

**CONSTRUCTION PERMIT
OFFICE OF AIR MANAGEMENT**

**Auburn Foundry
West County Road 48
Auburn, Indiana 46706**

is hereby authorized to construct
One (1) gray iron foundry with a maximum metal melting rate of thirty-two (32) tons per hour including one (1) 1.0 mmBtu/hr natural gas-fired office boiler and the following processes:

- (a) one (1) sand mixing process, with PM controlled by a baghouse, designated as system 1,
- (b) one (1) melting process including the melting of gray iron by three (3) electric induction furnaces, charge handling, and pouring at a maximum rate of 32 tons per hour, with PM controlled by a baghouse, designated as system 2,
- (c) one (1) cleaning and finishing process, with PM controlled by a baghouse, designated as system 3,
- (d) one (1) shakeout process for two (2) individual molding lines, with PM controlled by a baghouse, designated as system 4, and
- (e) one (1) shakeout process for two (2) individual molding lines, and one (1) return sand handling process, with PM controlled by a baghouse, designated as System 5.

This permit is issued to the above mentioned company (herein known as the Permittee) under the provisions of 326 IAC 2-1 and 40 CFR 52.780, with conditions listed on the attached pages.

Construction Permit No.: CP-033-5793-00042	
Issued by: Paul Dubenetzky, Branch Chief Office of Air Management	Issuance Date:

This permit shall supersede construction permit CP 033-3496, issued on June 30, 1994.

Construction Conditions

General Construction Conditions

1. That the data and information supplied with the application shall be considered part of this permit. Prior to any proposed change in construction which may affect allowable emissions, the change must be approved by the Office of Air Management (OAM).
2. That this permit to construct does not relieve the permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.

Effective Date of the Permit

3. That pursuant to IC 13-15-5-3, this permit becomes effective upon its issuance.
4. That pursuant to 326 IAC 2-1-9(b)(Revocation of Permits), the Commissioner may revoke this permit if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.
5. That notwithstanding Construction Condition No. 6, all requirements and conditions of this construction permit shall remain in effect unless modified in a manner consistent with procedures established for modifications of construction permits pursuant to 326 IAC 2 (Permit Review Rules).

Operation Permit

6. That this document shall also become an operation permit pursuant to 326 IAC 2-1-4 (Operating Permits) when, prior to start of operation, the following requirements are met:
 - (a) An affidavit of construction has been submitted to the Office of Air Management (OAM), Permit Administration & Development Section, verifying that the facilities were constructed as proposed in the application.
 - (b) If construction is completed in phases; i.e., the entire construction is not done continuously, a separate affidavit must be submitted for each phase of construction. Any permit conditions associated with operation start up dates such as stack testing for New Source Performance Standards (NSPS) shall be applicable to each individual phase.
 - (c) Permittee has received an Operation Permit Validation Letter from the Chief of the Permit Administration & Development Section. The received validation letter shall be attached to this document.
 - (d) The operation permit will be subject to annual operating permit fees pursuant to 326 IAC 2-7-19 (Fees).
 - (e) The Permittee has submitted their Part 70 application T033-7726-00042 on January 13, 1997 for the existing source. The equipment being reviewed under this permit shall be incorporated in the submitted Part 70 application.

7. That when the facility is constructed and placed into operation the following operation conditions shall be met:

Operation Conditions

General Operation Conditions

1. That the data and information supplied in the application shall be considered part of this permit. Prior to any change in the operation which may result in an increase in allowable emissions exceeding those specified in 326 IAC 2-1-1 (Construction and Operating Permit Requirements), the change must be approved by the Office of Air Management (OAM).
2. That the permittee shall comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder.

Preventive Maintenance Plan

3. That pursuant to 326 IAC 1-6-3 (Preventive Maintenance Plans), the Permittee shall prepare and maintain a preventive maintenance plan, including the following information:
- (a) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices.
 - (b) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions.
 - (c) Identification of the replacement parts which will be maintained in inventory for quick replacement.

The preventive maintenance plan shall be submitted to IDEM, OAM upon request and shall be subject to review and approval.

Transfer of Permit

4. That pursuant to 326 IAC 2-1-6 (Transfer of Permits):
- (a) In the event that ownership of this foundry operation is changed, the Permittee shall notify OAM, Permit Branch, within thirty (30) days of the change. Notification shall include the date or proposed date of said change.
 - (b) The written notification shall be sufficient to transfer the permit from the current owner to the new owner.
 - (c) The OAM shall reserve the right to issue a new permit.

Permit Revocation

5. That pursuant to 326 IAC 2-1-9(a)(Revocation of Permits), this permit to construct and operate may be revoked for any of the following causes:

- (a) Violation of any conditions of this permit.
- (b) Failure to disclose all the relevant facts, or misrepresentation in obtaining this permit.
- (c) Changes in regulatory requirements that mandate either a temporary or permanent reduction of discharge of contaminants. However, the amendment of appropriate sections of this permit shall not require revocation of this permit.
- (d) Noncompliance with orders issued pursuant to 326 IAC 1-5 (Episode Alert Levels) to reduce emissions during an air pollution episode.
- (e) For any cause which establishes in the judgment of IDEM, the fact that continuance of this permit is not consistent with purposes of 326 IAC 2-1 (Permit Review Rules).

Availability of Permit

6. That pursuant to 326 IAC 2-1-3(l), the Permittee shall maintain the applicable permit on the premises of this source and shall make this permit available for inspection by the IDEM, (local agency if applicable) or other public official having jurisdiction.

Performance Testing

7. That pursuant to 326 IAC 2-1-3 (Construction and Operating Permit Requirements) compliance stack tests shall be performed for Particulate Matter within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up. These tests shall be performed according to 326 IAC 3-2.1 (Source Sampling Procedures) using the methods specified in the rule or as approved by the Commissioner.

- (a) A test protocol shall be submitted to the OAM, Compliance Data Section, 35 days in advance of the test.
- (b) The Compliance Data Section shall be notified of the actual test date at least two (2) weeks prior to the date.
- (c) All test reports must be received by the Compliance Data Section within 45 days of completion of the testing.
- (d) Whenever the results of the stack test performed exceed the level specified in this permit, appropriate corrective actions shall be implemented within thirty (30) days of receipt of the test results. These actions shall be implemented immediately unless notified by OAM that they are acceptable. The Permittee shall minimize emissions while the corrective actions are being implemented.
- (e) Whenever the results of the stack test performed exceed the level specified in this permit, a second test to demonstrate compliance shall be performed within 120 days. Failure of the second test to demonstrate compliance may be grounds for immediate revocation of this permit to operate the affected facility.

The stack testing results from the original stack tests conducted to meet the compliance stack testing requirements of construction permit CP 033-3496, issued on June 30, 1994 may be used to satisfy the testing requirements of this condition. The submitted results are determined to be acceptable to the commissioner.

Malfunction Condition

8. That pursuant to 326 IAC 1-6-2 (Records; Notice of Malfunction):

- (a) A record of all malfunctions, including startups or shutdowns of any facility or emission control equipment, which result in violations of applicable air pollution control regulations or applicable emission limitations shall be kept and retained for a period of three (3) years and shall be made available to the Indiana Department of Environmental Management (IDEM), Office of Air Management (OAM) or appointed representative upon request.
- (b) When a malfunction of any facility or emission control equipment occurs which lasts more than one (1) hour, said condition shall be reported to OAM, using the Malfunction Report Forms (2 pages). Notification shall be made by telephone or facsimile, as soon as practicable, but in no event later than four (4) daytime business hours after the beginning of said occurrence.
- (c) Failure to report a malfunction of any emission control equipment shall constitute a violation of 326 IAC 1-6, and any other applicable rules. Information of the scope and expected duration of the malfunction shall be provided, including the items specified in 326 IAC 1-6-2(a)(1) through (6).
- (d) Malfunction is defined as any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner. [326 IAC 1-2-39]

Particulate Matter Limitation

9. That the PM emissions from the proposed processes shall be in compliance with 326 IAC 6-3 (Process Operations) provided that:

- (a) Visible emissions are limited to 10% opacity. This opacity will satisfy the opacity limits of 326 IAC 5.
- (b) There are no visible emissions from the building openings. Satisfaction of this condition shall satisfy the fugitive emission requirements of 326 IAC 6-4.
- (c) The PM emissions shall not exceed the following:
 - (i) for System 1, 1.48 lb PM/hr
 - (ii) for System 2, 4.22 lb PM/hr
 - (iii) for System 3, 2.11 lb PM/hr
 - (iv) for System 4, 4.85 lb PM/hr
 - (v) for System 5, 8.44 lb PM/hr

Baghouse Operating Condition

10. That the baghouse shall be operated at all times when the units and processes are in operation.
- (a) The Permittee shall take readings of the total static pressure drop across the baghouses, at least once per week. Unless operated under conditions for which the Preventive Maintenance Plan specifies otherwise, the pressure drop across the baghouses shall be maintained within 2 to 8 inches of water. The Preventive Maintenance Plan for these baghouses shall contain troubleshooting contingency and corrective actions for when the pressure reading is outside of this range for any one reading.
 - (b) The instrument used for determining the pressure shall be subject to approval by IDEM, OAM, and shall be calibrated at least once every six (6) months.
 - (c) The gauge employed to take the pressure drop across the baghouses or any part of the facility shall have a scale such that the expected normal reading shall be no less than 20 percent of full scale and be accurate within $\pm 2\%$ of full scale reading. The instrument shall be quality assured and maintained as specified by the vendor.
 - (d) An inspection shall be performed each calendar quarter of the all the baghouses. Defective bags shall be replaced. A record shall be kept of the results of the inspection and the number of bags replaced.
 - (e) In the event that a bag's failure has been observed:
 - (i) The affected compartments will be shut down immediately until the failed units have been replaced.
 - (ii) Based upon the findings of the inspection, any additional corrective actions will be devised within eight (8) hours of discovery and will include a timetable for completion.

Visible Emission Notations

11. The visible emission notations of all exhausts to the atmosphere from systems 1 through 5 shall be performed once per working day. A trained employee will record whether emissions are normal or abnormal.
- (a) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail 80% of the time the process is in operation, not counting start up or shut down time.
 - (b) In the case of batch or discontinuous operation, the readings shall be taken that part of the operation specified in the facility's specific condition prescribing visible emissions.
 - (c) A trained employee is an employee who has worked at the plant atleast one (1) month and has been trained in the appearance and characteristics of normal and abnormal visible emissions for that specific process.

- (d) The preventive maintenance plan for this facility shall contain trouble shooting contingency and corrective actions for when an abnormal emission is observed.

Open Burning

12. That 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.

13. VOC Requirements

That any change or modification which will alter the operations in such a way that it will increase the potential volatile organic compound (VOC) emissions to 25 tons per year or more, shall get prior approval, pursuant to the requirements of 326 IAC 8-1-6.

14. Record Keeping

That a log of information necessary to document compliance with operation permit condition no.10 shall be maintained. These records shall be kept for atleast for a 24 month period and made available upon request to the Office of Air Management (OAM).

MALFUNCTION REPORT

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR MANAGEMENT
FAX NUMBER - 317 233-5967**

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

THIS FACILITY MEETS THE APPLICABILITY REQUIREMENTS BECAUSE: IT HAS POTENTIAL TO EMIT 25 LBS/HR PARTICULATES ? _____, 100 LBS/HR VOC ? _____, 100 LBS/HR SULFUR DIOXIDE ? _____ OR 2000 LBS/HR OF ANY OTHER POLLUTANT ? _____ EMISSIONS FROM MALFUNCTIONING CONTROL EQUIPMENT OR PROCESS EQUIPMENT CAUSED EMISSIONS IN EXCESS OF APPLICABLE LIMITATION _____.

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

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

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

COMPANY: _____ PHONE NO. () _____

LOCATION: (CITY AND COUNTY) _____

PERMIT NO. _____ AFS PLANT ID: _____ AFS POINT ID: _____ INSP: _____

CONTROL/PROCESS DEVICE WHICH MALFUNCTIONED AND REASON: _____

DATE/TIME MALFUNCTION STARTED: ____/____/19____ AM / PM

ESTIMATED HOURS OF OPERATION WITH MALFUNCTION CONDITION: _____

DATE/TIME CONTROL EQUIPMENT BACK-IN SERVICE ____/____/19____ AM/PM

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

ESTIMATED AMOUNT OF POLLUTANT EMITTED DURING MALFUNCTION: _____

MEASURES TAKEN TO MINIMIZE EMISSIONS: _____

REASONS WHY FACILITY CANNOT BE SHUTDOWN DURING REPAIRS:

CONTINUED OPERATION REQUIRED TO PROVIDE ESSENTIAL * SERVICES: _____

CONTINUED OPERATION NECESSARY TO PREVENT INJURY TO PERSONS: _____

CONTINUED OPERATION NECESSARY TO PREVENT SEVERE DAMAGE TO EQUIPMENT: _____

INTERIM CONTROL MEASURES: (IF APPLICABLE) _____

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

MALFUNCTION RECORDED BY: _____ DATE: _____ TIME: _____

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

326 IAC 1-6-1 Applicability of rule

Sec. 1. The requirements of this rule (326 IAC 1-6) shall apply to the owner or operator of any facility which has the potential to emit twenty-five (25) pounds per hour of particulates, one hundred (100) pounds per hour of volatile organic compounds or SO₂, or two thousand (2,000) pounds per hour of any other pollutant; or to the owner or operator of any facility with emission control equipment which suffers a malfunction that causes emissions in excess of the applicable limitation.

326 IAC 1-2-39 “Malfunction” definition

Sec. 39. Any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner. (Air Pollution Control Board; 326 IAC 1-2-39; filed Mar 10, 1988, 1:20 p.m. : 11 IR 2373)

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

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

Indiana Department of Environmental Management Office of Air Management

Technical Support Document (TSD) for New Construction and Operation

Source Background and Description

Source Name:	Auburn Foundry
Source Location:	West County Road 48 Auburn, IN 46706
County:	Dekalb
Construction Permit No.:	CP-033-5793-00042
SIC Code:	3321
Permit Reviewer:	Keshav Reddy

The Office of Air Management (OAM) has reviewed requests from Auburn Foundry relating to the modification of conditions in its existing construction permit (033-3496). This request was made to relax operation conditions which were put forth in the permit based on old emission factors. Request was also received from Auburn Foundry to change information pertaining to baghouse systems in accordance with the stack tests information.

The purpose of the review is to evaluate the changes requested. The changes result in recalculation of emissions, relaxing the conditions in the permit and also adding other standardized conditions in the permit. A proposed draft (CP 033-5793) was public noticed on xxxxx. d operation of (? facility description or process), consisting of the following equipment:

(a) *(specify the units/processes as they would appear in the approval)*

(b)

(indicate the maximum capacity, throughput, product being produced, raw material being used, air pollution control, brief description of the operation/unit, date of construction, issues).

Examples of issues that need to be specified:

Source Definition *(optional)*

This (process) manufacturing company consists of two (2) plants:

- (a) Plant 1 is located at 100 North Senate Avenue, Any City, Indiana; and
- (b) Plant 2 is located at 101 North Senate Avenue, Any City, Indiana.

Since the two (2) plants are located in contiguous properties, have the same SIC codes and owned by one company, they will be considered as one (1) source.

Equipment/Process Constructed Before 1968 *(optional)*

The following (equipment/process) were constructed prior to 1968. Therefore, the Construction Conditions of the proposed permit will not apply to them.

Air Pollution Control Justification as Integral Part of the Process *(optional)*

The company has submitted the following justifications such that the (? air pollution control e.g.: baghouse, afterburner) be considered as an integral part of the (? process):

- (a)
- (b)

The OAM has evaluated the justifications and agreed that the (? air pollution control) will be considered as an integral part of the (? process). Therefore, the permitting level will be determined using the potential emissions after the (? air pollution control equipment). Operating conditions will be specified in the proposed permit that this (? air pollution control) shall operate at all times when the (? process) is in operation.

or

The OAM has evaluated the justifications and decided that the (? air pollution control) will not be considered as an integral part of the (? process). Therefore, the permitting level will be determined using the potential emissions before the (? air pollution control equipment).

Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (°F)

(delete rows not needed)

Enforcement Issue *(optional)*

(choose)

IDEM is aware that this (? facility/equipment) has been constructed (? or operated) prior to receipt of the proper permit. IDEM is reviewing this matter and will take appropriate action. This proposed permit is intended to satisfy the requirements of the construction permit rules.

Even prior to the proposed installation of this (? facility/equipment), the source has been determined to be subject to Part 70 Permit Program, but the source has not submitted the appropriate application. Therefore, OAM is forwarding an enforcement referral to the Office of Enforcement (OE) regarding this issue. *(this will only apply to modification of existing sources, not to new source)*

Recommendation

The staff recommends to the Commissioner that the construction and operation be approved. This recommendation is based on the following facts and conditions:

Information, unless otherwise stated, used in this review was derived from the application and additional information submitted by the applicant.

(choose one)

A complete application for the purposes of this review was received on (date).

An application for the purposes of this review was received on (date), with additional information received on (date).

Emissions Calculations

See Appendix A (Emissions Calculation Spreadsheets) for detailed calculations ((? indicate how many pages) pages).

(and/or insert the calculations here if there are no spreadsheets formatted for that operation, but it is highly recommended that the reviewer uses available formatted spreadsheets to avoid duplication of effort or committing errors)

Total Potential and Allowable Emissions

(add all the emissions from the emission unit(s).)

Indiana Permit Allowable Emissions Definition (after compliance with applicable rules, based on 8,760 hours of operation per year at rated capacity):

Pollutant	Allowable Emissions (tons/year)	Potential Emissions (tons/year)
Particulate Matter (PM)		
Particulate Matter (PM10)		
Sulfur Dioxide (SO ₂)		
Volatile Organic Compounds (VOC)		
Carbon Monoxide (CO)		
Nitrogen Oxides (NO _x)		
Single Hazardous Air Pollutant (HAP)		
Combination of HAPs		

(do not delete rows, put zeroes or negligible on them)

(choose and re-letter)

- (a) Allowable emissions are determined from the applicability of rule 326 IAC (? i.e. 6-3, 6-2). See attached spreadsheets for detailed calculations. *(and/or insert allowable emissions calculations here)*
- (b) The potential emissions before control are less than the allowable emissions, therefore, the potential emissions before control are used for the permitting determination.
- (b) The allowable emissions based on the rules cited are less than the potential emissions, therefore, the allowable emissions are used for the permitting determination.
- (b) The (?) emissions are less than the (?) emissions, therefore, the (?) emissions are used for the permitting determination.
- (c) Allowable emissions (as defined in the Indiana Rule) of (? pollutant (s)) are greater than 25 tons per year. Therefore, pursuant to 326 IAC 2-1, Sections 1 and 3, a construction permit is required.

- (d) Allowable emissions (as defined in the Indiana Rule) of a single hazardous air pollutant (HAP) are greater than 10 tons per year and/or the allowable emissions of any combination of the HAPs are greater than 25 tons per year. Therefore, pursuant to 326 IAC 2-1, a construction permit is required.
- (e) Pursuant to the IDEM's Policy on Air Toxic Rules, dated December 13, 1995, IDEM will not enforce the provisions of 326 IAC 2-1-1(b)(1)(H), as adopted by the Air Board on March 10, 1994. This means that modification of a major source of HAPs which will increase the allowable emissions of any one (1) HAP by 4 tons per year or any combination of HAPs by 10 tons per year will not be required to obtain a construction permit. The Policy is in effect immediately and will continue to be in effect until the effective date of amendments to Indiana's rule for new and modified sources of HAPs. This Policy may be extended or modified at IDEM's discretion.

However, this construction permit is required because of the requirements of 326 IAC 2-1, Sections 1 and 3.

County Attainment Status

(choose if the source is located in an attainment county).

- (a) Volatile organic compounds (VOC) and oxides of nitrogen (NOx) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. (? Name) County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.
- (b) (? Name) County has been classified as attainment or unclassifiable for (pollutant(s)). Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.
- (c) Fugitive Emissions *(optional)*
Since this type of operation is not one of the 28 listed source categories under 326 IAC 2-2 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive PM emissions are not counted toward determination of PSD and Emission Offset applicability.

(choose if the source is located in a nonattainment county).

- (a) Volatile organic compounds (VOC) and oxides of nitrogen are precursors for the formation of ozone. Therefore, VOC and NOx emissions are considered when evaluating the rule applicability relating to the ozone standards. (? Name) County has been designated as nonattainment for ozone. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Emission Offset, 326 IAC 2-3.
- (b) (? Name) County has been classified as nonattainment for (pollutant(s)). Therefore, these emissions were reviewed pursuant to the requirements for Emission Offset, 326 IAC 2-3.

- (c) *(if applicable, indicate if the source is or is not located in the nonattainment portion of a county, such as the township)*
- (d) **Fugitive Emissions (optional)**
 Since this type of operation is not one of the 28 listed source categories under 326 IAC 2-2 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive PM emissions are not counted toward determination of PSD and Emission Offset applicability.

Portable Source (optional)
(choose)

- (a) **Initial Location**
 This is a portable source, and its initial location will be in (? complete address).
- (b) **PSD and Emission Offset Requirements**
 The emissions from this portable source were reviewed both under the requirements of the Prevention of Significant Deterioration (PSD), 326 IAC 2-2, 40 CFR 52.21, and Emission Offset, 326 IAC 2-3.
- (c) **Fugitive Emissions**
 Since this type of operation is not one of the 28 listed source categories under 326 IAC 2-2 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive PM emissions are not counted toward determination of PSD and Emission Offset applicability.
- (d) **Local Agency (optional)**
 Based on the initial location of this source, the (? local agency) shall be contacted for additional air operating requirements. The OAM has the authority to issue this construction permit.

Source Status

(use this portion for new source)

New Source PSD Definition (emissions after controls, based on 8,760 hours of operation per year at rated capacity and/ or as otherwise limited):

(For a new source, use the controlled, limited or truncated emissions)

Pollutant	Emissions (ton/yr)
PM	
PM10	
SO ₂	
VOC	
CO	
NO _x	
Single HAP	
Combination HAPs	

(choose)

- (a) This new source is **not** a major stationary source because no attainment pollutant is emitted at a rate of 250 tons per year or greater and it is not in one of the 28 listed source categories. Therefore, pursuant to 326 IAC 2-2, and 40 CFR 52.21, the PSD requirements do not apply.
- (a) This new source is **not** a major stationary source because (? nonattainment pollutant) is not emitted at a rate of 100 tons per year or greater. Therefore, pursuant to 326 IAC 2-3, the Emission Offset requirements do not apply.
- (a) This new source is **not** a major stationary source because even though it is one of the 28 listed source categories, it does not emit 100 tons per year or more of any regulated pollutant. Therefore, pursuant to 326 IAC 2-2 and 2-3, and 40 CFR 52.21, the PSD and Emission Offset requirements do not apply.
- (a) This new source is **not** a major stationary source because no attainment pollutant is emitted at a rate of 250 tons per year or greater, no nonattainment pollutant is emitted at a rate of 100 tons per year or greater and it is not in one of the 28 listed source categories. Therefore, pursuant to 326 IAC 2-2 and 2-3, and 40 CFR 52.21, the PSD and Emission Offset requirements do not apply.
- (a) This new source is a major stationary source because at least one regulated attainment pollutant is emitted at a rate of 250 tons per year or greater. This new source is not one of the 28 listed source categories. Therefore, pursuant to 326 IAC 2-2, and 40 CFR 52.21, the PSD requirements apply.
- (a) This new source is a major stationary source because at least one nonattainment pollutant is emitted at a rate of 100 tons per year or greater. This new source is not one of the 28 listed source categories. Therefore, pursuant to 326 IAC 2-3, the Emission Offset requirements apply.
- (a) This new source is a major stationary source because at least one regulated attainment pollutant is emitted at a rate of 100 tons per year or greater, and it is in one of the 28 listed source categories. Therefore, pursuant to 326 IAC 2-2, and 40 CFR 52.21, the PSD requirements apply.
- (a) This new source is a major stationary source because at least one regulated nonattainment pollutant is emitted at a rate of 100 tons per year or greater, and it is in one of the 28 listed source categories. Therefore, pursuant to 326 IAC 2-3, the Emission Offset requirements apply.
- (a) This new source is a major stationary source because it is in one of the 28 listed source categories and emits more than 100 tons per year of at least one regulated attainment pollutant. Therefore, pursuant to 326 IAC 2-2, and 40 CFR 52.21, the PSD requirements apply.

- (b) The (pollutant) is limited to (?) tons/yr, therefore, (?) requirements do not apply. This limit is equivalent to (? throughput). *(Show the calculations here)*

Example:

The input VOC is limited to 240 tons/year, therefore, the 326 IAC 2-2, PSD requirements do not apply.

Reminder: For a given unit which is limited under PSD or Emission Offset significant levels or other significant levels, the rest of the pollutants emitted by that unit should also be scaled down accordingly.

Source Status

(use this portion for existing source)

Existing Source PSD, Part 70 or FESOP Definition (emissions after controls, based on 8,760 hours of operation per year at rated capacity and/ or as otherwise limited):

(For an existing permitted source, use the total controlled or limited emissions from the permits/registrations issued to the source, or the emission inventory from the AIRS Facility Quick Look Report or the FESOP limit if the source has been issued a FESOP)

Pollutant	Emissions (ton/yr)
PM	
PM10	
SO ₂	
VOC	
CO	
NO _x	

(choose)

- (a) This existing source is a major stationary source because at least one attainment regulated pollutant is emitted at a rate of 250 tons per year.
- (a) This existing source is a major stationary source because (? pollutant) is emitted at a rate of 100 tons per year or greater.
- (a) This existing source is a major stationary source because it is in one of the 28 listed source categories and at least one regulated pollutant is emitted at a rate of 100 tons per year or more.
- (a) This existing source is **not** a major stationary source because no attainment regulated pollutant is emitted at a rate of 250 tons per year or more, and it is not in one of the 28 listed source categories.

- (a) This existing source is **not** a major stationary source because no nonattainment regulated pollutant is emitted at a rate of 100 tons per year, and it is not in one of the 28 listed source categories.
- (a) This existing source is **not** a major stationary source because even though it is one of the 28 listed source categories, it does not emit 100 tons per year or greater of any regulated pollutants.
- (a) This existing source is **not** a major source because the source has been issued a FESOP on (? date) with a limit of (? 99 or 90.75 tons per year).
- (b) These emissions were based on (? e.g.: Facility Quick Look Report, dated ?, the Part 70 application submitted by the company, the FESOP issued to the source on ?, or the inspections report dated ?, etc.)

(Delete the proposed modification portion for new sources)

Proposed Modification

(for existing minor source):

PTE from the proposed modification (based on 8,760 hours of operation per year at rated capacity including enforceable emission control and production limit, where applicable):

Pollutant	PM (ton/yr)	PM10 (ton/yr)	SO ₂ (ton/yr)	VOC (ton/yr)	CO (ton/yr)	NO _x (ton/yr)
Proposed Modification						
PSD or Offset Threshold Level	100 or 250	100 or 250	100 or 250	100 or 250	100 or 250	100 or 250

(choose if it is 100 or 250 tons/year, it can not be both)

(use this for attainment county)

This modification to an existing minor stationary source is not major because the emission increase is less than the PSD significant levels. Therefore, pursuant to 326 IAC 2-2, and 40 CFR 52.21, the PSD requirements do not apply.

(use this for nonattainment county)

This modification to an existing minor stationary source is not major because the emission increase is less than the Emission Offset significant levels. Therefore, pursuant to 326 IAC 2-3, the Emission Offset requirements do not apply.

Proposed Modification

(for existing major source)

PTE from the proposed modification (based on 8,760 hours of operation per year at rated capacity including enforceable emission control and production limit, where applicable):

Pollutant	PM (ton/yr)	PM10 (ton/yr)	SO ₂ (ton/yr)	VOC (ton/yr)	CO (ton/yr)	NO _x (ton/yr)
Proposed Modification						
Contemporaneous Increases						
Contemporaneous Decreases						
Net Emissions						
PSD or Offset Significant Level	25	15	40	40	100	40

(do not delete rows, put zeroes on them)

(use this for attainment county)

- (a) This modification to an existing major stationary source is not major because the emissions increase is less than the PSD significant levels. Therefore, pursuant to 326 IAC 2-2, and 40 CFR 52.21, the PSD requirements do not apply.

(use this for nonattainment county)

- (a) This modification to an existing major stationary source is not major because the emissions increase is less than the Emission Offset significant levels. Therefore, pursuant to 326 IAC 2-3, the Emission Offset requirements do not apply.
- (b) The (pollutant) is limited to (?) tons/yr, therefore, (?) requirements do not apply. This limit is equivalent to (?) throughput. *(Show the calculations here)*

Example:

The input VOC is limited to 24 tons/year, therefore, the BACT requirements of 326 IAC 8-1-6 do not apply.

Reminder: For a given unit which is limited under PSD or Emission Offset significant levels or other significant levels, the rest of the pollutants emitted by that unit should also be scaled down accordingly.

Proposed Modification

(for existing FESOP sources who want to keep their FESOP status):
 PTE from the proposed modification (based on 8,760 hours of operation per year at rated capacity including enforceable emission control and production limit, where applicable):

Pollutant	PM (ton/yr)	PM10 (ton/yr)	SO ₂ (ton/yr)	VOC (ton/yr)	CO (ton/yr)	NO _x (ton/yr)	Single HAP (ton/yr)	Combo HAPs (ton/yr)
Proposed Modification								
Existing FESOP Limits F-000-0000, issued on (? date)								
Revised FESOP Limits								
Title V Significant Levels	99 or 90.75	99 or 90.75	99 or 90.75	99 or 90.75	99 or 90.75	99 or 90.75	9 or 8.25	24 or 22
Note: This source will be able to keep its FESOP status.								

(revised this table if you need to add more rows)

This modification to this FESOP stationary source will **not** change the status of the stationary source because the emissions increase is still less than the FESOP significant levels. Therefore, the following requirements will not apply:

- (a) PSD, 326 IAC 2-2, and 40 CFR 52.21,
- (b) Emission Offset, 326 IAC 2-3, and
- (c) Part 70 Permit Program, 326 IAC 2-7.

Part 70 Permit Determination

(for new source)

326 IAC 2-7 (Part 70 Permit Program)

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

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

This is the first air approval issued to this source.

326 IAC 2-7 (Part 70 Permit Program)

This new source is subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

- (a) at least one of the criteria pollutant is greater than or equal to 100 tons per year,
- (b) a single hazardous air pollutant (HAP) is greater than or equal to 10 tons per year, or
- (c) any combination of HAPs is greater than or equal to 25 tons/year.

This new source shall apply for a Part 70 (Title V) operating permit within twelve (12) months after this source becomes subject to Title V.

(for existing sources)

326 IAC 2-7 (Part 70 Permit Program)

This existing source has submitted their Part 70 (T-000-0000-0000) application on (? date). The equipment being reviewed under this permit shall be incorporated in the submitted Part 70 application.

326 IAC 2-8 (FESOP) and 326 IAC 2-7 (Part 70 Permit Program)

This existing source has been issued a FESOP (F-000-0000-0000) on (? date). This source shall apply for a FESOP modification to incorporate the (? operation/equipment) or to apply for a Title V operating permit, within twelve (12) months after the operation of this (equipment).

326 IAC 2-7 (Part 70 Permit Program)

This existing source, including the emissions from this permit **CP-000-0000-00000**, is still not subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

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

This status is based on all the air approvals issued to the source. This status has been verified by the OAM inspector assigned to the source. *(include additional justification where applicable).*

Federal Rule Applicability

(use the condition which is applicable)

There are no New Source Performance Standards (326 IAC 12) and 40 CFR Part 63 applicable to this facility.

This (facility description or equipment) is subject to the New Source Performance Standard, 326 IAC 12, (40 CFR Part 60.(number), Subpart (letter)). *(list the requirements and enclose a copy of the federal rule)*

(If there is a NSPS category that appears to be applicable to the emission unit, but no specific requirement apply or additional requirement restrict the applicability, state why the emission unit is not subject to the rules.)

Examples:

40 CFR Part 60, Subpart OOO

This limestone processing plant is subject to the New Source Performance Standard 326 IAC 12 and 40 CFR 60.670 through 60.676, Subpart OOO. This rule requires the particulate emissions from:

- (a) the crushing operations to be limited to 15 percent opacity or less, and
 - (b) the screening and conveying operations to be limited to 10 percent or less.
- (enclosed is a copy of this federal rule)

40 CFR Part 63, Subpart N and 326 IAC 20-1-1, Chromium Electroplating

Pursuant to 40 CFR 63, Subpart N, and 326 IAC 20-1-1, the chromium electroplating operations are subject to the following conditions:

- (a) The surface tension of the chromium electroplating bath contained with the tank shall not exceed 45 dynes per centimeter at any time during the operation of the tank if a chemical fume suppressant containing a wetting agent is used to demonstrate compliance.
- (b) Each time that surface tension monitoring exceeds 45 dynes/cm, the frequency of monitoring must revert back to every 4 hours of tank operation. After 40 hours of monitoring tank operation every 4 hours with no exceedances, surface tension measurement may be conducted once every 8 hours of tank operation. Once there have been no exceedances during 40 hours of tank operation, surface tension measurement may be conducted once every 40 hours of tank operation on an ongoing basis, until an exceedance occurs.
- (c) An alternative emission limit of 0.01 milligram per day standard cubic meter (mg/dscm) will be applicable if the chromium electroplating bath does not meet the limit above.
- (d) A summary report shall be prepared to document the ongoing compliance status of the chromium electroplating operation. This report shall be completed annually, retained on site, and made available to IDEM upon request. If there are significant exceedance of chromium air emission limits (as defined in 40 CFR Part 63.347(h)(2)), then semiannual reports shall be submitted to:

**Air Compliance Branch, Office of Air Management
Chromium Electroplating, 100 North Senate Avenue
P. O. Box 6015, Indianapolis, Indiana 46206**

- (e) The chromium electroplating operations shall be subject to the recordkeeping and reporting requirement as indicated in the chromium electroplating NESHAP (enclosed is a copy of this federal rule).

40 CFR Part 63, Subpart JJ, National Emission Standards for Wood Furniture Manufacturing Operations

This woodworking operation is not covered by 40 CFR Part 63, Subpart JJ (national Emission Standards for Wood Furniture Manufacturing Operations), because this source is not a major source as defined in 40 CFR Part 63.2

State Rule Applicability

(list all the state rules that apply, examples are shown below)

326 IAC 2-6 (Emission Reporting)

This facility is subject to 326 IAC 2-6 (Emission Reporting), because the source emits more than 10 tons/yr (for specific counties) or 100 tons/yr of VOC. Pursuant to this rule, the owner/operator of this facility must annually submit an emission statement of the facility. The annual statement must be received by April 15 or July 1 of each year and must contain the minimum requirements as specified in 326 IAC 2-6-4.

326 IAC 6-2 (Particulate Emissions Limitations for Sources of Indirect Heating)
(this rule applies to boilers only)

The(? rating MMBTU/hr) natural gas fired boiler is subject 326 IAC 6-2 (Particulate Emissions Limitations for Sources of Indirect Heating). Pursuant to 326 IAC 6-2-4, the particulate matter (PM) emissions shall be limited to ? pounds per million BTU heat input.

Allowable PM emissions = (? lb/MMBTU)*(? MMBTU/hr)*(8760 hr/yr)*(1 ton/2000 lbs) = ? tons/year

Based on this calculations, the controlled potential emissions are less than the allowable emissions, therefore, this boiler complies with the rule.

(on each rule that specifies a limit, indicate if equipment complies with the limit by showing calculations, if applicable, and/or stating based on calculations made, MSDS submitted, etc., the unit complies with the rule)

Air Toxic Emissions

Indiana presently requests applicants to provide information on emissions of the 189 hazardous air pollutants set out in the Clean Air Act Amendments of 1990. These pollutants are either carcinogenic or otherwise considered toxic and are commonly used by industries. They are listed as air toxics on the Office of Air Management (OAM) Construction Permit Application Form Y.

(choose one which is applicable, none of these statements can be used at the same time)

- (a) None of these listed air toxics will be emitted from this proposed construction.
- (b) See attached spreadsheets for detailed air toxic calculations.

(use this if toxic emissions after control are less than 10 tons/yr for single HAP or 25 tons/yr for combination)

- (a) This (? new, modification) will emit levels of air toxics less than those which constitute a major source according to Section 112 of the 1990 Amendments to Clean Air Act.
- (b) See attached spreadsheets for detailed air toxic calculations.

(use this if toxic emissions after control are greater than 10 tons/yr for single HAP or 25 tons/yr for combination)

- (a) This proposed (? new source or modification) will emit levels of air toxics greater than those that constitute major source applicability according to Section 112 of the Clean Air Act. The concentrations of these air toxics were modeled and found to be (in worst case possible) as follows: The concentrations of these air toxics were compared to the Permissible Exposure Limits (PEL) developed by the Occupational Safety and Health Administration (OSHA). The Office of Air Management (OAM) does not have at this time any specific statutory or regulatory authority over these substances.

(delete this item (b) for OWOPs)

- (b) The applicant has been notified in writing that the air toxic emissions exceed the major source applicability levels stated by Section 112 of the Clean Air Act Amendments, and that it would be beneficial, both to the applicant and to the public, for the applicant to take steps to reduce or eliminate these air toxic emissions.
- (c) See attached spreadsheets for detailed air toxic calculations.

Conclusion

The construction of this (? facility description or equipment) will be subject to the conditions of the attached proposed **Construction Permit No. CP-000-0000-00000**.

(fill out the header and page number, remove all italics instructions, and the footer, and not applicable conditions, spell check and proofread the document and make sure no table or paragraph is cut in between.)

Indiana Department of Environmental Management Office of Air Management

Addendum to the Technical Support Document for New Construction and Operation

Source Name: Auburn Foundry
Source Location: West County Road 48, Auburn, IN 46706
County: Dekalb
Construction Permit No.: CP-033-5793-00042
SIC Code: 3321
Permit Reviewer: Keshav Reddy

The Office of Air Management (OAM) has reviewed requests from Auburn Foundry relating to the modification of conditions in its existing construction permit (033-3496). This request was made to relax operation conditions which were put forth in the permit based on old emission factors. Request was also received from Auburn Foundry to change information pertaining to baghouse systems in accordance with the stack test information.

The purpose of the review is to evaluate the changes requested. The changes result in a recalculation of emissions, relaxation of the conditions in the permit and additions of other standardized conditions to the permit

On January 17, 1997, the Office of Air Management (OAM) had a notice published in The Auburn Star, Indiana, stating that Auburn Foundry had requested modifications to its existing permit (CP 033-3496) to construct and operate their gray iron foundry (Plant # 2). The notice also stated that OAM proposed to issue a permit for this installation and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

On February 11, 1997, Auburn Foundry submitted comments on the proposed construction permit. The summary of the comments and corresponding responses is as follows (changes are bolded for emphasis):

Comment 1: The following changes need to be made on Page 1 of 11 of IDEM's proposed construction permit:

- (a): one (1) sand mixing process, with PM controlled by a baghouse, designated as system 1,
- (b): one (1) melting process including the melting of gray iron by three (3) electric induction furnaces, charge handling, and pouring at a maximum rate of 32 tons per hour, with PM controlled by a baghouse, designated as system 2,
- (c): one (1) cleaning and finishing process, with PM controlled by a baghouse, designated as system 3,
- (d): one (1) shakeout process for two (2) individual molding lines, with PM controlled by a baghouse, designated as system 4, and
- (e): one (1) shakeout process for two (2) individual molding lines, and one (1) return sand handling process, with PM controlled by a baghouse, designated as system 5"

Response 1: OAM, IDEM acknowledges the change request and the corresponding changes are shown on the permit.

Comment 2: “ Construction condition #6 (page 2 of 11): we have already submitted an affidavit of construction verifying that construction was complete, and in fact have already received an operation permit validation letter from IDEM. We would again like to emphasize that the revocation of this facilities existing air permit is not required; rather we simply desire to make some minor modifications to the existing air permit. Therefore, the conditions described in this section have already been met. ”

Response 2: OAM, IDEM acknowledges that Auburn Foundry submitted an affidavit of construction after the issuance of CP (033-3496) and the language in the permit (033-5793) is revised to reflect the current situation.

Comment 3: “ Operation conditions # 3 through #6 (page 3 of 11): these conditions were not part of the original air permit for this facility and therefore should not be added now.”

Response 3: Condition #s 3 through 6 are standard conditions that are put in all construction permits by OAM, IDEM, currently. These conditions are applicable to all construction permits and do not trigger any new requirements to Auburn Foundry. These conditions only spell out explicitly some of the important rules that apply to all sources with construction permits. Hence, these conditions are left as is in the permit.

Comment4: “ Operation condition #7 (page 3 of 11): Official state compliance stack testing has already been completed for all baghouse systems at this facility. In addition, a certification report has been submitted to your office for review which verified that we were in compliance with the allowable PM emissions for each baghouse system. “

Response 4: OAM, IDEM acknowledges the stack test performed and also has taken the results into consideration for revised emission calculations. This permit supersedes CP 033-3496, and the content in the condition only spells out general requirements for any stack test. This condition does not spell out additional requirements to Auburn Foundry and hence, OAM intends to leave the condition as is in the permit.

Comment 5: “ Operation condition #8 (page 5 of 11): This condition was not part of the original air permit for this facility, and therefore should not be added now.”

Response 5: Condition 8 (Malfunction conditions) is a standard condition that is put in all construction permits by OAM, IDEM, currently. This condition is applicable to all construction permits and does not trigger any new requirements to Auburn Foundry. This condition only spells out explicitly one of the important rules that apply to all sources with construction permits. Hence, this condition is left as is in the permit

Comment 6: “ Operation condition # 9 (Page 6 of 11:) The production limit on the amount of metal melted per year is no longer required due to the modified emission calculations found in appendix A”

Response 6: OAM, IDEM has recalculated emissions of Auburn Foundry based on the revised emission factors submitted by Auburn Foundry. These calculations are provided in the 'REVISED APPENDIX A' . Based on the revised estimates Auburn Foundry does not need a production limit and hence the corresponding condition is deleted from this permit.

Comment 7: “ Operation condition # 10c (page 6 of 11): The PM emissions shall not exceed the following (based upon modified calculations in appendix A)”

- (i) For system 1, 1.48 lbs PM/hr;
- (ii) For system 2, 4.22 lbs PM/hr;
- (iii) For system 3, 2.11 lbs PM/hr;
- (iv) For system 4, 4.85 lbs PM/hr;
- (v) For system 5, 8.44 lbs PM/hr;

Response 7: OAM, IDEM reviewed the stack test results and also acknowledges the request from Auburn Foundry. The revised emission limits are shown in page 7, operation condition # 9 of the permit.

Comment 8: “ Operation condition #11 (page 6 of 11): The conditions described in section (a) through (e) should be deleted, and this condition relating to baghouse operation should be modified as described below to match the language of the original air permit approved by IDEM:

That all of the baghouses shall be operated at all times when the respective units and processes are in operation at pressure drop demonstrated by the compliance stack tests to comply with the requirements of 326 IAC 6-3”

Response 8: OAM, IDEM has been making ongoing efforts to ensure that sources have continuous compliance with the applicable requirements. This effort also includes development of standardized language for control equipment. The condition # 11(baghouse condition) is revised and presented as condition # 10 on page 6 of the permit document. This condition is important in this permit as it is the only measure to achieve proper maintenance of all baghouses at the plant and hence compliance with the applicable rules.

Comment 9: “ Operation conditions # 12 , # 13 (page 7 of 11) and # 15 (page 8 of 11): these conditions were not part of the original air permit for this facility, and therefore should not be added now”

Response 9: Condition #s 12, 13 and 15 are standard conditions that are put in construction permits by OAM, IDEM, currently. These conditions are applicable to construction permits and are not intended to cause any undue burden or trigger any new requirements to Auburn Foundry. These conditions only spell out explicitly some of the important rules that apply to all sources with construction permits. Hence, these conditions are left as is in the permit document with revised numbers 11, 12 and 13.

Comment 10: ‘Operation condition # 14 (page 8 of 11): A quarterly report documenting compliance with operation condition # 9 is no longer required since this condition has been deleted. Therefore, this condition should be removed from the original air permit for this facility. ’

Response 10: Based on revised calculations, the production limit has been removed and hence the corresponding reporting requirements are also removed from the permit.

Comment 11: “Page 1 of 9 on the TSD: IDEM states that removing operation condition # 5 (the core production limitations) from the original permit CP 033-3496 would remove a production limit thus, allowing a potential increase in PM emissions. IDEM believe this to be a relaxation of BACT, and therefore this permit modification (the removal of operation condition 5 of the original permit) requires a new construction air permit.

However, we believe that the removal of operation condition 5 of the original permit (production limits of 16 tons/ hr of cored metal production and a resin limitation of 24 pounds/ ton of sand) in no way affects PM emissions because we are already permitted to melt at a rate of 32 tons/hr. The fact that cored metal production is no longer limited to 16 tons/hr only affects the VOC emissions, which are generated due to the organic compounds within the core itself. However, PM emissions are generated in the same quantity whether the metal production is cored or non-cored. Therefore, we believe that the proposed deletion of operation condition 5 of the original permit does not require a new construction permit, but rather a simple modification of the original permit.

Response 11: Permit, CP 033-5793, is proposed to supersede the original permit (033-3496). This is to include all the appropriate conditions, modifications and revisions into one permit document. Several changes have been made in the permit review process since the issuance of the original permit and revised terms and conditions due to these changes have also been incorporated. OAM was relaxing and removing conditions from the original permit, which inturn required a public notice period. IDEM will not charge any fee for this review. OAM, IDEM also believes there are no new conditions in the permit that cause any undue burden to Auburn Foundry or trigger requirements to which Auburn was already not required to comply with.

Comment 12 : Auburn Foundry presented a revised stack summary to be incorporated in the TSD.

Response 12 : IDEM presented the stack summary in the proposed permit, as provided by Auburn Foundry in its original application. The following table is added in this addendum to replace the table presented in the proposed TSD:

Stack ID	Operation	Height (ft)	Diameter (ft)	Flow rate (acfm)	Temp (F)
Office boiler	Same	5.0	0.83	Unknown	variable
System 1	Sand mixing	8.67	3.17	24,500	80
System 2	melting	9.0	5.33	72,500	100
System 3	blast cleaning	14.0	3.67	36,500	105
System 4	shakeout lines 3 & 4	12.33	5.33	85,500	100
System 5	Shake out line 1& 2 & return sand system	12.33	7.25	150,600	100

Comment 13: Emission Calculations and Rule Applicability.

Response13: The revised calculations and rule applicability discussions are presented in 'Revised Appendix A '.

REVISED APPENDIX A

Company: Auburn Foundry
West County Road 48, Auburn, IN 46706

Source: Gray Iron Foundry

Status: Removal of BACT and synthetic minor limit of CP 033-3496.
The proposed permit associated with these calculations will supersede the existing permit.

Modification: Removal of 326 IAC 8-1-6 BACT requirements (24 lb resin/ton and 16 ton metal/hr production) and PM emission limits (production limits)

Criteria pollutants emitted: PM, PM10 and VOC

HAPs emitted: Naphthelene, phenol, lead compounds, manganese compounds

I. STATE ALLOWABLE EMISSIONS

The state allowable emissions are the lesser of:

- A. The state potential emission rates, and
- B. The limited allowable emission rates

The following are the calculations determine the state allowable emission rate:

A. State Potential Emissions:

The state potential emissions are determined based on 8,760 hours of operation, emissions before controls, and emission factors obtained from either EPA Airs Source Classification Codes, AP-42, or emission factors developed by the American Foundryman's Association.

1. Electric induction furnace:

The emission factors used are obtained from EPA SCC# 3-04-003-03.

$$\text{ton poll./yr} = \text{ton metal/hr} * 8760 \text{ hr/yr} * 1/2000 \text{ ton/lb} * \text{Ef lb/ton}$$

Pollutant	EF (lb/ton)	Process Rate (ton/hr)	Emissions (ton/yr)
PM	0.90	32	126.14
PM10	0.86	32	120.54

2. Charge Handling:

The emission factors used are obtained from EPA SCC# 3-04-003-15.

$$\text{ton poll./yr} = \text{ton metal/hr} * 8760 \text{ hr/yr} * 1/2000 \text{ ton/lb} * \text{Ef lb/ton}$$

Pollutant	EF (lb/ton)	Process Rate (ton/hr)	Emissions (ton/yr)
PM	0.60	32	84.10
PM10	0.36	32	50.46

3. Pour/ Casting:

The emission factors used are obtained from EPA SCC# 3-04-003-20.

$$\text{ton poll./yr} = \text{ton metal/hr} * 8760 \text{ hr/yr} * 1/2000 \text{ ton/lb} * \text{Ef lb/ton}$$

Pollutant	EF (lb/ton)	Process Rate (ton/hr)	Emissions (ton/yr)
PM	--	--	6.61
PM10	--	--	6.61
SO2	0.02	32	2.80
NOx	0.01	32	1.40

The PM and PM10 emissions are not derived from the above calculations, but from the stack test sampling results. The stack test was based on production schedule of 6360 hrs/yr which resulted in 4.8 tons of PM per year. PM emissions from this process are uncontrolled and PM10 is assumed to be equal to PM. The equation used is shown below:

$$(8760 \text{ hr/yr} / 6360 \text{ hr/yr}) * 4.8 \text{ ton/yr} = 6.61 \text{ ton/yr}$$

4. Casting Cooling:

The emission factors used are obtained from EPA SCC# 3-04-003-25.

$$\text{ton poll./yr} = \text{ton metal/hr} * 8760 \text{ hr/yr} * 1/2000 \text{ ton/lb} * \text{Ef lb/ton}$$

Pollutant	EF (lb/ton)	Process Rate (ton/hr)	Emissions (ton/yr)
PM	1.40	32	196.22
PM10	1.40	32	196.22

5. Shakeout:

The following calculations are based on a production schedule of 8760 hours per year, PM and PM10 emission factors from EPA SCC# 3-04-003-40, and VOC emission factors obtained from the adopted VOC emission factors from testing conducted by the American Foundrymen's Association:

The maximum resin usage rate is determined to be 960,000 pounds of resin per year.

a. VOC emissions:

$$\text{ton VOC/yr} = 960,000 \text{ lb resin/yr} * 1/2000 \text{ to /lb} * \text{Ef lb VOC /lb resin}$$

Chemical Name	mosher Ef lb poll. per lb resin	lb resin per year	VOC ton/yr
formaldehyde	0.000022	960,000	0.01
phenol	0.003904	960,000	1.87
benzene	0.005351	960,000	2.57
toluene	0.000833	960,000	0.40
m-xylene	0.000439	960,000	0.21
o-xylene	0.000132	960,000	0.06
Naphthalene	0.000022	960,000	0.01
aromatic hydrocarbons	0.023377	960,000	11.22
hydrogen cyanide	0.001053	960,000	0.51
		Total	16.86

b. PM and PM10 emissions:

$$\text{ton poll./yr} = \text{ton metal/hr} * 8760 \text{ hr/yr} * 1/2000 \text{ ton/lb} * \text{Ef lb/ton}$$

Pollutant	EF (lb/ton)	Process Rate (ton/hr)	Emissions (ton/yr)
PM	3.20	32	448.51
PM10	0.36	32	313.96

6. Cleaning/ Finishing:

The emission factors used are obtained from EPA SCC# 3-04-003-40.

$$\text{ton poll./yr} = \text{ton metal/hr} * 8760 \text{ hr/yr} * 1/2000 \text{ ton/lb} * \text{Ef lb/ton}$$

Pollutant	EF (lb/ton)	Process Rate (ton/hr)	Emissions (ton/yr)
PM	17.00	20.8	1548.77
PM10	1.7	20.8	154.88

The process rate of 20.8 tons/hr is based on 65% of the metal melted reaching this process.

7. Sand Handling:

The emission factors used are obtained from EPA SCC# 3-04-003-31.

$$\text{ton poll./yr} = \text{ton metal/hr} * 8760 \text{ hr/yr} * 1/2000 \text{ ton/lb} * \text{Ef lb/ton}$$

Pollutant	EF (lb/ton)	Process Rate (ton/hr)	Emissions (ton/yr)
PM	0.65	220	626.34
PM10	0.54	220	520.34

8. Inoculation:

The emission factors used are obtained from AP-42, Table 12-10-7 and EPA SCC # 3-04-003-40

$$\text{ton poll./yr} = \text{ton metal/hr} * 8760 \text{ hr/yr} * 1/2000 \text{ ton/lb} * \text{Ef lb/ton}$$

Pollutant	EF (lb/ton)	Process Rate (ton/hr)	Emissions (ton/yr)
PM	0.4	32	56.06
PM10*	0.4	32	56.06
VOC	0.01	32	1.40

* PM10 is assumed to be equal to PM

9. Boiler Emissions:

The following calculations are based on 8,760 hours of use, natural gas combustion, and EPA SCC# 1-02-006-03:

$$\text{Pollutant} = \frac{1.00\text{mmBtu/hr} * 8760 \text{ hrs/yr} * \text{Ef lb/mmcf}}{1000\text{Btu/cf} * 2000 \text{ lb/ton}}$$

Pollutant	Ef (lb/mmcf)	ton/yr
PM	3.0	0.01
PM10	3.0	0.01
SO2	0.6	negligible
NOx	100	0.44
VOC	5.3	0.02
CO	35	0.15

10. Raw Material Storage Emissions:

The following emissions are based on 8,760 hours of use and emission factors obtained from AP-42, Chapter 8.19. The emissions are as follows:

$$\text{ton poll./yr} = \text{ton metal/hr} * 8760 \text{ hr/yr} * 1/2000 \text{ ton/lb} * \text{Ef lb/ton}$$

material	ton material per hour	PM (ton/yr)	VOC (ton/yr)
Sand	3.3	0.05	-
Bond	1.57	-	0.02
		0.05	0.02

The total state potential emissions are the sum of the individual operation emissions. The following are the total state potential emissions from this source:

OPERATION	PM (tpy)	PM10 (tpy)	SO2 (tpy)	NOx (tpy)	VOC (tpy)	CO (tpy)
Electric induction furnace	126.14	120.54	-	-	-	-
charge handling	84.10	50.46	-	-	-	-
pouring / cooling	6.61	6.61	2.80	1.40	-	-
casting cooling	196.22	196.22	-	-	-	-

shakeout	448.51	313.96	-	-	16.86	-
cleaning / finishing	1548.77	154.88	-	-	-	-
sand handling	626.34	520.34	-	-	-	-
inoculation	56.06	56.06	-	-	1.40	-
boiler emissions	0.01	0.01	-	0.44	0.02	0.15
raw material storage	0.05	-	-	-	0.02	-
TOTAL	3092.81	1419.08	2.80	1.84	18.3	0.15

B. Limited Allowable Emissions:

The PM emissions are limited through 326 IAC 6-3-2. Thus, a limited allowable rate must be determined to compare to the state potential rate. The following calculations determine the 326 IAC 6-3-2 allowable rate.

326 IAC 6-3 Allowable Emission Rate:

The allowable PM emission rate for a maximum process weight rate of 252 tons/hr is determined to be 61.04 lbs PM/hr.

$$\text{process weight rate, ton/hr} = 220 \text{ ton sand/hr} + 32 \text{ ton metal/hr} + 0.05 \text{ ton/hr resin} = 252.05 \text{ ton material/hr}$$

$$E = 55.0 * P^{0.11-40} = 61.04 \text{ lbs PM/hr}$$

$$61.04 \text{ lb PM/hr} * 8760 \text{ hrs/yr} * 1/2000 \text{ ton/lb} = 267.39 \text{ ton PM/yr}$$

This source is one of the 28 listed source categories. Thus the major source level for all criteria pollutants for this source is 100 tons per year. The PM emissions (267 tons/yr) exceed this level. Thus, to avoid the Prevention of Significant Deterioration (PSD) requirements, 326 IAC 2-2 and 40 CFR 52.21, the PM emissions must be further limited to 99 tons/yr, or 22.6 lbs/hr.

Since PM10 is a fraction of PM, limiting the PM emissions will also limit the PM10 emissions. The PM10 emissions are based on the PM limitations are determined to be 45.4 tons per year.

Since the allowable PM emission rates (99 tons/yr and 45.4 tons/yr) are less than the state potential rates of 3092 tons PM/yr and 1419 tons PM10/yr, the 326 IAC 6-3 allowable PM emission rates are used.

Pollutant	PM	PM10	SO2	NOx	VOC	CO
ton/yr	99	45.43	2.80	1.84	1.83	0.15

The state allowable PM and PM 10 emissions exceed 25 tons/yr. Thus a permit is required.

II Federal Potential Emissions

The federal potential emissions are the state potential emissions after controls. The PM and PM10 emissions from all processes except the pouring/casting process emissions are controlled. All other criteria pollutant emissions are uncontrolled and will remain the same. The efficiency of all the baghouses used is 98%.

$$\text{Tons/yr(after controls)} = \text{ton poll./yr (before controls)} * (1 - 0.98)$$

OPERATION	PM (tpy)	PM10 (tpy)	SO2 (tpy)	NOx (tpy)	VOC (tpy)	CO (tpy)
Electric induction furnace	2.52	2.41	-	-	-	-
charge handling	1.68	1.01	-	-	-	-
pouring / cooling	6.61	6.61	2.80	1.40	-	-
casting cooling	3.92	3.92	-	-	-	-
shakeout	8.97	6.28	-	-	16.86	-
cleaning / finishing	30.97	3.1	-	-	-	-
sand handling	12.52	10.4	-	-	-	-
inoculation	1.12	1.12	-	-	1.40	-
boiler emissions	0.002	0.002	-	0.44	0.02	0.15
raw material storage	0.0001	-	-	-	0.02	-
TOTAL	68.31	34.8	2.80	1.84	18.3	0.15

This gray iron foundry is one of the 28 listed categories. Thus, the major source level for all criteria pollutant emissions is 100 tons/yr. The federal potential emissions (68.31tons PM/yr) do not exceed the major source level by 100 tons/yr.

Air Toxic Emissions:

The proposed source will emit the following air toxics:

Air Toxic	Tons/yr
naptha	0.19
phenol	0.44
lead compounds	0.03
Manganese compounds	0.02
Total	0.68

STATE RULE APPLICABILITY

326 IAC 1-6-3, Preventive Maintenance Plans:

Pursuant to 326 IAC 1-6-3, the owner or operator of this source shall prepare and maintain a preventive maintenance plan, including the following information:

- a) Identification of the individual/s responsible for inspection, maintaining, and repairing the control units;
- b) a description of the items that will be inspected and the inspection schedule for said items; and
- c) Identification of the replacement parts which will be maintained in inventory for quick replacement.

The preventive maintenance plan shall be submitted to IDEM, OAM upon request and shall be subject to review and approval. Compliance with this condition is expected.

326 IAC 5, Visible Emission Requirements:

The source is subject to 326 IAC 5. Pursuant to this rule, the visible emissions from any facility of this source shall not exceed the following:

- a) The visible emissions shall not exceed an average of forty percent (40 %) opacity in twenty-four (24) consecutive readings.
- b) the visible emissions shall not exceed sixty percent (60 %) opacity for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) in a six (6) hour period.

The construction permit limits the opacity to 10% at any time, as a part of the means of achieving compliance with the Particulate Matter (PM) emission limitations of 326 IAC 6. Thus, compliance with this condition is considered satisfied by meeting the 10% opacity requirements.

326 IAC 6-3, Particulate matter limitations:

This source is subject to 326 IAC 6-3-2, particulate matter limitations for process operations. Pursuant to 326 IAC 6-3-2, the allowable PM emission rate for a maximum process weight rate of 252 tons/hr is determined to be 61.04 lbs PM/hr.

$$\text{process weight rate, ton/hr} = 220 \text{ ton sand/hr} + 32 \text{ ton metal/hr} + 0.05 \text{ ton/hr resin} = 252.05 \text{ ton material/hr}$$

$$E = 55.0 * P^{0.11-40} = 61.04 \text{ lbs PM/hr}$$
$$61.04 \text{ lb PM/hr} * 8760 \text{ hrs/yr} * 1/2000 \text{ ton/lb} = 267.39 \text{ ton PM/yr}$$

This source is one of the 28 listed source categories. Thus the major source level for all criteria pollutants for this source is 100 tons per year. The PM emissions (267 tons/yr) exceed this level. Thus, to avoid the Prevention of Significant Deterioration (PSD) requirements, 326 IAC 2-2 and 40 CFR 52.21, the PM emissions must be further limited to 99 tons/yr. The hourly equivalent is determined to be 22.6 lbs/hr.

In order to easily stack test any control unit of the source (if deemed necessary) without requiring a simultaneous test of all the baghouses, the single lb PM/hr limit is divided up by control unit (process), grouped by the units' respective operation.

To properly limit the emissions by control unit, the uncontrolled potential PM emissions (6.61 tons/yr) must be subtracted from the 99 ton/yr limit, to an adjusted level of 92 tons/yr (21.09 lb PM/yr).

The grain loadings used to demonstrate compliance with the limitations of 326 IAC 6-3 are based on the grain loadings established in the latest stack tests.

The individual limits, based on the adjusted PM level of 21.09 lb/hr, are determined as follows:

$$\text{pot. PM, ton/yr} = \text{gr/dscf} * \text{dscfm} * 60 \text{ min/hr} * 8760 \text{ hr/yr} * 1/700 \text{ gr/lb} * 1/200 \text{ ton/lb}$$

$$\text{Fraction of pot.} = \text{individual pot. ton PM/yr} / \text{sum (individual pot PM, ton/yr)}$$

$$\text{Individual limit, lb PM/hr} = \text{fraction of potential} * 326 \text{ IAC 6-3-2 limit (21.09 lb PM/hr)}$$

$$\text{Control unit emissions, lb PM/hr} = \text{pot. PM, ton/yr} * 2000 \text{ ton/lb} * 1/8760 \text{ yr/hr}$$

control	gr/dscf	dscfm	pot. ton/yr	fraction of potential	326 IAC 6-3-2, PM limit, lb/hr	PM emissions lb/hr
System 1	0.0072	23,000	6.22	0.07	1.48	1.42
System 2	0.0072	67,000	18.11	0.20	4.22	4.13
System 3	0.0072	33,000	9.03	0.10	2.10	2.07
System 4	0.0072	76,400	20.65	0.23	4.85	4.71
System 5	0.0072	134,500	36.26	0.40	8.44	8.30
Total					21.09	20.63

No PM emissions exceed their respective emission limitations. Thus, compliance is expected.

326 IAC 9, Carbon Monoxide Emission Rules:

The melting units of this source are not subject to the requirements of this rule because the melting units are electric induction furnaces, not cupolas.

326 IAC 11-1, Emission Limitations for Specific Types of Operations:

This source is not subject to the requirements of 326 IAC 11-1 because 326 IAC 6-3 applies.

FEDERAL RULE APPLICABILITY

There are no New Source Performance Standards (NSPS) that apply to this source.