



Mitchell E. Daniels, Jr.
Governor

Thomas W. Easterly
Commissioner

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

TO: Interested Parties / Applicant
DATE: January 31, 2006
RE: Harrison Steel Castings Company / 045-21035-00002
FROM: Paul Dubenetzky
Chief, Permits Branch
Office of Air Quality

Notice of Decision: Approval – Effective Immediately

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

If you wish to challenge this decision, IC 4-21.5-3-7 and IC 13-15-6-1(b) or IC 13-15-6-1(a) require that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office of Environmental Adjudication, 100 North Senate Avenue, Government Center North, Room 1049, Indianapolis, IN 46204.

For an **initial Title V Operating Permit**, a petition for administrative review must be submitted to the Office of Environmental Adjudication within **thirty (30)** days from the receipt of this notice provided under IC 13-15-5-3, pursuant to IC 13-15-6-1(b).

For a **Title V Operating Permit renewal**, a petition for administrative review must be submitted to the Office of Environmental Adjudication within **fifteen (15)** days from the receipt of this notice provided under IC 13-15-5-3, pursuant to IC 13-15-6-1(a).

The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

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

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

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

Pursuant to 326 IAC 2-7-18(d), any person may petition the U.S. EPA to object to the issuance of an initial Title V operating permit, permit renewal, or modification within sixty (60) days of the end of the forty-five (45) day EPA review period. Such an objection must be based only on issues that were raised with reasonable specificity during the public comment period, unless the petitioner demonstrates that it was impracticable to raise such issues, or if the grounds for such objection arose after the comment period.

To petition the U.S. EPA to object to the issuance of a Title V operating permit, contact:

U.S. Environmental Protection Agency
401 M Street
Washington, D.C. 20406

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



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We make Indiana a cleaner, healthier place to live.

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Mr. Pete Bodine
Harrison Steel Castings Company
900 Mound Street
P. O. Box 60
Attica, IN 47918

January 31, 2006

Re: 045-21035
Fourth Significant Source Modification to
Part 70 Permit No.: 045-6002-00002

Dear Mr. Bodine:

Harrison Steel Castings Company was issued a Part 70 permit on November 30, 2001, for the operation of a steel and ductile iron castings plant. An application to modify the source was received by the Office of Air Quality (OAQ) on March 28, 2005. Pursuant to the provisions of 326 IAC 2-7-10.5(f)(4), a significant source modification to this permit is hereby approved as described in the attached Technical Support Document.

The modification includes the addition of a new core line to supplement the existing core production facilities and the replacement of a Shot Blast unit L3/4-NTT with a new shot blast unit as follows:

- (a) One core line, identified as "Over 500 lb Core Line", including a Pepset mold making machine with a maximum capacity of 45 tons per hour, a sand mixer with a maximum capacity of 1,500 pounds per minute, two (2) 350-ton sand storage silos, one (1) 150-ton sand storage silo, and three (3) sand transporters, controlled by two (2) bin vents and one (1) 5,000 cfm dust collector.
- (b) ~~Two (2)~~ **One (1)** twin table blast machines, identified as ~~L3/4-NTT~~ and L3/4 - STT, both constructed in 1961 each with a maximum capacity of 25 tons of steel per hour with emissions from ~~L3/4-NTT controlled by baghouse DC16~~ and emissions from L3/4 - STT controlled by baghouse DC18.

One (1) blast machine, identified as LN4-3 Wheel Blast, with a maximum capacity of 25 tons of steel per hour with emissions controlled by baghouse DC16.

The following construction conditions shall apply:

General Construction Conditions

1. The data and information supplied with the application shall be considered part of this source modification approval. Prior to any proposed change in construction which may affect the potential to emit (PTE) of the proposed project, the change must be approved by the Office of Air Quality (OAQ).

2. This approval 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.
3. Effective Date of the Permit
Pursuant to IC 13-15-5-3, this approval becomes effective upon its issuance.
4. Pursuant to 326 IAC 2-1.1-9 and 326 IAC 2-7-10.5(i), the Commissioner may revoke this approval 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. All requirements and conditions of this construction approval shall remain in effect unless modified in a manner consistent with procedures established pursuant to 326 IAC 2.
6. Pursuant to 326 IAC 2-7-10.5(l) the emission unit constructed under this approval shall not be placed into operation prior to revision of the source's Part 70 Operating Permit to incorporate the required operation conditions.

This significant source modification authorizes construction of the core line and the blast machine LN4-3. Operating conditions shall be incorporated into the Part 70 operating permit as a significant permit modification in accordance with 326 IAC 2-7-10.5(l)(2) and 326 IAC 2-7-12. Operation is not approved until the significant permit modification has been issued.

This decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21.5-3-5. If you have any questions on this matter, please contact Alic Bent, c/o OAQ, 100 North Senate Avenue, Indianapolis, Indiana, 46204, or at 973-575-2555, extension 3206, or dial 1-800-451-6027, and ask for extension 3-6878.

Sincerely,

Original signed by
Paul Dubenetzky, Chief
Permits Branch
Office of Air Quality

Attachments
AB / EVP

cc: File - Fountain County
U.S. EPA, Region V
Fountain County Health Department
Air Compliance Section Inspector – Dick Sekula
Compliance Data Section - Karen Ampil
Administrative and Development
Technical Support and Modeling



Mitchell E. Daniels, Jr.
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PART 70 OPERATING PERMIT OFFICE OF AIR QUALITY

**Harrison Steel Castings Company
900 North Mound Street
Attica, Indiana 47918**

(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.: T045-6002-00002	
Original signed by: Janet G. McCabe, Assistant Commissioner Office of Air Quality	Issuance Date: November 30, 2001 Expiration Date: November 30, 2006
First Significant Source Modification No.: 045-12788-00002	Issuance Date: June 13, 2001
First Minor Permit Modification No.: 045-15172-00002	Issuance Date: April 23, 2002
First Minor Source Modification No.: 045-20502-00002	Issuance Date: February 25, 2005
Second Significant Source Modification No. 045-19746-00002	Issuance Date: March 15, 2005
First Significant Permit Modification No. 045-20240-00002	Issuance Date: May 13, 2005
Second Significant Permit Modification No. 045-20409-00002	Issuance Date: August 24, 2005
Third Significant Permit Modification No. 045-21589-00002	Issuance Date: December 30, 2005
Fourth Significant Source Modification No.:045-21035-00002	Pages Affected: 1, 6, 8, 11, 46-49, 70, 71 and 79
Issued by: Original signed by Paul Dubenetzky Assistant Commissioner Office of Air Quality	Issuance Date: January 31, 2006

- (b) One (1) casting cooling operation, identified as POUR, constructed in or before 1951 with a maximum capacity of 20 tons of melted steel per hour and 183.68 tons of sand per hour with emissions uncontrolled.
 - (c) One (1) pouring/casting operation, identified as LDL, constructed in 1950, with a maximum capacity of 4.5 tons of melted steel per hour and 24.32 tons of sand per hour with emissions uncontrolled.
 - (d) One (1) casting cooling operation, identified as LDL, constructed in 1950, with a maximum capacity of 4.5 tons of melted steel per hour and 24.32 tons of sand per hour with emissions uncontrolled.
 - (e) One (1) shakeout system, identified as North Shakeout, constructed in 1958, with a maximum capacity of 2.29 tons of steel per hour and 8 tons of sand per hour with emissions controlled by two (2) baghouses, identified as DC2 and DC3.
 - (f) One (1) shakeout system, identified as South Shakeout, constructed in 1965, with a maximum capacity of 57.14 tons of steel per hour and 200 tons of sand per hour with emissions controlled by two (2) baghouses, identified as DC12 and DC9.
- (4) One (1) magnesium treatment operation for producing ductile iron castings, identified as DCTLE, constructed in 1987, with a maximum capacity of 4.5 tons of steel per hour with emissions uncontrolled.
- (5) The shot blasting operations consisting of the following;
- (a) One (1) twin table blast machine, identified as L3/4 - STT, constructed in 1961, with a maximum capacity of 25 tons of steel per hour with emissions controlled by baghouse DC18.
 - (b) One (1) blast machine, identified as LN4-3 Wheel Blast, constructed in 2006, with a maximum capacity of 25 tons of steel per hour with emissions controlled by baghouse DC16.
 - (c) One (1) Nelle Belle shotblast machine, identified as Nelle, constructed in 1955 with a maximum capacity of 60 tons of steel per hour with emissions controlled by a baghouse, identified as DC7.
 - (d) One (1) Wheelabrator Frye shotblast machine, identified as #16 Monorail, constructed in 1976 with a maximum capacity of 25.7 tons of metal per hour with emissions controlled by a baghouse, identified as DC17.
 - (e) Two (2) room blast machines, identified as LN3-Rm and LN5-S Rm, constructed in 1962 and 1967, respectively, with a maximum capacity of 8 tons of steel per hour each with emissions from LN3-RM controlled by baghouse DC30 and emissions from LN5-S Rm controlled by baghouse DC28.
 - (f) One (1) room blast machine, identified as LN5-N, constructed in 1960 with a maximum capacity of 10 tons of steel per hour with emissions controlled by a baghouse, identified as DC11.
 - (g) One (1) room blast machine, identified as LN2-N, constructed in 1981 with a maximum capacity of 13 tons of steel per hour with emissions controlled by a baghouse, identified as DC23.

- (e) mechanical reclaim operations with a maximum capacity of 47.2 tons of sand per hour, with emissions controlled by a baghouse identified as DC45 and exhausting to stack DC45;
- (f) one natural gas fired thermal reclaimer, with a maximum heat input capacity of 2.83 million Btu per hour, with a maximum capacity of 2.85 tons of sand per hour, with emissions controlled by a baghouse identified as DC46 and exhausting to stack DC46;
- (g) phenolic urethane no-bake mold making operations with a maximum capacity of 47.2 tons of sand per hour. The mold making operation consists of the following equipment.
 - (1) one enclosed mixer for combining mold sand with resin, with VOC emissions controlled by the thermal sand reclaimer;
 - (2) strike off operations;
 - (3) rollover draw/strip operations;
 - (4) one natural gas fired preheat tunnel with a maximum heat input capacity of 0.8 million Btu per hour;
 - (5) mold wash operations with a maximum capacity of 230.69 pounds of mold wash per hour, which is equivalent to 11.34 gallons of mold wash per hour;
 - (6) one natural gas fired drying (curing) oven, with a maximum heat input capacity of 3.2 million Btu per hour; and
 - (7) one mold closer process which puts the two halves of the mold together.

Note: Each individual shakeout unit has a maximum design capacity of 10 tons of metal per hour; however, the pouring and cooling operations bottleneck the shakeout process, such that the total hourly rate at shakeout cannot exceed 15.73 tons of metal per hour.

- (11) One core line, identified as "Over 500 lb Core Line", constructed in 2006, including:
 - (a) one (1) phenolic urethane no bake mold making machine with a maximum capacity of 45 tons per hour;
 - (b) one (1) sand mixer with a maximum capacity of 45 tons per hour;
 - (c) one (1) 350-ton sand storage silo;
 - (d) two (2) 100 ton sand storage silo;
 - (e) one (1) sand transporter;
 - (f) two (2) compaction tables; and
 - (g) two (2) sand heaters

the sand silos and sand mixer are controlled by two (2) bin vents.

SECTION D.5

FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]

The shot blasting operations consisting of the following:

- (a) One (1) twin table blast machine, identified as L3/4 - STT, constructed in 1961, with a maximum capacity of 25 tons of steel per hour with emissions controlled by baghouse DC18.
- (b) One (1) blast machine, identified as LN4-3 Wheel Blast, constructed in 2006, with a maximum capacity of 25 tons of steel per hour with emissions controlled by baghouse DC16.
- (c) One (1) Nelle Belle shotblast machine, identified as Nelle, constructed in 1955 with a maximum capacity of 60 tons of steel per hour with emissions controlled by a baghouse, identified as DC7.
- (d) One (1) Wheelabrator Frye shotblast machine, identified as #16 Monorail, constructed in 1976 with a maximum capacity of 25.7 tons of metal per hour with emissions controlled by a baghouse, identified as DC17.
- (e) Two (2) room blast machines, identified as LN3-Rm and LN5-S Rm, constructed in 1962 and 1967, respectively, with a maximum capacity of 8 tons of steel per hour each with emissions from LN3-RM controlled by baghouse DC30 and emissions from LN5-S Rm controlled by baghouse DC28.
- (f) One (1) room blast machine, identified as LN5-N, constructed in 1960 with a maximum capacity of 10 tons of steel per hour with emissions controlled by a baghouse, identified as DC11.
- (g) One (1) room blast machine, identified as LN2-N, constructed in 1981 with a maximum capacity of 13 tons of steel per hour with emissions controlled by a baghouse, identified as DC23.
- (h) One (1) tumble blast machine, identified as LN1-TMBL, constructed in 1945 with a maximum capacity of 4.5 tons of steel per hour with emissions controlled by a baghouse, identified as DC10.
- (i) One (1) blast machine, identified as LN7-3 wheel blast, constructed in 2004 with a maximum capacity of 25 tons of steel per hour with emissions controlled by a baghouse, identified as DC8.
- (j) One (1) monorail blast machine, identified as #18 Monorail, constructed in 1980 with a maximum capacity of 11.4 tons of steel per hour with emissions controlled by a baghouse, identified as DC21.
- (k) One (1) room blast machine, identified as LN2-S Rm, constructed in 1979 with a maximum capacity of 7 tons of steel per hour with emissions controlled by a baghouse, identified as DC33.
- (l) One (1) chill room tumble blast machine, identified as Chill Tmbl, constructed July 1, 1977, with a maximum capacity of 11.4 tons of steel per hour with emissions controlled by a baghouse, identified as DC6.
- (m) One (1) chill room cabinet blast machine, identified as Chill Cbnt, constructed in 1978 with a maximum capacity of 11.4 tons of steel per hour with emissions controlled by a baghouse, identified as DC6.
- (n) One (1) pangborn rotoblast machine identified as LN2-T, to be constructed by 2005 with a maximum capacity of 6 tons of steel per hour with emissions controlled by baghouse, identified as DC-22.

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

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

D.5.1 Particulate Matter (PM) [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the following conditions shall apply:

- (a) The allowable PM emission rate from baghouse DC18 controlling the shotblast machine identified as the twin table shotblast machine L3/4-STT, shall not exceed 35.4 pounds per hour when operating at a process weight rate of 25 tons of metal castings per hour.
- (b) The allowable PM emission rate from baghouse DC16 controlling the blast machine identified as LN4-3 Wheel Blast, shall not exceed 35.4 pounds per hour when operating at a process weight rate of 25 tons of metal castings per hour.
- (c) The allowable PM emission rate from the baghouse DC7 controlling the shotblast machine identified as the Nelle Belle shotblast machine (Nelle) shall not exceed 46.3 pounds per hour when operating at a process weight rate of 60 tons of metal castings per hour.
- (d) The allowable PM emission rate from the baghouse DC17 controlling the shotblast machine identified as the Wheelabrator Frye shotblast machine (#16 Monorail) shall not exceed 36.1 pounds per hour when operating at a process weight rate of 25.7 tons of metal castings per hour.
- (e) The allowable PM emission rate from each of the baghouses DC30 and DC28 controlling the shotblast machines identified as the room blast shotblast machines LN3-Rm and LN5-S Rm, shall not exceed 16.5 pounds per hour when operating at a process weight rate of 8 tons of metal castings per hour each.
- (f) The allowable PM emission rate from the baghouse DC11 controlling the shotblast machine identified as the room blast shotblast machine LN5-N shall not exceed 19.2 pounds per hour when operating at a process weight rate of 10 tons of metal castings per hour.
- (g) The allowable PM emission rate from the baghouse DC23 controlling the shotblast machine identified as the room blast shotblast machine LN2-N shall not exceed 22.9 pounds per hour when operating at a process weight rate of 13 tons of metal castings per hour.
- (h) The allowable PM emission rate from the baghouse DC10 controlling the shotblast machine identified as the tumble blast shotblast machine LN1-TMBL shall not exceed 11.2 pounds per hour when operating at a process weight rate of 4.5 tons of metal castings per hour.
- (i) The allowable PM emission rate from the baghouse DC8 controlling the shotblast machine identified as the LN7-3 wheel blast shall not exceed 35.4 pounds per hour when operating at a process weight rate of 25 tons of metal castings per hour.
- (j) The allowable PM emission rate from the baghouse DC21 controlling the shotblast machine identified as the #18 monorail shotblast machine shall not exceed 20.9 pounds per hour when operating at a process weight rate of 11.4 tons of metal castings per hour.
- (k) The allowable PM emission rate from the baghouse DC33 controlling the shotblast machine identified as the room blast shotblast machine LN2-S Rm shall not exceed 15.1 pounds per hour when operating at a process weight rate of 7 tons of metal castings per hour.

- (l) The allowable PM emission rate from the baghouse DC6 controlling the shotblast machines identified as the chill room tumble blast shotblast machine (Chill Tmbl) and the chill room cabinet blast shotblast machine (Chill Cbnt) shall not exceed 33.3 pounds per hour when operating at a combined process weight rate of 22.8 tons of metal castings per hour.
- (m) The allowable PM emission rate from the baghouse DC22 controlling the shotblast machine identified as LN2-T rotoblast shall not exceed 13.62 pounds per hour when operating at a process weight rate of 6 tons of metal castings per hour.

The pounds per hour limitations for (a), and (c) through (l) above were calculated with the following equation:

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

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

The pounds per hour limitation for (b) above was calculated with the following equation: Interpolation and extrapolation of the data for the process weight rate greater than 60,000 pounds per hour shall be accomplished by use of the equation:

$$E = 55 P^{0.11} - 40 \quad \text{where } E = \text{rate of emission in pounds per hour; and} \\ P = \text{process weight rate in tons per hour}$$

D.5.2 Prevention of Significant Deterioration (PSD) [326 IAC 2-2]

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

- (a) The PM emissions from the baghouse DC23 controlling the LN2-N shot blast machine shall not exceed 5.48 pounds per hour.
- (b) The PM emissions from the baghouse DC21 controlling the #18 Monorail shot blast machine shall not exceed 5.48 pounds per hour.
- (c) The PM emissions from the baghouse DC33 controlling the LN2-S Rm shot blast machine shall not exceed 5.48 pounds per hour.
- (d) The PM emissions from the baghouse DC6 controlling the Chill room tumble blast shot blast machine (Chill Tmbl) and the Chill room cabinet blast shotblast machine (Chill Cbnt) shall not exceed 5.48 pounds per hour.
- (e) The PM emissions from the baghouse DC8 controlling the LN7-3 shot blast machine shall not exceed 4.50 pounds per hour.
- (f) The PM emissions from the baghouse DC22 controlling the LN2-T shot blast machine shall not exceed 1.18 pounds per hour.
- (g) The PM10 emissions from the baghouse DC8 controlling the LN7-3 shot blast machine shall not exceed 2.70 pounds per hour.
- (h) The PM10 emissions from the baghouse DC22 controlling the LN2-T shot blast machine shall not exceed 0.70 pounds per hour.
- (i) The PM emissions from the baghouse DC16 controlling the LN4-3 Wheel Blast machine

shall not exceed 4.25 pounds per hour.

- (j) The PM10 emissions from the baghouse DC16 controlling the LN4-3 shot blast machine shall not exceed 2.70 pounds per hour.

Therefore, the requirements of 326 IAC 2-2 (PSD) shall not apply.

D.5.3 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for each of the control devices listed in this section.

Compliance Determination Requirements

D.5.4 Particulate Matter

In order to comply with the requirements of Conditions D.5.1 and D.5.2, the following conditions shall apply:

- (a) The baghouse, DC16, for PM and PM10 control shall be in operation at all times when the LN4-3 wheel blast machine is in operation.
- (b) The baghouse, DC18, for PM and PM10 control shall be in operation at all times when the L3/4-STT shot blast machine is in operation.
- (c) The baghouse, DC7, for PM and PM10 control shall be in operation at all times when the Nelle Belle shot blast machine is in operation.
- (d) The baghouse, DC17, for PM and PM10 control shall be in operation at all time when the Wheelabrator Frye shot blast machine is in operation.
- (e) The baghouse, DC30, for PM and PM10 control shall be in operation at all times when the LN3-Rm shot blast machine is in operation.
- (f) The baghouse, DC28, for PM and PM10 control shall be in operation at all times when the LN5-SRm shot blast machine is in operation.
- (g) The baghouse, DC11, for PM and PM10 control shall be in operation at all times when the LN5-N shot blast machine is in operation.
- (h) The baghouse, DC23, for PM and PM10 control shall be in operation at all times when the LN2-N shot blast machine is in operation.
- (i) The baghouse, DC10, for PM and PM10 control shall be in operation at all times when the LN1-TMBL shot blast machine is in operation.
- (j) The baghouse, DC8, for PM and PM10 control shall be in operation at all times when the LN7-3 shot blast machine is in operation.
- (k) The baghouse, DC21, for PM and PM10 control shall be in operation at all times when the #18 Monorail shot blast machine is in operation.
- (l) The baghouse, DC33, for PM and PM10 control shall be in operation at all times when the LN2-S Rm shot blast machine is in operation.
- (m) The baghouse, DC6, shall be in operation at all times when the Chill Tmb1 and Chill Cbnt shot blast machines are in operation.
- (n) The baghouse, DC22, for PM and PM10 control shall be in operation at all times when the LN2-T shot blast machine is in operation.

SECTION D.11

FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]

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

One core line, identified as "Over 500 lb Core Line", constructed in 2006, including:

- (a) one (1) phenolic urethane no bake mold making machine with a maximum capacity of 45 tons per hour;
- (b) one (1) sand mixer with a maximum capacity of 45 tons per hour;
- (c) one (1) 350-ton sand storage silo;
- (d) two (2) 100 ton sand storage silo;
- (e) one (1) sand transporter;
- (f) two (2) compaction tables; and
- (g) two (2) sand heaters

the sand silos and sand mixer are controlled by two (2) bin vents.

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

D.11.1 VOC Emissions [326 IAC 8-1-6] [326 IAC 2-2]

The following conditions shall apply to the "Over 500 lb Core Line":

- (a) The total resin usage for the "over 500 lb core line", constructed in 2006, shall be limited to less than 996,000 pounds of resin per 12 consecutive month period with compliance determined at the end of each month. This is equivalent to VOC emissions of less than 25 tons per year.
- (b) The VOC emissions from the "over 500 lb core line" shall not exceed 0.05 pounds of VOC per pound of core resin.

Therefore, the requirements of 326 IAC 8-1-6 (BACT) and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) do not apply.

D.11.2 Prevention of Significant Deterioration (PSD) [326 IAC 2-2]

The following conditions shall apply:

- (a) The PM emissions from the sand system at the "over 500 lb core line" shall not exceed 7.96 pounds per ton of sand.
- (b) The PM-10 emissions from the sand system at the "over 500 lb core line" shall not exceed 3.41 pounds per ton of sand.

Therefore, the requirements of 326 IAC 2-2 (PSD) shall not apply.

D.11.3 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for the dust collector and bin vents controlling the "over 500 lb core line" listed in this section.

Compliance Determination Requirements

D.11.4 Particulate Matter

In order to comply with condition D.11.2, the control equipment for particulate control shall be in operation and control emissions from the sand system at the "over 500 lb core line" at all times that the sand system at the "over 500 lb core line" is in operation.

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

D.11.5 Record Keeping Requirements

- (a) In order to document compliance with Condition D.11.1, the Permittee shall maintain records of the amount of resin usage in the "over 500 lb core line", each month of operation.
- (b) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.11.6 Reporting Requirements

A quarterly summary of the information to document compliance with Conditions D.11.1(a) shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

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

Part 70 Quarterly Report

Source Name: Harrison Steel Castings Company
Source Address: 900 North Mound Street, Attica, Indiana 47918
Mailing Address: P.O. Box 60, Attica, Indiana 47918
Part 70 Permit No.: T045-6002-00002
Facility: "Over 500 lb Core Making Machine" (constructed in 2006)
Parameter: VOC
Limit: Total resin usage for the "Over 500 lb Core Machine" (constructed in 2006) shall be limited to less than 996,000 pounds of resin per 12 consecutive month period with compliance determined at the end of each month.

YEAR:

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

No deviation occurred in this quarter.

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

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

Attach a signed certification to complete this report.

Indiana Department of Environmental Management Office of Air Quality

Addendum to the Technical Support Document (TSD) for a Significant Source Modification and Significant Permit Modification to a Part 70 Operating Permit

Source Background and Description

Source Name:	Harrison Steel Castings Company
Source Location:	900 North Mound Street, Attica, IN 47918
County:	Fountain
SIC Code:	3321 and 3325
Operation Permit No.:	T045-6002-00002
Operation Permit Issuance Date:	November 30, 2001
Significant Source Modification No.:	045-21035-00002
Significant Permit Modification No.:	045-21159-00002
Permit Reviewer:	Alic Bent/EVP

On September 15, 2005, the Office of Air Quality (OAQ) had a notice published in the Fountain County Neighbor, Attica, Indiana, stating that Harrison Steel Castings Company had applied for a significant source modification and significant permit modification to Part 70 permit T045-6002-00002. This notice was for the addition of a new core line to supplement the existing core production facilities and the replacement of a Shot Blast unit L3/4-NTT with a new shot blast unit. The notice also stated that OAQ proposed to issue a permit for this operation and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

On October 12, 2005, OAQ received comments from Harrison Steel Castings Company on the proposed source and permit modifications. Upon further consideration, IDEM, OAQ has decided to make changes to the permit as indicated below. The summary of the comments and corresponding responses is shown below. Changes made to the permit as a result of the comments are shown in bold and deleted permit language is shown with a line through it. Any permit changes affecting the permit's Table of Contents are also revised without replication herein.

Comment 1:

Sections A.2(11) and D.11, Over 500 lb Core Line Description. We have made a few minor changes to the equipment we intend to install. The proposed changes will not impact the estimates of emissions or level of control. Please modify the descriptions in these sections to read as follows:

*One core line, identified as "Over 500 lb Core Line", constructed in 2005, including a ~~Pepset~~ **phenolic urethane no bake** mold making machine with a maximum capacity of 45 tons per hour, a sand mixer with a maximum capacity of **45 tons per hour**, ~~4,500 pounds per minute~~, ~~two (2)~~ **one (1)** 350-ton sand storage silos, ~~one (1)~~ **two (2)** ~~150~~ **100** ton sand storage silo, and ~~three (3)~~ **one (1)** sand transporters, **two (2) compaction tables**, **two (2) sand heaters**, controlled by ~~two (2)~~ **two (2)** bin vents ~~and one (1)~~ ~~5,000 cfm dust collector~~.*

Response to Comment 1:

IDEM has determined that the 5000 cfm baghouse controlling PM and PM10 emissions from the “over 500 lb core line” is not required to show compliance with Condition D.11.2. The control of the PM and PM10 emissions will be accomplished by the bin vents. Therefore, the baghouse and all conditions associated with it have been removed from Section D.11.

The “Over 500 lb Core Line” description has been changed in Sections A.2(11) and D.11 of the permit as follows:

One core line, identified as “Over 500 lb Core Line”, constructed in ~~2005~~ **2006**, including:

- (a) **one (1) a Pepset phenolic urethane no bake mold making machine with a maximum capacity of 45 tons per hour;**
- (b) **one (1) sand mixer with a maximum capacity of 45 tons per hour; ~~4,500 pounds per minute,~~**
- (c) ~~two (2)~~ **one (1) 350-ton sand storage silos;**
- (d) ~~one (1)~~ **two (2) 150 100 ton sand storage silos;**
- (e) ~~and three (3)~~ **one (1) sand transporters;**
- (f) **two (2) compaction tables; and**
- (g) **two (2) sand heaters**

the sand silos and sand mixer are controlled by two (2) bin vents and ~~one (1) 5,000 cfm dust collector.~~

Comment 2:

Condition D.11.1, VOC emissions. We request that paragraph (c) of this condition be removed. The VOC emissions from this process are a function of the amount of resin used as limited by paragraphs (a) and (b) of this condition and not the amount of sand used as limited by paragraph (c). If in the future we are able to use less resin per ton of sand, then we should be able to produce more cores (i.e. use more sand) without increasing VOC emissions above 25 tons per year.

Response to Comment 2:

IDEM, OAQ has decided that Condition D.11.1 (c) and the corresponding reporting form will be removed since the VOC emissions from the “Over 500 lb Core Line” are a function of the amount of resin used as limited by paragraphs (a) and (b) of this condition and not the amount of sand used as limited by paragraph (c). Conditions D.11.2 (a) and (b) have been re-written in terms of pounds per ton, instead of pounds per hour. Therefore, Conditions D.11.1, D.11.2, D.11.9 (now re-numbered D.11.8) and D.11.10 (now re-numbered D.11.9) have been revised.

D.11.1 VOC Emissions [326 IAC 8-1-6] [326 IAC 2-2]

The following conditions shall apply to the “over 500 lb core line”:

- (a) The total resin usage for the “over 500 lb core line”, constructed in ~~2005~~ **2006**, shall be limited to less than 996,000 pounds of resin per 12 consecutive month period with compliance determined at the end of each month. This is equivalent to VOC emissions of less than 25 tons per year.
- (b) The VOC emissions from the “over 500 lb core line” shall not exceed 0.05 pounds of VOC per pound of core resin.

- ~~(c) The sand throughput to the "over 500 lb core line" shall not exceed 49,800 tons per 12 consecutive month period with compliance determined at the end of each month.~~

D.11.2 Prevention of Significant Deterioration (PSD) [326 IAC 2-2]

The following conditions shall apply:

- (a) The PM emissions from the sand system at the "over 500 lb core line" shall not exceed ~~1.4 pound per hour~~ **7.96 pounds per ton of sand**.
- (b) The PM-10 emissions from the sand system at the "over 500 lb core line" shall not exceed ~~0.6 pound per hour~~ **3.41 pounds per ton of sand**.

Therefore, the requirements of 326 IAC 2-2 (PSD) shall not apply.

D.11.95 Record Keeping Requirements

- (a) In order to document compliance with Condition D.11.1, the Permittee shall maintain records ~~of the in accordance with (1) and (2) below.~~

~~(1) The amount of resin usage in the "over 500 lb core line", each month of operation; and.~~

~~(2) The sand throughput to the sand system at the "over 500 lb core line", each month of operation.~~

D.11.406 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.11.1 **(a)** shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

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

Part 70 Quarterly Report

Source Name: ~~Harrison Steel Castings Company~~
 Source Address: ~~900 North Mound Street, Attica, Indiana 47918~~
 Mailing Address: ~~P.O. Box 60, Attica, Indiana 47918~~
 Part 70 Permit No.: ~~T045-6002-00002~~
 Facility: ~~"Over 500 lb Core Making Machine" (constructed in 2006)~~
 Parameter: ~~Sand Throughput~~
 Limit: ~~49,800 tons per 12 consecutive month period with compliance determined at the end of each month.~~

YEAR:

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

No deviation occurred in this quarter.

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

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

Attach a signed certification to complete this report.

Comment 3:

Condition D.11.5, Visible Emissions Notations; D.11.6, Parametric Monitoring; D.11.7, Baghouse Inspections; D.11.8, Broken or Failed Bag Detection; and D.11.9, Recordkeeping Requirements - paragraphs (b), (c) and (d). We request that these conditions be eliminated from the permit, since we no longer plan to use a baghouse to control emissions. The control of the PM emissions will be accomplished by the bin vents. The bin vents will be exhausted at a flow rate of approximately 1,000 cfm each and as such would be considered insignificant activities.

Response to Comment 3:

IDEM agrees that the bin vents are very small, and as such would not require compliance monitoring. Therefore, the compliance monitoring requirements in Conditions D.11.5 through D.11.8, and the related recordkeeping requirements in Condition D.11.9 have been deleted.

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

~~D.11.5 Visible Emissions Notations~~

- ~~(a) Daily visible emission notations of the sand system at the "over 500 lb core line" stack exhaust shall be performed during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.~~
- ~~(b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.~~
- ~~(c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.~~
- ~~(d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.~~
- ~~(e) The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records and Reports shall be considered a deviation from this permit.~~

~~D.11.6 Parametric Monitoring~~

~~The Permittee shall record the total static pressure drop across the control equipment used in conjunction with the sand system at the "over 500 lb core line", at least once per shift when the sand system at the "over 500 lb core line" is in operation. When for any one reading, the pressure drop across the control equipment is outside the normal range of 3.0 and 6.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports, shall be considered a deviation from this permit.~~

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

D.11.7 Baghouse Inspections

~~An inspection shall be performed each calendar quarter of all bags controlling the sand system at the "over 500 lb core line". Inspections required by this condition shall not be performed in consecutive months. All defective bags shall be replaced.~~

D.11.8 Broken or Failed Bag Detection

~~In the event that bag failure has been observed.~~

- ~~(a) For multi-compartment units, the affected compartments will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if there are no visible emissions or if the event qualifies as an emergency and the Permittee satisfies the emergency provisions of this permit (Section B – Emergency Provisions). Within eight (8) business hours of the determination of failure, response steps according to the timetable described in the Compliance Response Plan shall be initiated. For any failure with corresponding response steps and timetable not described in the Compliance Response Plan, response steps shall be devised within eight (8) business hours of discovery of the failure and shall include a timetable for completion. Failure to take response steps in accordance with Section C – Compliance Response Plan – Preparation, Implementation, Records, and Reports, shall be considered a violation of this permit.~~
- ~~(b) For single compartment baghouses failed units and the associated process will be shut down immediately until the failed units has been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B – Emergency Provisions).~~

D.11.95 Record Keeping Requirements

- ~~(b) To document compliance with Condition D.11.5, the Permittee shall maintain records of visible emission notations of the sand system at the "over 500 lb core line" stack exhaust once per shift.~~
- ~~(c) To document compliance with Condition D.11.6, the Permittee shall maintain records once per shift of the pressure drop during normal operation when venting to the atmosphere.~~
- ~~(d) To document compliance with Condition D.11.7, the Permittee shall maintain records of the results of the inspections required under Condition D.11.7.~~
- ~~(e) To document compliance with Condition D.11.3, the Permittee shall maintain records of any additional inspections prescribed by the Preventive Maintenance Plan.~~

Comment 4:

Technical Support Document. On page 3 and in Appendix A the uncontrolled potential to emit for PM from the blast unit is estimated to be 1861.5 tons per year. This is a completely unrealistic and inaccurate estimate of the uncontrolled emissions from the shot blast unit. The AP-42 emission factor for cleaning and finishing operations is 17 pounds per ton, and this is the emission factor used in IDEM's assessment. However, the AP-42 document goes on to indicate that only 0.1 pounds per ton is emitted to the atmosphere. This is an indication of the fact that the vast majority of the particles generated by cleaning and finishing operations are large and would fall out in the facility, and would not be emitted to the atmosphere. As such the estimate included in the TSD vastly overestimates the potential to emit of PM from this operation.

Response to Comment 4:

IDEM, OAQ considers AP-42 emission factors to be reliable and sufficient to provide estimates of uncontrolled emissions. The large difference between the controlled and uncontrolled emissions indicated in AP-42 is due to the high control efficiency of the control device (normally a baghouse with greater than 99% control efficiency). Any other emission factors to be considered would have to meet with source-specific IDEM, OAQ approved stack testing.

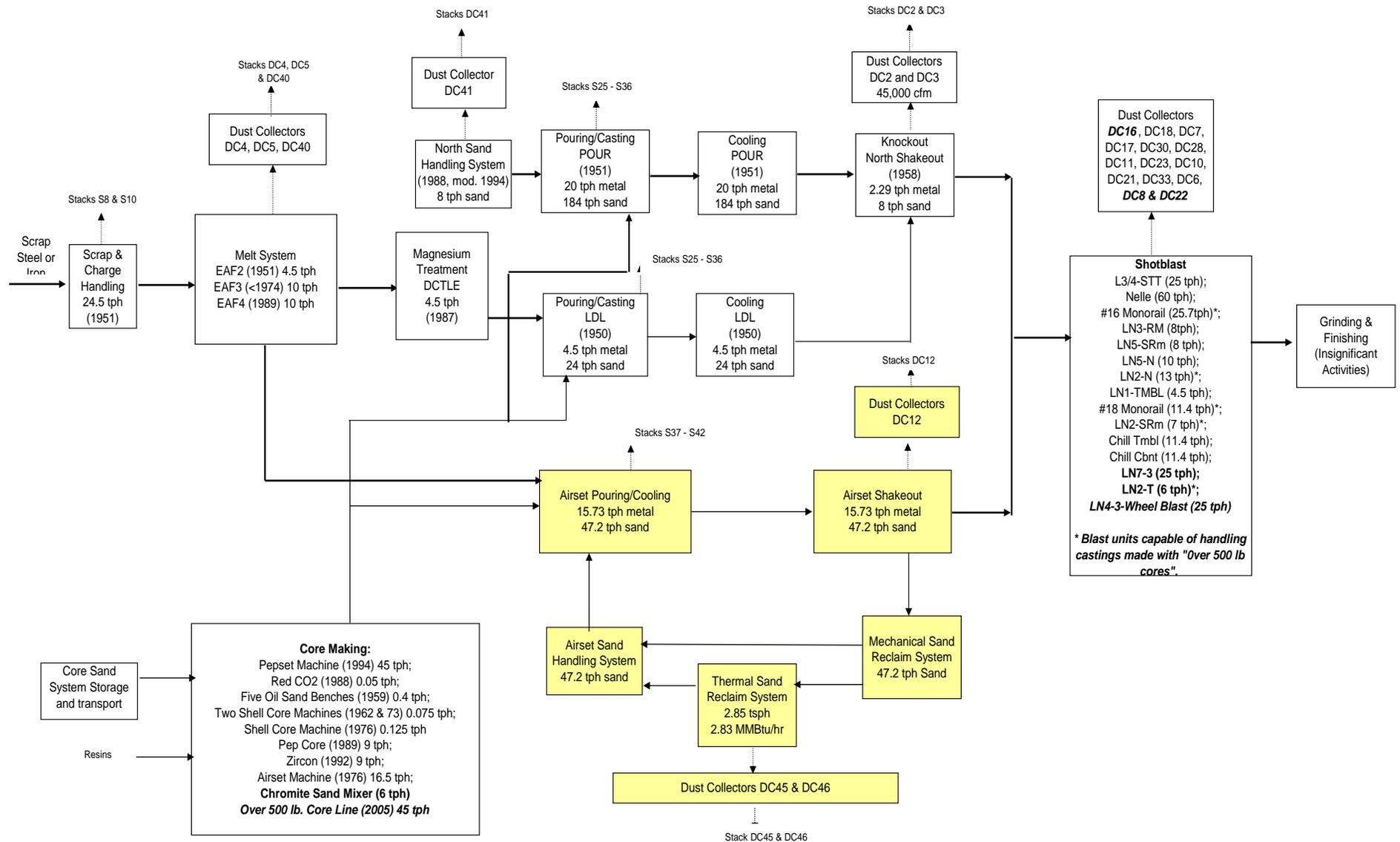
On October 12, 2005, OAQ received comments from Ethan Chatfield, Environmental Engineer of U.S. Environmental Protection Agency on the proposed source and permit modifications. The summary of the comments and corresponding responses is shown below. Changes made to the permit as a result of the comments are shown in bold and deleted permit language is shown with a line through it. Any permit changes affecting the permit's Table of Contents are also revised without replication herein.

Comment 1:

TSD page 2 of 16: Upon review it appears that this facility has received a total of 5 permit modifications in 2005, each modification below the PSD significance threshold and each modification increasing total net emissions. We are concerned that the facility may be attempting to circumvent PSD through sham permitting, please explain.

Response to Comment 1:

In order to better understand the various processes (and emission units) a flow diagram of these various processes is attached. As shown in the flow chart below, there are a number of core production facilities and shot blast units at the facility that produce only certain sizes and types of castings while the raw material (scrap steel or iron) the source is handling (24.5 tons per hour) remains the same.



None of the permit modifications for projects in 2005 were conceived or planned to provide additional capacity to produce castings that the source does not already make. Equipment for core production and shot blasting that existed (and still exists) at the plant can handle any of the castings they currently make or expect to make. The rationale for the individual projects was as follows:

1. In December 2003 a purchase order was issued for a new shot blast unit (LN7-3) because of failure to an existing shot blast unit (LN6-TT) was imminent. Harrison Steel needed to replace the failing unit or risk an extended shutdown of the unit. The unit was replaced in February 2004. Harrison Steel applied for a permit for this unit in July of 2004, proposing to accept limits below the PSD major modification thresholds for PM and PM-10.
2. In June 2004, Harrison Steel purchased a separate shot blast unit, and applied for a permit to install the unit in September 2004. This unit is identified as LN2-T. The decision to purchase was based on the availability of the unit at an auction. It is a relatively small unit and they were able to purchase it at a much lower cost than the cost of a new unit. The unit affords Harrison the ability to move production to this unit as other units wear out. The permit for the two (2) shot blast units (LN7-3 and LN2-T) was issued in March 2005. The PM and PM-10 emissions from the two (2) shot blast units combined (LN7-3 and LN2-T) were limited to less than the PSD major modification thresholds.
3. In December 2004, Harrison Steel submitted an application to the OAQ requesting to add a 2nd core sand mixer to be used in conjunction with the existing Airset core production process. The need for this equipment arose from Harrison's concern over the continued availability of zircon sand, and the mixer gave them the redundant capability to mix chromite sand separately to ensure that they could continue to operate the core production process at the current production levels. The new mixer did not increase the capacity of the overall line, which is governed by the core machine itself, but rather provided redundant mixing capacity. The limits in the permit restricted VOC emissions to less than 25 tons/year such that the requirements of 326 IAC 8-1-6 do not apply. The permit for this mixer was issued in August 2005.
4. In March 2005, Harrison Steel submitted an application to the OAQ requesting to add a new core line referred to as the "over 500 lb core line" to supplement the existing core production facilities and to replace Shot Blast unit L3/4-NTT with a new shot blast unit LN4-3. The purchase of the shot blast unit was a business decision based on the availability of used equipment at an attractive price. Harrison Steel plans to use this unit to replace other units in the blasting operation. The purchase of the new core line was based on the relatively high labor level required to make the same cores on the existing core line. As such the new core line is redundant with the existing core production, but large cores can be made with less labor. The proposed permit limits include VOC, PM and PM-10 limits for these two projects combined which ensure that the PSD major modification thresholds will not be exceeded. The permit for the "over 500 lb core line" and new shot blast unit LN4-3 is still pending.

IDEM believes the various projects described above were not attempts by Harrison Steel to circumvent PSD requirements for the following reasons:

- The LN7-3 shot blast (application submitted in July 2004) was a replacement for the LN6-TT blast unit due to the imminent failure of this blast operation. This blast unit is used for smaller parts and cannot be used for parts made from cores produced on the "Over 500 lb Core Line".
- The LN2-T shot blast (application submitted in September 2004) was purchased at an auction, and the decision to purchase was not based on a particular need, but on the opportunity to purchase additional equipment at a good price. The LN2-T is for larger castings such as may be made using cores from the Over 500 lb Core line. However, this is not why the unit was purchased or installed because several other existing units can be and are used for larger parts including the #16 Monorail, #18 Monorail, LN2-N, and LN2-S. The addition of this unit was not required to increase blast capacity, but was merely a prudent business decision. It was clearly not associated with the purchase of the replacement unit (LN7-3) or the emission units purchased subsequently.

- The Chromite sand mixer application was submitted in December of 2004. The mixer provides alternate (not additional) mixing capacity when a different type of sand is required. This alternate mixer, as well as the existing mixer, is used to mix sand and as such are not associated with any specific size or type of product or related to any particular shot blast unit or core production method. This project had no relationship to the previous permit requests for the shot blast units, as it involved different circumstances, entire different parts of the production process and even different pollutants.
- The LN4-3 shot blast (application submitted in March 2005 with the application for the Over 500 lb Core Line) was also purchased at auction due to the price of the unit. This unit is used for smaller castings and cannot be used for castings made from cores produced on the "Over 500 lb Core Line".

The Over 500 lb Core Line will also be used for alternate rather than added capacity, and not to make a part or product not already produced at the facility. They currently make large cores on the existing process, but it is more labor intensive due to the need to manually handle the cores. The new core line will enable Harrison Steel to make the same cores currently produced on existing equipment with less labor than currently required.

The decision to purchase these pieces of equipment were entirely separate from the other purchases described above and these represent processes independent of one another.

IDEM believes that Harrison have appropriately applied for all of these permits. All of these projects involve either replacing existing emission units or providing redundancy of operation for processes that are already restricted in capacity. None of these projects are related to an overall increase in production and in all cases the existing processes could have accommodated the level of production anticipated by these new pieces of equipment.

Comment 2:

Section D.5 and D.11: Since the facility is proposing synthetic minor emission limits that appear to be close to the PSD significant thresholds, it is suggested that stack testing be required on the new emission units to verify that the emission limits, in conjunction with the associated production limits specified in D.5.2, D.11.1, and D.11.2, do not exceed these thresholds.

Response to Comment 2:

With respect to the proposed new shot blast unit, testing for PM and PM₁₀ is feasible. However, IDEM believes that this unit, which has a controlled PTE of 1.75 lb/hr (using baghouse with 99% efficiency) and a limit of 2.7 lb/hr is a relatively small unit and the proposed emission limits are not particularly stringent for this size unit. As such IDEM has determined that testing is not required.

Testing of the over 500 lb core machine would pose a number of practical problems. The core machine used for the Phenolic Urethane No Bake (PUNB) core process used in this core machine is very different than the Polyurethane Cold Box (PUCB) process that is more common in the industry. Both processes use a two-part resin system. However, the PUNB process uses a liquid catalyst added to the mix, whereas the PUCB process blows an amine gas through the core matrix, followed by purge air. Therefore the PUCB process has an exhaust gas stream (from the TEA and purge air) that has a vent that can be tested. The PUNB process does not have an exhaust air stream that can be tested easily. Emissions from the PUNB process are from the evaporation of the organic constituents in the core resins. In order to test the emission rates, the source would have to construct an enclosure around the process and exhaust the enclosure through a vent that could be sampled.

The PUNB process used at the Harrison Steel Castings facility uses a TECHNISET[®] resin system manufactured by HA International. The source has provided a copy of a test report from the Casting Emission Reduction Program (CERP) conducted at the Technikon, LLC facility in Sacramento. The test report includes data from testing on a PUNB mold using the TECHNISET[®] resin. The testing was conducted by placing the mold flask in a temporary enclosure and testing the exhaust from the enclosure for VOCs (using EPA method 25A) and for specific organic compounds. Testing was conducted for individual molds and six replicate tests were conducted. Test results include emissions from the mixing, making and curing as well as core storage after the cores are produced. IDEM determines that this test is representative of the process in that the same resin system is used, and the resin content of the core process tested was even higher than the resin content of Harrison's cores. (CERP used 1.3% resin and Harrison's cores have 1.0 % resin).

The test results showed 0.0069 lbs VOC per lb of binder from the mixing, making and curing of the cores. This is much lower than the proposed emission limit of 0.05 lbs per lb of resin. The testing also showed core storage emissions of 0.0118 lbs/ton cores, which when combined with the mixing, making and curing values is still well below the proposed limit of 0.05 lbs/lb resin. It appears that this testing provides adequate support for the conclusion that the proposed VOC limit of 0.05 lbs/lb of resin is very conservative. Given this available data and the difficulties associated with similar testing, IDEM does not believe it is necessary to require testing of the process in this permit.

Upon further review IDEM, OAQ has made the following changes to the Part 70 permit (additions in bold, deletions in ~~strikeout~~):

1. This permit incorporates Sections B, C and D changes that were made to the Part 70 permit through Third Significant Permit Modification 045-21549-00002, issued December 30, 2005.

Indiana Department of Environmental Management Office of Air Quality

Technical Support Document (TSD) for a Significant Source Modification and Significant Permit Modification to a Part 70 Operating Permit

Source Background and Description

Source Name:	Harrison Steel Castings Company
Source Location:	900 North Mound Street, Attica, IN 47918
County:	Fountain
SIC Code:	3321 and 3325
Operation Permit No.:	T045-6002-00002
Operation Permit Issuance Date:	November 30, 2001
Significant Source Modification No.:	045-21035-00002
Significant Permit Modification No.:	045-21159-00002
Permit Reviewer:	Alic Bent/EVP

The Office of Air Quality (OAQ) has reviewed a modification application from Harrison Steel Castings Company relating to revisions to their steel and ductile iron castings permit as follows:

History

On March 28, 2005, Harrison Steel Castings Company submitted an application to the OAQ requesting to add a new core line to supplement the existing core production facilities and to replace Shot Blast unit L3/4-NTT with a new shot blast unit. The proposed core line will be better suited to make larger cores, which are currently being made on existing equipment. The potential to emit VOCs from the new core line will be greater than 25 tons per year. The source is proposing to limit total resin usage to less than 996,000 pounds of resin per year, which will result in a limited potential to emit of less than 25 tons of VOC per year. The potential to emit PM and PM-10 from the proposed modification will be greater than 25 and 15 tons per year, respectively. The source is proposing to limit total PM and PM-10 emissions to less than 25 and 15 tons per year, respectively, for the core line sand system and the shot blast unit. The Permittee has indicated that no change will be made for other existing units and has stated in the application for this approval that this modification at a major stationary source will not be major for Prevention of Significant Deterioration under 326 IAC 2-2-1. Therefore, this modification will not result in debottlenecking or increased utilization of other existing units.

New Emission Units and Pollution Control Equipment

The application includes information relating to the construction and operation of the following equipment:

- (a) One core line, identified as "Over 500 lb Core Line", to be installed in 2005, including a Pepset mold making machine with a maximum capacity of 45 tons per hour, a sand mixer with a maximum capacity of 1,500 pounds per minute, two (2) 350-ton sand storage silos, one (1) 150-ton sand storage silo, and three (3) sand transporters, controlled by two (2) bin vents and one (1) 5,000 cfm dust collector.
- (b) One (1) blast machine, identified as LN4-3 Wheel Blast, to be constructed in 2005, with a maximum capacity of 25 tons of steel per hour with emissions controlled by baghouse DC16.

Existing Approvals

The source was issued a Part 70 Operating Permit T045-6002-00002 on November 30, 2001. The source has since received the following:

- (a) First Significant Source Modification No.: 045-12788, issued on June 13, 2001;
- (b) First Minor Permit Modification No.: 045-15172, issued on April 23, 2002;
- (c) First Minor Source Modification No.: 045-20502, issued on February 25, 2005;
- (d) Second Significant Source Modification No.: 045-19746, issued on March 15, 2005;
- (e) First Significant Permit Modification No.: 045-20240-00002, issued on May 13, 2005;
- (f) Second Significant Permit Modification No.: 045-20409-00002, issued on August 24, 2005.

Pending Approvals

Permit No.	Project Description	Status
3 rd SSM 045-20845-00002 and 3 rd SPM 045-19744-00002	Revisions to the PM and PM10 limits on the Airset line, the VOC emission limits for the thermal reclaim system which controls the mold sand mixer, the throughput limits and the emission limits established for the north and south sand systems and the re-analysis of BACT for the Airset line pouring and cooling, and shakeout processes.	Not been to public notice
4 th SSM 045-21035-00002 and 4 th SPM 045-21159-00002	The addition of a new core line to supplement the existing core production facilities and the replacement of a Shot Blast unit L3/4-NTT with a new shot blast unit LN4-3 Wheel Blast. The regulated pollutants emitted from these processes are PM, PM10 and VOC.	Proposed

The units being modified in the two (2) pending permits (3rd SSM and 3rd SPM) are not related to the units being modified in the proposed Significant Source Modification (SSM) No.: 045-21035-00002 and Significant Permit Modification (SPM) No.: 045-21159-00002. The actual PTE (based on future actual emissions minus the average actual emissions for the past two years) will not be increased for 3rd SSM and 3rd SPM. Therefore, IDEM has determined that the units being permitted through the two (2) pending permits (3rd SSM and 3rd SPM) and the proposed SSM/SPM can be treated as separate projects and don't have to be combined for permit review.

Enforcement Issue

The source has an enforcement action pending for noncompliance with their BACT limits.

Recommendation

The staff recommends to the Commissioner that the Significant Source Modification and Significant Permit Modification 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 March 28, 2005.

Emission Calculations

See Appendix A: pages 1 of 2 of this document for detailed emissions calculations.

Potential To Emit Before Controls (Modification)

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “the maximum capacity of a stationary source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA.”

Pollutant	Potential To Emit (tons/year)
PM	1951.14
PM-10	199.6
SO ₂	--
VOC	197.10
CO	--
NO _x	--

Justification for Modification

The Title V permit is being modified through a Significant Source Modification. This modification is being performed pursuant to 326 IAC 2-7-10.5(f)(4) because it is a modification for which the potential to emit PM/PM-10 and VOC is greater than twenty-five(25) tons per year. The Significant Source Modification will be incorporated into the permit through a Significant Permit Modification because new limitations and standards are required to be added to the existing Title V permit.

County Attainment Status

The source is located in Fountain County.

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

- (a) Volatile organic compounds (VOC) and Nitrogen Oxides (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 emissions and NO_x are considered when evaluating the rule applicability relating to ozone. Fountain County has been designated as attainment or unclassifiable for ozone. Therefore, VOC emissions and NO_x were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

- (b) Fountain County has been classified as unclassifiable or attainment for PM_{2.5}. U.S. EPA has not yet established the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 for PM 2.5 emissions. Therefore, until the U.S.EPA adopts specific provisions for PSD review for PM_{2.5} emissions, it has directed states to regulate PM₁₀ emissions as surrogate for PM_{2.5} emissions.
- (c) Fountain County has been classified as attainment or unclassifiable in Indiana for all other pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

Source Status

Existing Source PSD or Emission Offset Definition (emissions after controls, based upon 8760 hours of operation per year at rated capacity and/or as otherwise limited):

Pollutant	Emissions (tons/year)
PM	Greater than 100
PM-10	Greater than 100
SO ₂	Less than 100
VOC	Greater than 100
CO	Less than 100
NOx	Less than 100

- (a) This existing source is a major PSD stationary source because at least one attainment regulated pollutant is emitted at a rate of 100 tons per year or more, and it is one of the 28 listed source categories, specifically a secondary metal production facility.
- (b) These emissions are based upon the technical support document for the Significant Source Modification No.: 045-12788-00002.

Potential to Emit After Controls for the Modification

The table below summarizes the total potential to emit, reflecting all limits, of the significant emission units for the modification.

Process/facility	Potential to Emit (tons/year)						
	PM	PM-10	SO ₂	VOC	CO	NO _x	HAPs
Over 500 lb Core Machine	--	--	--	24.9	--	--	--
New Core Line Sand System	6.13	2.63	--	--	--	--	--
One (1) blast machine (LN4-3)	18.61	11.83	--	--	--	--	--
Total for this modification	24.74	14.46	--	24.9	--	--	--
PSD Significance Level	25	15	40	40	100	40	--

The Permittee has stated in the application for this approval that this modification at a major stationary source will not be major for Prevention of Significant Deterioration under 326 IAC 2-2-1.

Federal Rule Applicability

- (a) There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) incorporated into this permit.
- (b) The National Emission Standards for Hazardous Air Pollutants (NESHAP), 326 IAC 20, (40 CFR Part 63.7680, Subpart EEEEE (Iron and Steel Foundries) applies to each new or existing iron and steel foundry that is a major source of HAP emissions. The rule covers emissions from metal melting furnaces, scrap preheaters, pouring areas, pouring stations, automated conveyor and pallet cooling lines that use a sand mold system, automated shakeout lines that use a sand mold system, and mold and core making lines. The final rule also covers fugitive emissions from foundry operations.

This source is an existing steel and ductile iron castings foundry that is a major source of HAP emissions. Pursuant to this rule, as an existing affected source the Permittee must comply with 40 CFR 63, Subpart EEEEE on and after April 22, 2007. Since this rule has a future compliance date, the specific details of the rule and how the permittee will demonstrate compliance are not provided in the permit. The Permittee shall submit an application for a significant permit modification at least nine months prior to the April 22, 2007 compliance date that will specify the option or options for the emission limitations and standards and methods for determining compliance chosen by the Permittee. At that time, the Department will include the specific details of the rule and how the Permittee will demonstrate compliance. In addition, pursuant to 40 CFR 63, Subpart EEEEE, the Permittee shall submit the requisite notifications and reports pursuant to Subpart EEEEE and 40 CFR 63, Subpart A, and such are contained in the permit.

State Rule Applicability - Entire Source

326 IAC 2-2 (Prevention of Significant Deterioration)

This existing source is a major stationary source because it is one of the 28 listed source categories (i.e. secondary metal production) under 326 IAC 2-2, and potential volatile organic compound (VOC) and particulate matter (PM & PM-10) emissions are greater than 100 tons per year. For this modification the source has requested that PM, PM-10 and VOC emissions be limited to less than 40, 25 and 15 tons per year, respectively, as follows:

- (a) The PM emissions from the sand system at the "over 500 lb core line" shall not exceed 1.4 pounds per hour, which is equivalent to total PM emissions of 6.13 tons per year.
- (b) The PM-10 emissions from the sand system at the "over 500 lb core line" shall not exceed 0.6 pounds per hour, which is equivalent to total PM-10 emissions of 2.63 tons per year.
- (c) The PM emissions from the blast machine LN4-3 shall not exceed 4.25 pounds per hour, which is equivalent to total PM emissions of 18.61 tons per year.
- (d) The PM-10 emissions from the blast machine LN4-3 shall not exceed 2.7 pounds per hour, which is equivalent to total PM-10 emissions of 11.83 tons per year.
- (e) The total resin usage for the "over 500 lb core line" shall be limited to less than 996,000 pounds of resin per 12 consecutive month period with compliance determined at the end of each month. This is equivalent to VOC emissions of less than 25 tons per year.
- (f) The VOC emissions from the "over 500 lb core line" shall not exceed 0.05 pounds of VOC per pound of core resin.
- (g) The sand throughput to the "over 500 lb core line" shall not exceed 49,800 tons per 12 consecutive month period with compliance determined at the end of each month.

Therefore, the requirements of 326 IAC 2-2 (PSD) will not apply.

326 IAC 2-6 (Emission Reporting)

Since this source is required to have an operating permit under 326 IAC 2-7, Part 70 Permit Program, this source is subject to 326 IAC 2-6 (Emission Reporting). The source also has potential to emit greater than or equal to 250 tons per year of VOC; therefore, an emission statement covering the previous calendar year must be submitted by July 1 annually. The emission statement shall contain, at a minimum, the information specified in 326 IAC 2-6-4.

State Rule Applicability - Individual Facilities

326 IAC 8-1-6 (BACT)

VOC emissions from the "over 500 lb core machine", constructed in 2005, shall be limited to less than 25 tons per year as follows:

- (a) The total resin usage for the "over 500 lb core machine", constructed in 2005, shall be limited to less than 996,000 pounds of resin per 12 consecutive month period with compliance determined at the end of each month.
- (b) The VOC emissions from the "over 500 lb core machine", constructed in 2005, shall not exceed 0.05 pound per pound of resin.

Therefore, the requirements of 326 IAC 8-1-6 (BACT) shall not apply. The usage requirements shall also make the requirements of 326 IAC 2-2 (PSD) not applicable.

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

The particulate from the blast machine identified as LN4-3 wheel blast, shall be limited by the following:

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

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

$$E = 4.10 (25)^{0.67} \\ = 35.4 \text{ pounds per hour}$$

The baghouse shall be in operation at all times the blast machine identified as LN4-3 wheel blast is in operation, in order to comply with this limit.

Compliance Requirements

Permits issued under 326 IAC 2-7 are required to ensure that sources can demonstrate compliance with applicable state and federal rules on a more or less continuous basis. All state and federal rules contain compliance provisions, however, these provisions do not always fulfill the requirement for a more or less continuous demonstration. When this occurs IDEM, OAQ, in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-7-5. As a result, compliance requirements are divided into two sections: Compliance Determination Requirements and Compliance Monitoring Requirements.

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

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

1. The sand system at the "over 500 lb core line" has applicable compliance monitoring conditions as specified below:
 - (a) Once per shift visible emission notations of the sand system at the "over 500 lb core line" stack exhaust shall be performed during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.
 - (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
 - (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
 - (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

- (e) The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports, shall be considered a deviation from this permit.
- (f) The Permittee shall record the total static pressure drop across the control equipment used in conjunction with the sand system at the "over 500 lb core line", at least once per shift when the sand system at the "over 500 lb core line" is in operation. When for any one reading, the pressure drop across the control equipment is outside the normal range of 3.0 and 6.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C- Compliance Response Plan - Preparation, Implementation, Records, and Reports. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports, shall be considered a deviation from this permit.

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

- (g) An inspection shall be performed each calendar quarter of all bags controlling the sand system at the "over 500 lb core line". Inspections required by this condition shall not be performed in consecutive months. All defective bags shall be replaced.
- (h) In the event that bag failure has been observed.
 - (i) For multi-compartment units, the affected compartments will be shut down immediately until the failed units have been repaired or replaced. Within eight (8) business hours of the determination of failure, response steps according to the timetable described in the Compliance Response Plan shall be initiated. For any failure with corresponding response steps and timetable not described in the Compliance Response Plan, response steps shall be devised within eight (8) business hours of discovery of the failure and shall include a timetable for completion. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports, shall be considered a deviation from this permit. If operations continue after bag failure is observed and it will be 10 days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

- (ii) For single compartment baghouses, if failure is indicated by a significant drop in the baghouse's pressure readings with abnormal visible emissions or the failure is indicated by an opacity violation, or if bag failure is determined by other means, such as gas temperatures, flow rates, air infiltration, leaks, dust traces or triboflows, then failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

These monitoring conditions are necessary because the control equipment for the sand system at the "over 500 lb core line" must operate properly to ensure compliance with 326 IAC 2-2 (PSD) and 326 IAC 2-7 (Part 70).

Changes Proposed

The changes listed below have been made to the Part 70 Operating Permit T045-6002-00002 to incorporate the new core line identified as the "over 500 lb core line" and the new blast machine identified as LN4-3 wheel blast. Language that has been deleted has been shown with a line through it and language that has been added is shown in bold.

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)]
[326 IAC 2-7-5(15)]

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

- (5) (a) ~~Two (2)~~ **One (1)** twin table blast machines, identified as ~~L3/4 - NTT~~ and L3/4 - STT, both constructed in 1961 ~~each~~ with a maximum capacity of 25 tons of steel per hour with emissions from ~~L3/4 - NTT controlled by baghouse DC16~~ and emissions from L3/4 - STT controlled by baghouse DC18.
- (b) **One (1) blast machine, identified as LN4-3 Wheel Blast, constructed in 2005, with a maximum capacity of 25 tons of steel per hour with emissions controlled by baghouse DC16.**
- (11) **One core line, identified as "Over 500 lb Core Line", constructed in 2005, including a Pepset mold making machine with a maximum capacity of 45 tons per hour, a sand mixer with a maximum capacity of 1,500 pounds per minute, two (2) 350-ton sand storage silos, one (1) 150-ton sand storage silo, and three (3) sand transporters, controlled by two (2) bin vents and one (1) 5,000 cfm dust collector.**

SECTION D.5

FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]

The shot blasting operations consisting of the following:

- (a) ~~Two (2)~~ **One (1)** twin table blast machines, identified as ~~L3/4 - NTT~~ and L3/4 - STT, both constructed in 1961 ~~each~~ with a maximum capacity of 25 tons of steel per hour with emissions from ~~L3/4 - NTT controlled by baghouse DC16~~ and emissions from L3/4 - STT controlled by baghouse DC18.
- (b) **One (1) blast machine, identified as LN4-3 Wheel Blast, constructed in 2005, with a maximum capacity of 25 tons of steel per hour with emissions controlled by baghouse DC16.**

D.5.1 Particulate Matter (PM) [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the following conditions shall apply:

- (a) The allowable PM emission rate from ~~each of the baghouses DC16 and DC18~~ controlling the shotblast machines identified as the twin table shotblast machines ~~L3/4-NTT and L3/4-S TT~~, shall not exceed 35.4 pounds per hour ~~each~~ when operating at a process weight rate of 25 tons of metal castings per hour ~~each~~.
- (b) **The allowable PM emission rate from baghouse DC16 controlling the blast machine identified as LN4-3 Wheel Blast, shall not exceed 35.4 pounds per hour when operating at a process weight rate of 25 tons of metal castings per hour.**

D.5.2 Prevention of Significant Deterioration (PSD) [326 IAC 2-2]

In order to render the requirements of 326 IAC 2-2 (PSD) ~~and 40 CFR 52.21~~ not applicable, the following conditions shall apply:

- (i) **The PM emissions from the baghouse DC16 controlling the LN4-3 Wheel Blast machine shall not exceed 4.25 pounds per hour.**
- (j) **The PM10 emissions from the baghouse DC16 controlling the LN4-3 shot blast machine shall not exceed 2.70 pounds per hour.**

Therefore, the requirements of 326 IAC 2-2 (PSD) ~~and 40 CFR 52.21~~ shall not apply.

D.5.4 Particulate Matter

In order to comply with the requirements of Conditions D.5.1 and D.5.2, the following conditions shall apply:

- (a) The baghouse, DC16, for PM and PM10 control shall be in operation at all times when the ~~L3/4-NTT shot~~ **LN4-3 wheel** blast machine is in operation.

SECTION D.11 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]

One core line, identified as "Over 500 lb Core Line", constructed in 2005, including a Pepset mold making machine with a maximum capacity of 45 tons per hour, a sand mixer with a maximum capacity of 1,500 pounds per minute, two (2) 350-ton sand storage silos, one (1) 150-ton sand storage silo, and three (3) sand transporters, controlled by two (2) bin vents and one (1) 5,000 cfm dust collector.

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

D.11.1 VOC Emissions [326 IAC 8-1-6] [326 IAC 2-2]

The following conditions shall apply to the "over 500 lb core line":

- (a) The total resin usage for the "over 500 lb core line", constructed in 2005, shall be limited to less than 996,000 pounds of resin per 12 consecutive month period with compliance determined at the end of each month. This is equivalent to VOC emissions of less than 25 tons per year.
- (b) The VOC emissions from the "over 500 lb core line" shall not exceed 0.05 pounds of VOC per pound of core resin.

- (c) The sand throughput to the “over 500 lb core line” shall not exceed 49,800 tons per 12 consecutive month period with compliance determined at the end of each month.

Therefore, the requirements of 326 IAC 8-1-6 (BACT) and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) do not apply.

D.11.2 Prevention of Significant Deterioration (PSD) [326 IAC 2-2]

The following conditions shall apply:

- (a) The PM emissions from the sand system at the “over 500 lb core line” shall not exceed 1.4 pound per hour.
- (b) The PM-10 emissions from the sand system at the “over 500 lb core line” shall not exceed 0.6 pound per hour.

Therefore, the requirements of 326 IAC 2-2 (PSD) shall not apply.

D.11.3 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for the dust collector and bin vents controlling the “over 500 lb core line” listed in this section.

Compliance Determination Requirements

D.11.4 Particulate Matter

In order to comply with condition D.11.2, the control equipment for particulate control shall be in operation and control emissions from the sand system at the “over 500 lb core line” at all times that the sand system at the “over 500 lb core line” is in operation.

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

D.11.5 Visible Emissions Notations

- (a) Once per shift visible emission notations of the sand system at the “over 500 lb core line” stack exhaust shall be performed during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.
- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
- (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (e) The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports, shall be considered a deviation from this permit.

D.11.6 Parametric Monitoring

The Permittee shall record the total static pressure drop across the control equipment used in conjunction with the sand system at the “over 500 lb core line”, at least once per shift when the sand system at the “over 500 lb core line” is in operation. When for any one reading, the pressure drop across the control equipment is outside the normal range of 3.0 and 6.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C- Compliance Response Plan - Preparation, Implementation, Records, and Reports. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports, shall be considered a deviation from this permit.

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

D.11.7 Baghouse Inspections

An inspection shall be performed each calendar quarter of all bags controlling the sand system at the “over 500 lb core line”. Inspections required by this condition shall not be performed in consecutive months. All defective bags shall be replaced.

D.11.8 Broken or Failed Bag Detection

In the event that bag failure has been observed.

- (a) For multi-compartment units, the affected compartments will be shut down immediately until the failed units have been repaired or replaced. Within eight (8) business hours of the determination of failure, response steps according to the timetable described in the Compliance Response Plan shall be initiated. For any failure with corresponding response steps and timetable not described in the Compliance Response Plan, response steps shall be devised within eight (8) business hours of discovery of the failure and shall include a timetable for completion. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports, shall be considered a deviation from this permit. If operations continue after bag failure is observed and it will be 10 days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.
- (b) For single compartment baghouses, if failure is indicated by a significant drop in the baghouse’s pressure readings with abnormal visible emissions or the failure is indicated by an opacity violation, or if bag failure is determined by other means, such as gas temperatures, flow rates, air infiltration, leaks, dust traces or triboflows, then failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

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

D.11.9 Record Keeping Requirements

- (a) In order to document compliance with Condition D.11.1, the Permittee shall maintain records in accordance with (1) and (2) below.

- (1) The amount of resin usage in the “over 500 lb core line”, each month of operation; and
 - (2) The sand throughput to the sand system at the “over 500 lb core line”, each month of operation.
- (b) To document compliance with Condition D.11.5, the Permittee shall maintain records of visible emission notations of the sand system at the “over 500 lb core line” stack exhaust once per shift.
- (c) To document compliance with Condition D.11.6, the Permittee shall maintain records once per shift of the total static pressure drop during normal operation when venting to the atmosphere.
- (d) To document compliance with Condition D.11.7, the Permittee shall maintain records of the results of the inspections required under Condition D.11.7.
- (e) To document compliance with Condition D.11.3, the Permittee shall maintain of records of any additional inspections prescribed by the Preventive Maintenance Plan.
- (f) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.11.10 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.11.1 shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by the “responsible official” as defined by 326 IAC 2-7-1(34).

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

Part 70 Quarterly Report

Source Name: Harrison Steel Castings Co.
Source Address: 900 N. Mound St., Attica, IN 47918
Mailing Address: 900 N. Mound St., P.O. Box 60, Attica, IN 47918
Part 70 Permit No.: T045-6002-00002
Facility: "Over 500 lb Core Making Machine" (constructed in 2005)
Parameter: VOC
Limit: Total resin usage for the "Over 500 lb Core Machine" (constructed in 2005) shall be limited to less than 996,000 pounds of resin per 12 consecutive month period with compliance determined at the end of each month.

YEAR:

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

No deviation occurred in this quarter.

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

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

Attach a signed certification to complete this report.

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

Part 70 Quarterly Report

Source Name: Harrison Steel Castings Company
Source Address: 900 North Mound Street, Attica, Indiana 47918
Mailing Address: P.O. Box 60, Attica, Indiana 47918
Part 70 Permit No.: T045-6002-00002
Facility: "Over 500 lb Core Making Machine" (constructed in 2005)
Parameter: Sand Throughput
Limit: 49,800 tons per 12 consecutive month period with compliance determined at the end of each month.

YEAR:

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

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

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

Attach a signed certification to complete this report.

Conclusion

The operation of this steel and ductile iron castings plant shall be subject to the conditions of the attached proposed Significant Source Modification No. 045-21035-00002 and Significant Permit Modification No. 045-21159-00002.

**Appendix A: Emission Calculations
Over 500 lb Core Line**

Company Name: Harrison Steel Castings Co.
Address City IN Zip: 900 N. Mound St., Attica, IN 47918
Permit Number: SSM045-21035-00002
 SPM045-21159-00002
Reviewer: AB/EVP

VOC Emissions

Machine	Capacity (tons cores/hr)	Maximum Resin Content (%)	VOC Emission Factor from Resin Evaporation (lb/ton cores)	Potential VOC Emissions
Over 500 lb Core Line Mixer	45	1.0%	1	197.1
Over 500 lb Core Machine	45	1.0%	1	197.1
				394.2

Limit to render 326 IAC 8-1-6 (BACT) not applicable

Machine	Core Production (tons cores/yr)	Resin Usage Limit (lb/yr)	VOC Emission Factor from Resin Evaporation (lb/ton cores)	VOC Emission Factor for Resin Evaporation (lb VOC/lb resin)	VOC Limit (ton/yr)
Over 500 lb Core Machine	49,800	996,000	1	0.05	24.9

Methodology

Emission factors are from testing performed from phenolic urethane resin systems that showed an emission rate of 0.65 lbs/ton of cores at 1% resin content. A conservative emission factor of 1.0 lb/ton of cores at 1% resin content has been used. This equates 0.05 lbs VOC per lb resin. Uncontrolled VOC emissions (tons/yr) = Capacity (tons/hr) * emission factor (lbs VOC/ton core) * 8760 hr/yr * ton/2000 lb VOC's are generated when core sand is mixed with binders and when the molten metal comes in contact with the cores.

PM/PM10 Emissions

Machine	Sand throughput (ton/yr)	PM EF (lb/ton sand)	PM10 EF (lb/ton sand)	Uncontrolled PTE PM (ton/yr)	Uncontrolled PTE PM10 (ton/yr)
Over 500 lb Core Machine	49,800	3.6	0.54	89.64	13.45

Machine	Uncontrolled PTE PM (ton/yr)	Uncontrolled PTE PM10 (ton/yr)	Baghouse Efficiency (%)	Controlled PTE PM (ton/yr)	Controlled PTE PM10 (ton/yr)
Over 500 lb Core Machine	89.64	13.45	99%	0.90	0.13

Methodology

Emission factors are from FIRE, Version 5.0 for Grinding/Handling operations (SCC 30400350) The maximum sand throughput is equal to the limited throughput on the core machine.

Appendix A: Process Particulate Emissions

Company Name: Harrison Steel Castings Co.
Address City IN Zip: 900 N. Mound St., Attica, IN 47918
Permit No.: SSM045-21035-00002
 SPM045-21159-00002
Reviewer: AB/EVP

Uncontrolled Potential Emissions (tons/year)					
Process	Maximum Capacity (tons/hr)	PM Emission Factor (lb/ton)	PM10 Emission Factor (lb/ton)	Total PM Emissions (tons/yr)	Total PM10 Emissions (tons/yr)
LN4-3 Wheel Blast	25	17	1.7	1861.50	186.15
Total Emissions Based on Rated Capacity at 8,760 Hours/Year				1861.50	186.15
Controlled Potential Emissions (tons/year)					
A. Baghouses					
Process	Grain Loading per Actual Cubic Foot of Outlet Air	Baghouse Air Flow Rate (cfm)	Total (tons/yr)		
LN4-3 Wheel Blast	0.01000	20,000	7.51		
Total Emissions Based on Rated Capacity at 8,760 Hours/Year and source control:					

Methodology:Potential (uncontrolled):

Emission factor from Fire Version 6.23 (SCC 3-04-007-11)

Uncontrolled Emissions (tons/yr) = Maximum Capacity * Emission Factor (lb/ton) * 8760 hr/yr * 1 ton/2,000 lbs

Potential (controlled):

Baghouse (tons/yr) = No. Units * Loading (grains/cf) * Air Flow Rate (cfm) * 1 lb/7,000 grains * 60 min/hr * 8760 hr/yr * 1 ton/2,000 lbs

The controlled emissions are determined by grain loading calculations. For the purpose of this calculation all particulates emitted are conservatively assumed to be PM-10.