before the final decision. Questions or comments about the enclosed documents should be directed to Ahn Nguyen, Indiana Department of Environmental Management, Office of Air Quality, 100 N. Senate Avenue, Indianapolis, Indiana, 46204 or call (800) 451-6027, and ask for extension 3-5334 or dial (317) 233-5334.

Sincerely,

Greg Hotopp

Greg Hotopp
Permits Branch
Office of Air Quality

Enclosures
PN Applicant Cover letter 8/27/2015



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

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Michael R. Pence
Governor

Carol S. Comer
Commissioner

October 28, 2015

To: Bartholomew County Public Library

From: Matthew Stuckey, Branch Chief
Permits Branch
Office of Air Quality

Subject: **Important Information to Display Regarding a Public Notice for an Air Permit**

Applicant Name: Indiana Research Institute
Permit Number: 005-35853-00104

Enclosed is a copy of important information to make available to the public. This proposed project is regarding a source that may have the potential to significantly impact air quality. Librarians are encouraged to educate the public to make them aware of the availability of this information. The following information is enclosed for public reference at your library:

- Notice of a 30-day Period for Public Comment
- Request to publish the Notice of 30-day Period for Public Comment
- Draft Permit and Technical Support Document

You will not be responsible for collecting any comments from the citizens. Please refer all questions and request for the copies of any pertinent information to the person named below.

Members of your community could be very concerned in how these projects might affect them and their families. **Please make this information readily available until you receive a copy of the final package.**

If you have any questions concerning this public review process, please contact Joanne Smiddie-Brush, OAQ Permits Administration Section at 1-800-451-6027, extension 3-0185. Questions pertaining to the permit itself should be directed to the contact listed on the notice.

Enclosures
PN Library.dot 8/27/2015



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

100 N. Senate Avenue • Indianapolis, IN 46204

(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Michael R. Pence
Governor

Carol S. Comer
Commissioner

ATTENTION: PUBLIC NOTICES, LEGAL ADVERTISING

October 28, 2015

The Republic
333 Second Street
PO Box 3001
Columbus, IN 47201

Enclosed, please find one Indiana Department of Environmental Management Notice of Public Comment for Indiana Research Institute, Bartholomew County, Indiana.

Since our agency must comply with requirements which call for a Notice of Public Comment, we request that you print this notice one time, no later than October 31, 2015.

Please send a notarized form, clippings showing the date of publication, and the billing to the Indiana Department of Environmental Management, Accounting, Room N1345, 100 North Senate Avenue, Indianapolis, Indiana, 46204.

To ensure proper payment, please reference account # 100174737.

We are required by the Auditor's Office to request that you place the Federal ID Number on all claims. If you have any conflicts, questions, or problems with the publishing of this notice or if you do not receive complete public notice information for this notice, please call Greg Hotopp at 800-451-6027 and ask for extension 4-3493 or dial 317-234-3493.

Sincerely,

Greg Hotopp

Greg Hotopp
Permit Branch
Office of Air Quality

Permit Level: Part 70 Operating Permit Renewal
Permit Number: 005-35853-00104

Enclosure

PN Newspaper.dot 8/27/2015

Mail Code 61-53

IDEM Staff	GHOTOPP 10/28/2015 Indiana Research Institute 005-35853-00104 Draft		AFFIX STAMP HERE IF USED AS CERTIFICATE OF MAILING
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2		Roger Lin Operations Mgr Indiana Research Institute 1402 Hutchins Ave Columbus IN 47201 (RO CAATS)									
3		Columbus City Council and Mayors Office 123 Washington St Columbus IN 47201 (Local Official)									
4		Mr. Elbert Held 734 Hutchins Columbus IN 47201 (Affected Party)									
5		Mr. Lcnfc 1039 Sycamore St Columbus IN 47201 (Affected Party)									
6		Bartholomew Co Public Library 536 Fifth St. Columbus IN 47201-6225 (Library)									
7		Bartholomew County Commissioners 440 Third Street Columbus IN 47202 (Local Official)									
8		Mr. Jean Terpstra 3210 Grove Pkwy Columbus IN 47203 (Affected Party)									
9		Terry Lowe 1079 Spring Meadow Court Franklin IN 46131 (Affected Party)									
10		Mr. Charles Mitch 3210 Grove Parkway Columbus IN 47203 (Affected Party)									
11		Bartholomew County Health Department 440 3rd Street, Suite 303 Columbus IN 47201 (Health Department)									
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11			