INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Michael R. Pence
Governor

Thomas W. Easterly
Commissioner

TO: Interested Parties / Applicant

DATE: March 12, 2014

RE: Waupaca Foundry / 123-33469-00019

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

Notice of Decision: Approval – Effective Immediately

Please be advised that on behalf of the Commissioner of the Department of Environmental Management, I have issued a decision regarding the enclosed matter. Pursuant to IC 13-17-3-4 and 326 IAC 2, this permit modification 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 13-15-7-3 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 Environmental Adjudication, 100 North Senate Avenue, Government Center North, Suite N 501E, Indianapolis, IN 46204, **within eighteen (18) days of the mailing of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

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

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

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

Pursuant to 326 IAC 2-7-18(d), any person may petition the U.S. EPA to object to the issuance of a Title V operating permit 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 impractible 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.

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Bryant Esch
Waupaca Foundry, Inc Plant 5
P.O. Box 249
Waupaca, WI, 54981

March 12, 2014

Re: 123-33469-00019
Significant Permit Modification to
Part 70 Renewal No.: T123-27047-00019

Dear Mr. Esch:

Waupaca Foundry, Inc Plant 5 was issued a Part 70 Operating Permit Renewal No. T123-27047-00019 on July 23, 2009 for a stationary gray and ductile iron foundry located at 9856 State Highway 66, Tell City, Indiana 47586. An application requesting changes to this permit was received on July 24, 2013. Pursuant to the provisions of 326 IAC 2-7-12, a significant permit modification to this permit is hereby approved as described in the attached Technical Support Document.

For your convenience, the entire Part 70 Operating Permit Renewal as modified is attached.

A copy of the permit is available on the Internet at: http://www.in.gov/ai/appfiles/idem-caats/. For additional information about air permits and how the public and interested parties can participate, refer to the IDEM's Guide for Citizen Participation and Permit Guide on the Internet at: www.idem.in.gov

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 Mehul Sura, of my staff, at 317-233-6868 or 1-800-451-6027, and ask for extension 3-6868.

Sincerely,

Matthew Stuckey, Branch Chief
Permits Branch
Office of Air Quality

Attachments: Updated Permit and Technical Support Document

mns

cc: File - Perry County
Perry County Health Department
U.S. EPA, Region V
Compliance and Enforcement Branch

Steven Klafka
Wingra Engineering, S.C.
303 South Paterson Street
Madison, WI 53703

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Commissioner

Part 70 Operating Permit Renewal
OFFICE OF AIR QUALITY

Waupaca Foundry, Inc Plant 5
9856 State Highway 66
Tell City, Indiana 47586

(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.: T123-27047-00019	
Issued by: Matt Stuckey, Branch Chief Permits Branch Office of Air Quality	Issuance Date: July 23, 2009 Expiration Date: July 23, 2014

Significant Permit Modification No. 123-28470-00019, issued on November 20, 2009.
Significant Permit Modification No. 123-29497, issued on June 1, 2011
Minor Permit Modification No. 123-31720-00019, issued on June 29, 2012
Administrative Amendment No.123-32226-00019, issued on August 27, 2012
Significant Permit Modification No.: 123-33300-00019, issued on November 7, 2013

Significant Permit Modification No.: 123-33469-00019	
Issued by: for Callie Wagner for MS Matt Stuckey, Chief Permits Branch Office of Air Quality	Issuance Date: March 12, 2014 Expiration Date: July 23, 2014

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Part 70 Usage Report
Quarterly Deviation and Compliance Monitoring Report
Fugitive Dust Control Plan

SECTION A SOURCE SUMMARY

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

A.1 General Information [326 IAC 2-7-4(c)][326 IAC 2-7-5(15)][326 IAC 2-7-1(22)]

The Permittee owns and operates a stationary gray and ductile iron foundry.

Source Address:	9856 State Highway 66, Tell City, Indiana 47586
General Source Phone Number:	715-258-6611
SIC Code:	3321
County Location:	Perry
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Part 70 Operating Permit Program Major Source, under PSD Rules Major Source, Section 112 of the Clean Air Act 1 of 28 Source Categories

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

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

Phase I

(a) One (1) gray iron cupola, identified as P30, constructed in 1996, with a maximum melt rate of 100 tons per hour, using one (1) baghouse (C09A) for particulate control, one (1) incinerator (C11A) for carbon monoxide control and VOC emissions control, and one (1) dry alkaline injection system (C12A) for sulfur dioxide control, exhausting to stack S09;

(b) Four (4) production lines, each constructed in 1996, modified in 2010**,** consisting of the following:

(1) Line 1 (modified in 1998 and approved for modification in 2007)

(A) One (1) pouring/mold cooling operation, identified as P01, with a maximum throughput of 38 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stacks S01 and S04;

(B) One (1) shakeout operation, identified as P02, with a maximum throughput of 38 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;

(C) One (1) cast cooling operation, identified as P03, with a maximum throughput of 28 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stacks S01 and S04;

(D) One (1) pick & sort operation, identified as P04, with a maximum throughput of 38 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;

(E) One (1) cleaning & grinding operation, identified as P05, with a maximum throughput of 27 tons per hour, using a mechanical blaster, using one (1) baghouse (C07) for particulate control, exhausting to stack S07;

(2) Line 2
- (A) One (1) pouring/mold cooling operation, identified as P06, with a maximum throughput of 17 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;
- (B) One (1) shakeout operation, identified as P07, with a maximum throughput of 17 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;
- (C) One (1) cast cooling operation, identified as P08, with a maximum throughput of 17 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;
- (D) One (1) pick & sort operation, identified as P09, with a maximum throughput of 17 tons per hour, using one (1) baghouse (C07) for particulate control, exhausting to stack S07;
- (E) One (1) cleaning & grinding operation, identified as P10, with a maximum throughput of 17 tons per hour, using a mechanical blaster, using one (1) baghouse (C07) for particulate control, exhausting to stack S07;

(3) Line 3
- (A) One (1) pouring/mold cooling operation, identified as P11, with a maximum throughput of 17 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;
- (B) One (1) shakeout operation, identified as P12, with a maximum throughput of 17 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;
- (C) One (1) cast cooling operation, identified as P13, with a maximum throughput of 17 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;
- (D) One (1) pick & sort operation, identified as P14, with a maximum throughput of 17 tons per hour, using one (1) baghouse (C07) for particulate control, exhausting to stack S07;
- (E) One (1) cleaning & grinding operation, identified as P15, with a maximum throughput of 17 tons per hour, using a mechanical blaster, using one (1) baghouse (C07) for particulate control, exhausting to stack S07;

(4) Line 4 (approved for modification in 2014)
- (A) One (1) pouring/mold cooling operation, identified as P16, with a maximum throughput of 40 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;
- (B) One (1) shakeout operation, identified as P17, with a maximum throughput of 40 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;
- (C) One (1) cast cooling operation, identified as P18, with a maximum throughput of 40 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;
- (D) One (1) pick & sort operation, identified as P19, with a maximum throughput of 40 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;
- (E) One (1) cleaning & grinding operation, identified as P20, with a maximum throughput of 40 tons per hour, using a mechanical blaster, using one (1) baghouse (C07) for particulate control, exhausting to stack S07;

(c) Sand handling operations and ancillary operations, each constructed in 1996, consisting of the following:

(1) One (1) return sand handling & screen operation, identified as P21, with a maximum throughput of 522 tons per hour, using three (3) baghouses (C01, C02,

C03) for particulate control, exhausting to stack S01;

(2) One (1) sand cooling & water addition operation, identified as P22, with a maximum throughput of 522 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;

(3) One (1) sand mulling & handling operation, identified as P23, with a maximum throughput of 522 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;

(4) One (1) spent sand handling & processing operation, identified as P24, with a maximum throughput of 54 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;

(5) Air make-up units, identified as P52, with a maximum combined heat input capacity of 65.6 million British thermal units (MMBtu) per hour, combusting natural gas, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;

(6) One (1) metallic returns handling operation, identified as P25, with a maximum throughput of 33 tons per hour, using one(1) baghouse (C07) for particulate control, exhausting to stack S07;

(7) One (1) core sand handling operation, identified as P40, with a maximum throughput of 16 tons per hour, using one (1) baghouse (C08) for particulate control, exhausting to stack S08;

(8) One (1) core manufacturing operation, identified as P41, with a maximum throughput of 16 tons per hour, exhausting to stack S11;

(9) One (1) core machine & oven operation, identified as P51, with a maximum heat input capacity of 16.8 MMBtu per hour, combusting natural gas, exhausting to stack S11;

(10) One (1) ladle preheating operation, identified as P53, with a maximum heat input capacity of 11.5 MMBtu per hour, combusting natural gas, exhausting to stack S12;

(11) One (1) ladle filling & iron transport operation, identified as P85, with a maximum throughput of 100 tons per hour, using one (1) baghouse (C44) for particulate control, exhausting to stack S44;

(12) One (1) ladle filling & iron transport operation, identified as P85, with a maximum throughput of 100 tons per hour;

(13) One (1) Phase 1 Melt Area Ladle Cleaning, identified as P86, with a maximum capacity of 100 pounds of burn bars per hour based on a 24-hour average, using one (1) baghouse (C44) as control, and exhausting to stack S44;

(14) One (1) Line 1 ladle cleaning operation, identified as P86A, approved for modification in 2013, with a maximum capacity of 100 pounds of burn bars per hour based on a 24-hour average, using Baghouses C01, C02, and C03 as control, and exhausting to stack S01;

(15) One (1) Line 2 ladle cleaning operation, with a maximum capacity of 100 pounds of burn bars per hour based on a 24-hour average, using no control, and exhausting inside the building;

(16) One (1) Line 3 ladle cleaning operation, with a maximum capacity of 100 pounds of burn bars per hour based on a 24-hour average, using no control, and exhausting inside the building;

(17) One (1) Line 4 ladle cleaning operation, identified as P86B, approved for modification in 2013, with a maximum capacity of 100 pounds of burn bars per hour based on a 24-hour average, using Baghouses C01, C02, and C03 as control, and exhausting to stack S01;

(18) One (1) 16 ton iron bath desulfurization ladle operation, constructed in 2010, identified as P34, with a maximum throughput of 100 tons per hour, using one (1) baghouse (C44) for particulate matter control and exhausting through stack S44.

(d) Two (2) paint booths, one identified as P26A constructed in 2007 and modified in 2008,

and one identified as P26B, approved for construction in 2008, used to coat metal castings for rust protection, using spray guns with a combined maximum capacity of 16 (sixteen) gallons per hour, using overspray filters for PM control, exhausting to stacks S26A and S26B, respectively.

Phase II

(a) One (1) cupola iron melting system, identified as P33, constructed in 1998, with a maximum melt rate of 100 tons of iron per hour. VOC and CO emissions are controlled by one (1) recuperative incinerator, identified as C11B. Sulfur dioxide emissions are controlled by one (1) lime injection system (or equivalent), identified as C12B Particulate matter emissions are controlled by one (1) baghouse system, identified as C09B. The gases are then exhausted to stack S09;

(b) Four (4) production lines, each constructed in 1998, modified in 2010**,** consisting of the following:

(1) Line 5

(A) One (1) pouring/mold cooling operation, identified as P60, with a maximum production capacity of 28 tons per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C15. The gases are then exhausted to Stack S15;

(B) One (1) shakeout operation, identified as P61, with a maximum throughout capacity of 28 tons per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C15, that exhaust to Stack S15 or by one (1) baghouse system, identified as C16, that exhaust to Stack S16;

(C) One (1) cast cooling operation, identified as P62, with a maximum capacity of 28 tons per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C15. The gases are then exhausted to Stack S15.

(D) One (1) pick and sort operation, identified as P63, with a maximum throughput capacity of 28 tons per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C16. The gases are then exhausted to Stack S16;

(E) One (1) cleaning and grinding operation, identified as P64, with a maximum throughput capacity of 28 tons per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C16. The gases are then exhausted to Stack S16;

(2) Line 6

(A) One (1) pouring/mold cooling operation, identified as P65, with a maximum production capacity of 20 tons per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C15. The gases are then exhausted to Stack S15;

(B) One (1) shakeout operation, identified as P66, with a maximum throughput capacity of 20 tons per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C15, that exhaust to Stack S15 or by one (1) baghouse system, identified as C16, that exhaust to Stack S16;

(C) One (1) cast cooling operation, identified as P67, with a maximum capacity of 20 tons per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C15, that exhaust to Stack S15 or by one (1) baghouse system, identified as C16, that exhaust to Stack S16;

(D) One (1) pick and sort operation, identified as P68, with a maximum throughput capacity of 20 tons per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C16. The gases

are then exhausted to Stack S16;

(E) One (1) cleaning and grinding operation, identified as P69, with a maximum throughput capacity of 20 tons per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C16. The gases are then exhausted to Stack S16;

(3) Line 7

(A) One (1) pouring/mold cooling operation, identified as P70, with a maximum production capacity of 33 tons per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C15. The gases are then exhausted to Stack S15;

(B) One (1) shakeout operation, identified as P71, with a maximum production capacity of 33 tons per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C15, that exhaust to Stack S15 or by one (1) baghouse system, identified as C16, that exhaust to Stack S16;

(C) One (1)cast cooling operation, identified as P72, with a maximum production capacity of 33 tons per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C15, that exhaust to Stack S15 or by one (1) baghouse system, identified as C16, that exhaust to Stack S16;

(D) One (1) pick and sort operation, identified as P73, with a maximum throughput capacity of 33 tons per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C16. The gases are then exhausted to Stack S16;

(E) One (1) cleaning and grinding operation, identified as P74, with a maximum throughput capacity of 33 tons per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C16. The gases are then exhausted to Stack S16;

(4) Line 8

(A) One (1) pouring/mold cooling operation, identified as P75, with a maximum production capacity of 20 tons per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C15. The gases are then exhausted to Stack S15;

(B) One (1) shakeout operation, identified as P76, with a maximum throughput capacity of 20 tons per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C16. The gases are then exhausted to Stack S16;

(C) One (1) cast cooling operation, identified as P77, with a maximum capacity of 20 tons per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C16. The gases are then exhausted to Stack S16;

(D) One (1) pick and sort operation, identified as P78, with a maximum throughput capacity of 20 tons per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C16. The gases are then exhausted to Stack S16; and

(E) One (1) cleaning and grinding operation, identified as P79, with a maximum throughput capacity of 20 tons per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C16. The gases are then exhausted to Stack S16.

(c) Sand handling operations and ancillary operations, each constructed in 1998, modified in 2010, consisting of the following:

(1) One (1) return sand handling and screening operation, identified as P80, with a

maximum throughput capacity of 660 tons of sand per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C15, that exhaust to Stack S15 or by one (1) baghouse system, identified as C16, that exhaust to Stack S16;

(2) One (1) sand mulling and handling operation, identified as P81, with a maximum capacity of 660 tons of sand per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C15. The gases are then exhausted to Stack S15;

(3) One (1) sand blending and cooling operation, identified as P82, with a maximum capacity of 660 tons of sand per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C15. The gases are then exhausted to Stack S15;

(4) One (1) spent sand and dust handling operation, identified as P83, with a maximum throughput capacity of 55 tons of sand per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C15. The gases are then exhausted to Stack S15;

(5) One (1) metal returns handling operation, identified as P84, with a maximum capacity of 44 tons per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C15, that exhaust to Stack S15 or by one (1) baghouse system, identified as C16, that exhaust to Stack S16;

(6) One (1) enclosed cupola charge make-up and handling unit with a maximum charge of 114.0 tons per hour;

(7) One (1) ladle filling and iron transport operation with a maximum capacity of 188 tons of iron per hour;

(8) One (1) Phase 2 Melt Area Ladle Cleaning, identified as P86, with a maximum capacity of 100 pounds of burn bars per hour based on a 24-hour average, using one (1) baghouse (C44) as control, and exhausting to stack S44;

(9) One (1) Line 5 ladle cleaning operation, with a maximum capacity of 100 pounds of burn bars per hour based on a 24-hour average, using no control, and exhausting inside the building;

(10) One (1) Line 6 ladle cleaning operation, with a maximum capacity of 100 pounds of burn bars per hour based on a 24-hour average, using no control, and exhausting inside the building;

(11) One (1) Line 7 ladle cleaning operation, with a maximum capacity of 100 pounds of burn bars per hour based on a 24-hour average, using no control, and exhausting inside the building;

(12) One (1) Line 8 ladle cleaning operation, with a maximum capacity of 100 pounds of burn bars per hour based on a 24-hour average, using no control, and exhausting inside the building;

(13) One (1) Phase 2 Ductile Iron Treatment Ladle Cleaning, with a maximum capacity of 100 pounds of burn bars per hour based on a 24-hour average, with approximately 25% of emissions controlled by Baghouse C15, and exhausting to stack S15, and with approximately 75% emissions uncontrolled, and exhausting inside the building;

Note: The ductile treatment operation includes locations where treatment occurs and iron is transferred. Fumes in the treatment area are captured by Baghouse C15 but those in the metal transfer area are not captured.

(14) Two (2) ductile iron treatment stations, both identified as P35, each with a maximum production capacity of 50 tons per hour. Particulate matter emissions are controlled by two (2) baghouse systems identified as C15 and C35. The gases from both baghouses are then exhausted to Stack S15;

(15) One (1) phenolic-urethane core sand handling system, identified as P42, constructed in 1998 and modified in 2008, with a maximum production capacity of 32 tons of cores per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C08, that exhausts to Stack S08;

(16) One (1) phenolic-urethane core making process, identified as P43, with a

maximum production capacity of 20 tons of cores per hour. Volatile organic compound emissions are controlled by one (1) packed bed scrubber (or equivalent), identified as C14. The gases are then exhausted to Stack S14;

(17) One (1) phenolic-urethane core making process, identified as P44, consisting of 2 mixers and 2 core machines, each with a maximum capacity of 3 tons per hour. DMIPA emissions are controlled by one (1) packed bed scrubber, identified as C14. The gases are then exhausted to Stack S14;

(18) Raw material handling including iron handling at a maximum rate of 150 tons per hour, alloys handling at a maximum rate of 1.5 tons per hour, coke handling at a maximum rate of 15 tons per hour, and limestone handling at a maximum rate of 4.5 tons per hour;

(19) Natural gas fired air make-up units equipped with low-NOx burners, identified as P54, with a maximum heat input rate of 80 MMBtu per hour exhausting to Stack S15.

(20) One (1) pattern shop, identified as P50, controlled by a baghouse, exhausting to stack S08.

(d) One (1) autogrinder operation, to be constructed in 2008, identified as P87, with a maximum capacity of 22.5 tons of castings per hour, with emissions controlled by existing Baghouse C16 and exhausting to stack S16 [326 IAC 6-3-2].

(e) Two (2) autogrinder machines, to be constructed in 2012, identified as P87A, with a maximum capacity of 1.02 tons of castings per hour, each, with emissions voluntarily controlled by Baghouse C87A and exhausting into the building [326 IAC 6-3-2].

Core Room Expansion I

(a) One (1) phenolic-urethane core sand handling system, identified as P46, constructed in 2005 and modified in 2008, with a maximum production capacity of 51 tons of cores per hour. Particulate matter emissions are controlled by one (1) baghouse, identified as C18, and exhausting inside the building;

(b) One (1) phenolic-urethane core making process, identified as P47, to begin construction in 2005, consisting of 3 mixers and 3 core machines, each with a maximum capacity of 15 tons per hour. DMIPA catalyst emissions are controlled by one (1) packed bed scrubber, identified as C17. The gases are then exhausted to Stack S17;

(c) Three (3) natural gas-fired core drying ovens and natural gas-fired air make-up units, identified as P48, to begin construction in 2005, with the core drying ovens having a combined maximum heat input capacity of 9.0 MMBtu per hour and the air make-up units having a combined maximum heat input capacity of 3.2 MMBtu per hour, exhausting inside the building.

Core Room Expansion II

(a) one (1) phenolic-urethane core machine, identified as P45A, to be constructed in 2008, with a maximum capacity of 6 tons per hour, with emissions controlled by existing scrubber C14 and exhausting through stack S14;

(b) one (1) phenolic-urethane core machine, identified as P45B, to be constructed in 2008, with a maximum capacity of 6 tons per hour, with emissions controlled by existing scrubber C17 and exhausting through stack S17; and

(c) two (2) natural gas-fired core dry oven, to be constructed in 2008, identified as P48A and P48B, with a maximum capacity of 2.5 MMBtu/hr each, with emissions exhausting in to the building.

A.3 Specifically Regulated Insignificant Activities [326 IAC 2-7-1(21)] [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)]

This stationary source also includes the following insignificant activities which are specifically regulated, as defined in 326 IAC 2-7-1(21):

(a) Degreasing operations that do not exceed 145 gallons per 12 months, except if subject to 326 IAC 20-6; [326 IAC 8-3-2] [326 IAC 8-3-5]

A.4 Part 70 Permit Applicability [326 IAC 2-7-2]

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

(a) It is a major source, as defined in 326 IAC 2-7-1(22);

(b) It is a source in a source category designated by the United States Environmental Protection Agency (U.S. EPA) under 40 CFR 70.3 (Part 70 - Applicability).

SECTION B GENERAL CONDITIONS

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

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

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

(a) The Part 70 Operating Permit, T123-27047-00019, is issued for a fixed term of five (5) years as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3. Subsequent revisions, modifications, or amendments of this permit do not affect the expiration date of this permit or of permits issued pursuant to Title IV of the Clean Air Act and 326 IAC 21 (Acid Deposition Control).

(b) If IDEM, OAQ, upon receiving a timely and complete renewal permit application, fails to issue or deny the permit renewal prior to the expiration date of this permit, this existing permit shall not expire and all terms and conditions shall continue in effect, including any permit shield provided in 326 IAC 2-7-15, until the renewal permit has been issued or denied.

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

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

(a) the condition is modified in a subsequent permit action pursuant to Title I of the Clean Air Act; or

(b) the emission unit to which the condition pertains permanently ceases operation.

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

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

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

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

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

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

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

(a) The Permittee shall furnish to IDEM, OAQ, within a reasonable time, any information that IDEM, OAQ may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. Upon request, the Permittee shall also furnish to IDEM, OAQ copies of records required to be kept by this permit.

(b) For information furnished by the Permittee to IDEM, OAQ, the Permittee may include a claim of confidentiality in accordance with 326 IAC 17.1. When furnishing copies of requested records directly to U. S. EPA, the Permittee may assert a claim of confidentiality in accordance with 40 CFR 2, Subpart B.

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

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

(i) it contains a certification by a "responsible official", as defined by 326 IAC 2-7-1 (34), and

(ii) the certification is based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

(b) The Permittee may use the attached Certification Form, or its equivalent, with each submittal requiring certification. One (1) certification may cover multiple forms in one (1) submittal.

(c) A "responsible official" is defined at 326 IAC 2-7-1(34).

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

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

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

and

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

(b) The annual compliance certification report required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.

(c) The annual compliance certification report shall include the following:

(1) The appropriate identification of each term or condition of this permit that is the basis of the certification;

(2) The compliance status;

(3) Whether compliance was continuous or intermittent;

(4) The methods used for determining the compliance status of the source, currently and over the reporting period consistent with 326 IAC 2-7-5(3); and

(5) Such other facts, as specified in Sections D of this permit, as IDEM, OAQ may require to determine the compliance status of the source.

The submittal by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).

B.10 Preventive Maintenance Plan [326 IAC 2-7-5(1),(3) and (13)][326 IAC 2-7-6(1) and (6)][326 IAC 1-6-3]

(a) If required by specific condition(s) in Section D of this permit where no PMP was previously required, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMPs) no later than ninety (90) days after issuance of this permit or ninety (90) days after initial start-up, whichever is later, including the following information on each facility:

(1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;

(2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and

(3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

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

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

The PMP extension notification does not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).

(b) A copy of the PMPs shall be submitted to IDEM, OAQ upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ may require the Permittee to revise its PMPs whenever lack of proper maintenance causes or is the primary contributor to an exceedance of any limitation on emissions or potential to emit. The PMPs do not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).

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

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

(a) An emergency, as defined in 326 IAC 2-7-1(12), is not an affirmative defense for an action brought for noncompliance with a federal or state health-based emission limitation.

(b) An emergency, as defined in 326 IAC 2-7-1(12), constitutes an affirmative defense to an action brought for noncompliance with a technology-based emission limitation if the affirmative defense of an emergency is demonstrated through properly signed, contemporaneous operating logs or other relevant evidence that describe the following:

(1) An emergency occurred and the Permittee can, to the extent possible, identify the causes of the emergency;

(2) The permitted facility was at the time being properly operated;

(3) During the period of an emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or other requirements in this permit;

(4) For each emergency lasting one (1) hour or more, the Permittee notified IDEM, OAQ and Southwest Regional Office, no later than four (4) daytime business hours after the beginning of the emergency, or after the emergency was discovered or reasonably should have been discovered;

Telephone Number: 1-800-451-6027 (ask for Office of Air Quality, Compliance Section), or
Telephone Number: 317-233-0178 (ask for Compliance Section)
Facsimile Number: 317-233-6865
Southwest Regional Office phone: (812) 380-2305; fax: (812) 380-2304**.**

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

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

no later than two (2) working days of the time when emission limitations were exceeded due to the emergency.

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

(A) A description of the emergency;

(B) Any steps taken to mitigate the emissions; and

(C) Corrective actions taken.

The notification which shall be submitted by the Permittee does not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a"responsible official" as defined by 326 IAC 2-7-1(34).

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

(c) In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.

(d) This emergency provision supersedes 326 IAC 1-6 (Malfunctions). This permit condition is in addition to any emergency or upset provision contained in any applicable requirement.

(e) The Permittee seeking to establish the occurrence of an emergency shall make records available upon request to ensure that failure to implement a PMP did not cause or contribute to an exceedance of any limitations on emissions. However, IDEM, OAQ may require that the Preventive Maintenance Plans required under 326 IAC 2-7-4(c)(9) be revised in response to an emergency.

(f) Failure to notify IDEM, OAQ by telephone or facsimile of an emergency lasting more than one (1) hour in accordance with (b)(4) and (5) of this condition shall constitute a violation of 326 IAC 2-7 and any other applicable rules.

(g) If the emergency situation causes a deviation from a technology-based limit, the Permittee may continue to operate the affected emitting facilities during the emergency provided the Permittee immediately takes all reasonable steps to correct the emergency and minimize emissions.

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

(a) Pursuant to 326 IAC 2-7-15, the Permittee has been granted a permit shield. The permit shield provides that compliance with the conditions of this permit shall be deemed compliance with any applicable requirements as of the date of permit issuance, provided that either the applicable requirements are included and specifically identified in this permit or the permit contains an explicit determination or concise summary of a determination that other specifically identified requirements are not applicable. The Indiana statutes from IC 13 and rules from 326 IAC, referenced in conditions in this permit, are those applicable at the time the permit was issued. The issuance or possession of this permit shall not alone constitute a defense against an alleged violation of any law, regulation or standard, except for the requirement to obtain a Part 70 permit under 326 IAC 2-7 or for applicable requirements for which a permit shield has been granted.

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

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

(c) No permit shield shall apply to any permit term or condition that is determined after issuance of this permit to have been based on erroneous information supplied in the permit application. Erroneous information means information that the Permittee knew to be false, or in the exercise of reasonable care should have been known to be false, at the time the information was submitted.

(d) Nothing in 326 IAC 2-7-15 or in this permit shall alter or affect the following:

(1) The provisions of Section 303 of the Clean Air Act (emergency orders), including the authority of the U.S. EPA under Section 303 of the Clean Air Act;

(2) The liability of the Permittee for any violation of applicable requirements prior to or at the time of this permit's issuance;

(3) The applicable requirements of the acid rain program, consistent with Section 408(a) of the Clean Air Act; and

(4) The ability of U.S. EPA to obtain information from the Permittee under Section 114 of the Clean Air Act.

(e) This permit shield is not applicable to any change made under 326 IAC 2-7-20(b)(2) (Sections 502(b)(10) of the Clean Air Act changes) and 326 IAC 2-7-20(c)(2) (trading based on State Implementation Plan (SIP) provisions).

(f) This permit shield is not applicable to modifications eligible for group processing until after IDEM, OAQ, has issued the modifications. [326 IAC 2-7-12(c)(7)]

(g) This permit shield is not applicable to minor Part 70 permit modifications until after IDEM, OAQ, has issued the modification. [326 IAC 2-7-12(b)(8)]

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

(a) All terms and conditions of permits established prior to T123-27047-00019 and issued pursuant to permitting programs approved into the state implementation plan have been either:

(1) incorporated as originally stated,

(2) revised under 326 IAC 2-7-10.5, or

(3) deleted under 326 IAC 2-7-10.5.

(b) Provided that all terms and conditions are accurately reflected in this combined permit, all previous registrations and permits are superseded by this combined new source review and part 70 operating permit, except for permits issued pursuant to Title IV of the Clean Air Act and 326 IAC 21 (Acid Deposition Control)

B.14 Termination of Right to Operate [326 IAC 2-7-10][326 IAC 2-7-4(a)]

The Permittee's right to operate this source terminates with the expiration of this permit unless a timely and complete renewal application is submitted at least nine (9) months prior to the date of expiration of the source's existing permit, consistent with 326 IAC 2-7-3 and 326 IAC 2-7-4(a).

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

(a) This permit may be modified, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a Part 70 Operating Permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any condition of this permit. [326 IAC 2-7-5(6)(C)] The notification by the Permittee does require a certification that meets the requirement of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).

(b) This permit shall be reopened and revised under any of the circumstances listed in IC 13-15-7-2 or if IDEM, OAQ determines any of the following:

(1) That this permit contains a material mistake.

(2) That inaccurate statements were made in establishing the emissions standards or other terms or conditions.

(3) That this permit must be revised or revoked to assure compliance with an applicable requirement. [326 IAC 2-7-9(a)(3)]

(c) Proceedings by IDEM, OAQ to reopen and revise this permit shall follow the same procedures as apply to initial permit issuance and shall affect only those parts of this permit for which cause to reopen exists. Such reopening and revision shall be made as expeditiously as practicable. [326 IAC 2-7-9(b)]

(d) The reopening and revision of this permit, under 326 IAC 2-7-9(a), shall not be initiated before notice of such intent is provided to the Permittee by IDEM, OAQ at least thirty (30) days in advance of the date this permit is to be reopened, except that IDEM, OAQ may provide a shorter time period in the case of an emergency. [326 IAC 2-7-9(c)]

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

(a) The application for renewal shall be submitted using the application form or forms prescribed by IDEM, OAQ and shall include the information specified in 326 IAC 2-7-4. Such information shall be included in the application for each emission unit at this source, except those emission units included on the trivial or insignificant activities list contained in 326 IAC 2-7-1(21) and 326 IAC 2-7-1(40). The renewal application does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).

Request for renewal shall be submitted to:

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

(b) A timely renewal application is one that is:

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

(2) If the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.

(c) If the Permittee submits a timely and complete application for renewal of this permit, the source's failure to have a permit is not a violation of 326 IAC 2-7 until IDEM, OAQ takes final action on the renewal application, except that this protection shall cease to apply if, subsequent to the completeness determination, the Permittee fails to submit by the deadline specified pursuant to 326 IAC 2-7-4(a)(2)(D), in writing by IDEM, OAQ any additional information identified as being needed to process the application.

B.17 Permit Amendment or Modification [326 IAC 2-7-11][326 IAC 2-7-12] [40 CFR 72]

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

(b) Pursuant to 326 IAC 2-7-11(b) and 326 IAC 2-7-12(a), administrative Part 70 operating permit amendments and permit modifications for purposes of the acid rain portion of a Part 70 permit shall be governed by regulations promulgated under Title IV of the Clean Air Act. [40 CFR 72]

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

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

Any such application shall be certified by the "responsible official" as defined by 326 IAC 2-7-1(34).

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

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

(a) No Part 70 permit revision or notice shall be required under any approved economic incentives, marketable Part 70 permits, emissions trading, and other similar programs or processes for changes that are provided for in a Part 70 permit.

(b) Notwithstanding 326 IAC 2-7-12(b)(1) and 326 IAC 2-7-12(c)(1), minor Part 70 permit modification procedures may be used for Part 70 modifications involving the use of economic incentives, marketable Part 70 permits, emissions trading, and other similar approaches to the extent that such minor Part 70 permit modification procedures are explicitly provided for in the applicable State Implementation Plan (SIP) or in applicable requirements promulgated or approved by the U.S. EPA.

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

(a) The Permittee may make any change or changes at the source that are described in 326 IAC 2-7-20(b),(c), or (e) without a prior permit revision, if each of the following conditions is met:

(1) The changes are not modifications under any provision of Title I of the Clean Air Act;

(2) Any preconstruction approval required by 326 IAC 2-7-10.5 has been obtained;

(3) The changes do not result in emissions which exceed the limitations provided in this permit (whether expressed herein as a rate of emissions or in terms of total emissions);

(4) The Permittee notifies the:

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

and

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

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

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

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

(b) The Permittee may make Section 502(b)(10) of the Clean Air Act changes (this term is defined at 326 IAC 2-7-1(36)) without a permit revision, subject to the constraint of 326 IAC 2-7-20(a). For each such Section 502(b)(10) of the Clean Air Act change, the required written notification shall include the following:

(1) A brief description of the change within the source;

(2) The date on which the change will occur;

(3) Any change in emissions; and

(4) Any permit term or condition that is no longer applicable as a result of the change.

The notification which shall be submitted is not considered an application form, report or compliance certification. Therefore, the notification by the Permittee does not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a “responsible official” as defined by 326 IAC 2-7-1(34).

(c) Emission Trades [326 IAC 2-7-20(c)]
The Permittee may trade emissions increases and decreases at the source, where the applicable SIP provides for such emission trades without requiring a permit revision, subject to the constraints of Section (a) of this condition and those in 326 IAC 2-7-20(c).

(d) Alternative Operating Scenarios [326 IAC 2-7-20(d)]
The Permittee may make changes at the source within the range of alternative operating scenarios that are described in the terms and conditions of this permit in accordance with 326 IAC 2-7-5(9). No prior notification of IDEM, OAQ, or U.S. EPA is required.

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

(f) This condition does not apply to emission trades of SO_2 or NO_X under 326 IAC 21 or 326 IAC 10-4.

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

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

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

Upon presentation of proper identification cards, credentials, and other documents as may be required by law, and subject to the Permittee’s right under all applicable laws and regulations to assert that the information collected by the agency is confidential and entitled to be treated as

such, the Permittee shall allow IDEM, OAQ, U.S. EPA, or an authorized representative to perform the following:

(a) Enter upon the Permittee's premises where a Part 70 source is located, or emissions related activity is conducted, or where records must be kept under the conditions of this permit;

(b) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, have access to and copy any records that must be kept under the conditions of this permit;

(c) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, inspect any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit;

(d) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, sample or monitor substances or parameters for the purpose of assuring compliance with this permit or applicable requirements; and

(e) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, utilize any photographic, recording, testing, monitoring, or other equipment for the purpose of assuring compliance with this permit or applicable requirements.

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

(a) The Permittee must comply with the requirements of 326 IAC 2-7-11 whenever the Permittee seeks to change the ownership or operational control of the source and no other change in the permit is necessary.

(b) Any application requesting a change in the ownership or operational control of the source shall contain a written agreement containing a specific date for transfer of permit responsibility, coverage and liability between the current and new Permittee. The application shall be submitted to:

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

The application which shall be submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).

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

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

(a) The Permittee shall pay annual fees to IDEM, OAQ within thirty (30) calendar days of receipt of a billing. Pursuant to 326 IAC 2-7-19(b), if the Permittee does not receive a bill from IDEM, OAQ the applicable fee is due April 1 of each year.

(b) Except as provided in 326 IAC 2-7-19(e), failure to pay may result in administrative enforcement action or revocation of this permit.

(c) The Permittee may call the following telephone numbers: 1-800-451-6027 or 317-233-4230 (ask for OAQ, Billing, Licensing, and Training Section), to determine the appropriate permit fee.

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

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

SECTION C SOURCE OPERATION CONDITIONS

Entire Source

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

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

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

C.2 Opacity [326 IAC 5-1]

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

(a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

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

C.3 Open Burning [326 IAC 4-1] [IC 13-17-9]

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

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

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

C.5 Fugitive Dust Emissions [326 IAC 6-4]

The Permittee shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions). 326 IAC 6-4-2(4) is not federally enforceable.

C.6 Fugitive Particulate Matter Emission Limitations [326 IAC 6-5]

Pursuant to 326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations), fugitive particulate matter emissions shall be controlled according to the plan dated September 24, 2008 or the most current plan which has been submitted to IDEM. The plan is included as Attachment A.

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

The Permittee shall comply with the applicable provisions of 326 IAC 1-7 (Stack Height Provisions), for all exhaust stacks through which a potential (before controls) of twenty-five (25) tons per year or more of particulate matter or sulfur dioxide is emitted. The provisions of

326 IAC 1-7-1(3), 326 IAC 1-7-2, 326 IAC 1-7-3(c) and (d), 326 IAC 1-7-4, and 326 IAC 1-7-5(a), (b), and (d) are not federally enforceable.

C.8 Asbestos Abatement Projects [326 IAC 14-10] [326 IAC 18] [40 CFR 61, Subpart M]

(a) Notification requirements apply to each owner or operator. If the combined amount of regulated asbestos containing material (RACM) to be stripped, removed or disturbed is at least 260 linear feet on pipes or 160 square feet on other facility components, or at least thirty-five (35) cubic feet on all facility components, then the notification requirements of 326 IAC 14-10-3 are mandatory. All demolition projects require notification whether or not asbestos is present.

(b) The Permittee shall ensure that a written notification is sent on a form provided by the Commissioner at least ten (10) working days before asbestos stripping or removal work or before demolition begins, per 326 IAC 14-10-3, and shall update such notice as necessary, including, but not limited to the following:

(1) When the amount of affected asbestos containing material increases or decreases by at least twenty percent (20%); or

(2) If there is a change in the following:

(A) Asbestos removal or demolition start date;

(B) Removal or demolition contractor; or

(C) Waste disposal site.

(c) The Permittee shall ensure that the notice is postmarked or delivered according to the guidelines set forth in 326 IAC 14-10-3(2).

(d) The notice to be submitted shall include the information enumerated in 326 IAC 14-10-3(3).

All required notifications shall be submitted to:

Indiana Department of Environmental Management
Asbestos Section, Office of Air Quality
100 North Senate Avenue
MC 61-52 IGCN 1003
Indianapolis, Indiana 46204-2251

The notice shall include a signed certification from the owner or operator that the information provided in this notification is correct and that only Indiana licensed workers and project supervisors will be used to implement the asbestos removal project. The notifications do not require a certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

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

(f) Demolition and Renovation
The Permittee shall thoroughly inspect the affected facility or part of the facility where the demolition or renovation will occur for the presence of asbestos pursuant to 40 CFR 61.145(a).

(g) Indiana Licensed Asbestos Inspector
The Permittee shall comply with 326 IAC 14-10-1(a) that requires the owner or operator, prior to a renovation/demolition, to use an Indiana Licensed Asbestos Inspector to thoroughly inspect the affected portion of the facility for the presence of asbestos. The requirement to use an Indiana Licensed Asbestos inspector is not federally enforceable.

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

C.9 Performance Testing [326 IAC 3-6]

(a) Compliance testing on new emissions units shall be conducted within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up, if specified in Section D of this approval.

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

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

no later than thirty-five (35) days prior to the intended test date. The protocol submitted by the Permittee does not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).

(b) The Permittee shall notify IDEM, OAQ of the actual test date at least fourteen (14) days prior to the actual test date. The notification submitted by the Permittee does not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a"responsible official" as defined by 326 IAC 2-7-1(34).

(c) Pursuant to 326 IAC 3-6-4(b), all test reports must be received by IDEM, OAQ not later than forty-five (45) days after the completion of the testing. An extension may be granted by IDEM, OAQ if the Permittee submits to IDEM, OAQ a reasonable written explanation not later than five (5) days prior to the end of the initial forty-five (45) day period. The extension request submitted by the Permittee does not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).

Compliance Requirements [326 IAC 2-1.1-11]

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

The commissioner may require stack testing, monitoring, or reporting at any time to assure compliance with all applicable requirements by issuing an order under 326 IAC 2-1.1-11. Any monitoring or testing shall be performed in accordance with 326 IAC 3 or other methods approved by the commissioner or the U. S. EPA.

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

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

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

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

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

The notification which shall be submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).

Unless otherwise specified in the approval for the new emission unit(s), compliance monitoring for new emission units or emission units added through a source modification shall be implemented when operation begins.

C.12 Maintenance of Continuous Opacity Monitoring Equipment [326 IAC 2-7-5(3)(A)(iii)]

(a) The Permittee shall install, calibrate, maintain, and operate all necessary continuous opacity monitoring systems (COMS) and related equipment.

(b) All COMS shall meet the performance specifications of 40 CFR 60, Appendix B, Performance Specification No. 1, and are subject to monitor system certification requirements pursuant to 326 IAC 3-5.

(c) In the event that a breakdown of a COMS occurs, a record shall be made of the times and reasons of the breakdown and efforts made to correct the problem.

(d) Whenever a COMS is malfunctioning or is down for maintenance or repairs for a period of twenty-four (24) hours or more and a backup COMS is not online within twenty-four (24) hours of shutdown or malfunction of the primary COMS, the Permittee shall provide a certified opacity reader, who may be an employee of the Permittee or an independent contractor, to self-monitor the emissions from the emission unit stack.

(1) Visible emission readings shall be performed in accordance with 40 CFR 60, Appendix A, Method 9, for a minimum of five (5) consecutive six (6) minute averaging periods beginning not more than twenty-four (24) hours after the start of the malfunction or down time.

(2) Method 9 opacity readings shall be repeated for a minimum of five (5) consecutive six (6) minute averaging periods at least twice per day during daylight operations, with at least four (4) hours between each set of readings, until a COMS is online.

(3) Method 9 readings may be discontinued once a COMS is online.

(4) Any opacity exceedances determined by Method 9 readings shall be reported with the Quarterly Opacity Exceedances Reports.

(e) Nothing in this permit shall excuse the Permittee from complying with the requirements to operate a continuous opacity monitoring system pursuant to 326 IAC 3-5, (and 40 CFR 60 and/or 40 CFR 63).

C.13 Maintenance of Continuous Emission Monitoring Equipment [326 IAC 2-7-5(3)(A)(iii)]

(a) The Permittee shall install, calibrate, maintain, and operate all necessary continuous emission monitoring systems (CEMS) and related equipment.

(b) All continuous emission monitoring systems shall meet all applicable performance specifications of 40 CFR 60 or any other performance specification, and are subject to monitor system certification requirements pursuant to 326 IAC 3-5-3.

(c) In the event that a breakdown of a continuous emission monitoring system occurs, a record shall be made of the times and reasons of the breakdown and efforts made to correct the problem.

(d) Whenever a continuous emission monitor other than an opacity monitor is malfunctioning or is down for maintenance or repairs, the following shall be used as an alternative to continuous data collection:

(1) The relevant requirements of 40 CFR 75-Missiong Data Substitute Procedure shall be used to provide substitute data except when demonstrating Compliance.

(e) Nothing in this permit shall excuse the Permittee from complying with the requirements to operate a continuous emission monitoring system pursuant to 326 IAC 2-2-3.

C.14 Instrument Specifications [326 IAC 2-1.1-11] [326 IAC 2-7-5(3)] [326 IAC 2-7-6(1)]

(a) When required by any condition of this permit, an analog instrument used to measure a parameter related to the operation of an air pollution control device shall have a scale such that the expected maximum reading for the normal range shall be no less than twenty percent (20%) of full scale.

(b) The Permittee may request that the IDEM, OAQ approve the use of an instrument that does not meet the above specifications provided the Permittee can demonstrate that an alternative instrument specification will adequately ensure compliance with permit conditions requiring the measurement of the parameters.

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

C.15 Emergency Reduction Plans [326 IAC 1-5-2] [326 IAC 1-5-3]

Pursuant to 326 IAC 1-5-2 (Emergency Reduction Plans; Submission):

(a) The Permittee prepared and submitted written emergency reduction plans (ERPs) consistent with safe operating procedures on.

(b) Upon direct notification by IDEM, OAQ that a specific air pollution episode level is in effect, the Permittee shall immediately put into effect the actions stipulated in the approved ERP for the appropriate episode level. [326 IAC 1-5-3]

C.16 Risk Management Plan [326 IAC 2-7-5(12)] [40 CFR 68]

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

C.17 Response to Excursions or Exceedances [326 IAC 2-7-5] [326 IAC 2-7-6]

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

(a) The Permittee shall take reasonable response steps to restore operation of the emissions unit (including any control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing excess emissions.

(b) The response shall include minimizing the period of any startup, shutdown or malfunction The response may include, but is not limited to, the following:

(1) initial inspection and evaluation;

(2) recording that operations returned or are returning to normal without operator action (such as through response by a computerized distribution control system); or

(3) any necessary follow-up actions to return operation to normal or usual manner of operation.

(c) A determination of whether the Permittee has used acceptable procedures in response to an excursion or exceedance will be based on information available, which may include, but is not necessarily limited to, the following:

(1) monitoring results;

(2) review of operation and maintenance procedures and records; and/or

(3) inspection of the control device, associated capture system, and the process.

(d) Failure to take reasonable response steps shall be considered a deviation from the permit.

(e) The Permittee shall record the reasonable response steps taken.

C.18 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-7-5][326 IAC 2-7-6]

(a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall submit a description of its response actions to IDEM, OAQ, no later than seventy-five (75) days after the date of the test

(b) A retest to demonstrate compliance shall be performed no later than one hundred eighty (180) days after the date of the test. Should the Permittee demonstrate to IDEM, OAQ that retesting in one hundred eighty (180) days is not practicable, IDEM, OAQ may extend the retesting deadline.

(c) IDEM, OAQ reserves the authority to take any actions allowed under law in response to noncompliant stack tests.

The response action documents submitted pursuant to this condition do require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).

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

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

Pursuant to 326 IAC 2-6-3(a)(1), the Permittee shall submit no later than July 1 of each year an emission statement covering the previous calendar year. The emission statement shall contain, at a minimum, the information specified in 326 IAC 2-6-4(c) and shall meet the following requirements:

(a) Indicate estimated actual emissions of all pollutants listed in 326 IAC 2-6-4(a);

(b) Indicate estimated actual emissions of regulated pollutants as defined by 326 IAC 2-7-1(32) (“Regulated pollutant, which is used only for purposes of Section 19 of this rule”) from the source, for purpose of fee assessment.

The statement must be submitted to:

Indiana Department of Environmental Management
Technical Support and Modeling Section, Office of Air Quality
100 North Senate Avenue
MC 61-50 IGCN 1003
Indianapolis, Indiana 46204-2251

The emission statement does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official” as defined by 326 IAC 2-7-1(34).

C.20 General Record Keeping Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-6][326 IAC 2-2] [326 IAC 2-3]

(a) Records of all required monitoring data, reports and support information required by this permit shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be physically present or electronically accessible at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.

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

(c) If there is a reasonable possibility (as defined in 40 CFR 51.165(a)(6)(vi)(A), 40 CFR 51.165(a)(6)(vi)(B), 40 CFR 51.166(r)(6)(vi)(a), and/or 40 CFR 51.166(r)(6)(vi)(b)) that a “project” (as defined in 326 IAC 2-2-1(qq) and/or 326 IAC 2-3-1(ll)) at an existing emissions unit, other than projects at a source with a Plantwide Applicability Limitation (PAL), which is not part of a “major modification” (as defined in 326 IAC 2-2-1(ee) and/or 326 IAC 2-3-1(z)) may result in significant emissions increase and the Permittee elects to utilize the “projected actual emissions” (as defined in 326 IAC 2-2-1(rr) and/or 326 IAC 2-3-1(mm)), the Permittee shall comply with following:

(1) Before beginning actual construction of the “project” (as defined in

326 IAC 2-2-1(qq) and/or 326 IAC 2-3-1(ll)) at an existing emissions unit, document and maintain the following records:

(A) A description of the project.

(B) Identification of any emissions unit whose emissions of a regulated new source review pollutant could be affected by the project.

(C) A description of the applicability test used to determine that the project is not a major modification for any regulated NSR pollutant, including:

(i) Baseline actual emissions;

(ii) Projected actual emissions;

(iii) Amount of emissions excluded under section 326 IAC 2-2-1(rr)(2)(A)(iii) and/or 326 IAC 2-3-1 (mm)(2)(A)(iii); and

(iv) An explanation for why the amount was excluded, and any netting calculations, if applicable.

(d) If there is a reasonable possibility (as defined in 40 CFR 51.165(a)(6)(vi)(A) and/or 40 CFR 51.166(r)(6)(vi)(a)) that a "project" (as defined in 326 IAC 2-2-1(qq) and/or 326 IAC 2-3-1(ll)) at an existing emissions unit, other than projects at a source with a Plantwide Applicability Limitation (PAL), which is not part of a "major modification" (as defined in 326 IAC 2-2-1(ee) and/or 326 IAC 2-3-1(z)) may result in significant emissions increase and the Permittee elects to utilize the "projected actual emissions" (as defined in 326 IAC 2-2-1(rr) and/or 326 IAC 2-3-1(mm)), the Permittee shall comply with following:

(1) Monitor the emissions of any regulated NSR pollutant that could increase as a result of the project and that is emitted by any existing emissions unit identified in (1)(B) above; and

(2) Calculate and maintain a record of the annual emissions, in tons per year on a calendar year basis, for a period of five (5) years following resumption of regular operations after the change, or for a period of ten (10) years following resumption of regular operations after the change if the project increases the design capacity of or the potential to emit that regulated NSR pollutant at the emissions unit.

C.21 General Reporting Requirements [326 IAC 2-7-5(3)(C)] [326 IAC 2-1.1-11][326 IAC 2-2] [326 IAC 2-3]

(a) Any deviation from permit requirements, the date(s) of each deviation, the cause of the deviation, and the response steps taken must be reported except that a deviation required to be reported pursuant to an applicable requirement that exists independent of this permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report. This report shall be submitted not later than thirty (30) days after the end of the reporting period. The Quarterly Deviation and Compliance Monitoring Report shall include a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34). A deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit.

(b) The address for report submittal is:

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

(c) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.

(d) The first report shall cover the period commencing on the date of issuance of this permit and ending on the last day of the reporting period. Reporting periods are based on calendar years, unless otherwise specified in this permit. For the purpose of this permit "calendar year" means the twelve (12) month period from January 1 to December 31 inclusive.

(e) If the Permittee is required to comply with the recordkeeping provisions of (d) in Section C - General Record Keeping Requirements for any "project" (as defined in 326 IAC 2-2-1 (qq) and/or 326 IAC 2-3-1 (ll)) at an existing emissions unit, and the project meets the following criteria, then the Permittee shall submit a report to IDEM, OAQ:

(1) The annual emissions, in tons per year, from the project identified in (c)(1) in Section C- General Record Keeping Requirements exceed the baseline actual emissions, as documented and maintained under Section C- General Record Keeping Requirements (c)(1)(C)(i), by a significant amount, as defined in 326 IAC 2-2-1 (xx) and/or 326 IAC 2-3-1 (qq), for that regulated NSR pollutant, and

(2) The emissions differ from the preconstruction projection as documented and maintained under Section C - General Record Keeping Requirements (c)(1)(C)(ii).

(f) The report for project at an existing emissions unit shall be submitted within sixty (60) days after the end of the year and contain the following:

(1) The name, address, and telephone number of the major stationary source.

(2) The annual emissions calculated in accordance with (d)(1) and (2) in Section C - General Record Keeping Requirements.

(3) The emissions calculated under the actual-to-projected actual test stated in 326 IAC 2-2-2(d)(3) and/or 326 IAC 2-3-2(c)(3).

(4) Any other information that the Permittee wishes to include in this report such as an explanation as to why the emissions differ from the preconstruction project.

Reports required in this part shall be submitted to:

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

Indianapolis, Indiana 46204-2251

(g) The Permittee shall make the information required to be documented and maintained in accordance with (c) in Section C- General Record Keeping Requirements available for review upon a request for inspection by IDEM, OAQ. The general public may request this information from the IDEM, OAQ under 326 IAC 17.1.

Stratospheric Ozone Protection

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

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

SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

MELTING OPERATION
Phase I

One (1) gray iron cupola, identified as P30, constructed in 1996, with a maximum melt rate of 100 tons per hour, using one (1) baghouse (C09A) for particulate control, one (1) incinerator (C11A) for carbon monoxide control and volatile organic compound emissions control, and one (1) lime injection system (C12A) using dry injection system for sulfur dioxide control, exhausting to stack S09;

Phase II

One (1) cupola iron melting system, identified as P33, constructed in 1998, with a maximum melt rate of 100 tons of iron per hour. VOC and CO emissions are controlled by one (1) recuperative incinerator, identified as C11B. Sulfur dioxide emissions are controlled by one (1) lime injection system (or equivalent), identified as C12B Particulate matter emissions are controlled by one (1) baghouse system, identified as C09B. The gases are then exhausted to stack S09.

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

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

D.1.1 PSD BACT for Particulate [326 IAC 2-2-3(a)(3)]

(a) Pursuant to CP-123-8451-00019, issued on February 4, 1998 and 326 IAC 2-2-3(a)(3) (Prevention of Significant Deterioration (PSD) Rules), the particulate matter emissions from the cupolas shall be limited to 0.078 pounds per ton of iron and 12.48 pounds per hour.

(b) Pursuant to CP-123-4593-00019, issued on January 19, 1996, visible emissions from the cupola stack S09 shall not exceed 10 % opacity.

(c) Pursuant to CP-123-4593-00019, issued on January 19, 1996, visible emissions from any building opening shall not exceed 3% opacity.

D.1.2 PSD BACT for Lead [326 IAC 2-2-3(a)(3)] [326 IAC 2-4.1-1]

Pursuant to CP-123-8451-00019, issued on February 4, 1998 and 326 IAC 2-2-3(a)(3), the lead (Pb) emissions from both cupolas combined shall be limited to 0.54 pounds per hour.

D.1.3 PSD BACT for Beryllium [326 IAC 2-2-3(a)(3)] [326 IAC 2-4.1-1]

Pursuant to CP-123-8451-00019, issued on February 4, 1998 and 326 IAC 2-2-3(a)(3), the beryllium (Be) emissions from both cupolas combined shall be limited to 0.0016 pounds per hour.

D.1.4 PSD BACT for Sulfur Dioxide [326 IAC 2-2-3(a)(3)]

(a) Pursuant to PSD/SSM 123-29490-00019 and 326 IAC 2-2-3(a)(3), the sulfur dioxide (SO_2) emissions from the cupolas shall be limited to 0.22 pounds per ton of metal melted based on a 30-day rolling average and 44.0 pounds per hour based on a 3-hour rolling average.

(b) Pursuant to PSD/SSM 123-29490-00019 and 326 IAC 2-2-3(a)(3), coke usage shall not exceed 240 tons per day for each cupola.

D.1.5 PSD BACT for Volatile Organic Compound [326 IAC 2-2-3(a)(3)] [326 IAC 8-1-6]

Pursuant to PSD/SSM 123-29490-00019, 326 IAC 2-2-3(a)(3) and 326 IAC 8-1-6 (General Reduction Requirements for New Facilities), the volatile organic compound (VOC) emissions from the cupolas shall be limited to 0.02 pounds per ton of iron and 4.0 pounds per hour.

D.1.6 PSD BACT for Carbon Monoxide [326 IAC 2-2-3(a)(3)] [326 IAC 9-1-2]

(a) Pursuant to PSD/SSM 123-29490-00019 and 326 IAC 2-2-3(a)(3), the carbon monoxide (CO) emissions from the cupolas shall be limited to 0.4 pounds per ton of iron and 80.0 pounds per hour.

(b) Pursuant to 326 IAC 9-1-2 (Carbon Monoxide Emission Limits), the carbon monoxide emissions from the cupolas shall be controlled by the recuperative incinerator/heat recovery systems, which shall maintain a minimum temperature of one thousand three hundred (1,300) degrees Fahrenheit for a minimum retention time of three-tenths (0.3) second.

D.1.7 PSD BACT for Nitrogen Oxide [326 IAC 2-2-3(a)(3)]

Pursuant to PSD/SSM 123-29490-00019 and 326 IAC 2-2-3(a)(3), the nitrogen oxide (NO_X) emissions from the cupolas shall be limited to 0.44 pounds per ton of iron and 88.0 pounds per hour.

D.1.8 Operating Requirements [326 IAC 2-2-3(a)(3)]

Pursuant to PSD/SSM 123-29490-00019, and 326 IAC 2-2-3(a)(3), each cupola shall be limited to a maximum melt rate of 100 tons per hour, based on a 24 hour average.

D.1.9 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan (PMP) is required for this unit and its control device. Section B - Preventive Maintenance Plan contains the Permittee's obligations with regard to the preventive maintenance plan required by this condition.

Compliance Determination Requirements

D.1.10 Testing Requirements [326 IAC 2-7-6(1),(6)] [326 IAC 2-1.1-11]

(a) Within one hundred and eighty (180) days, after the Phase 1 cupola (P30) achieves a melt rate greater than 80 tons per hour, in order to determine compliance with Conditions D.1.1, D.1.2, and D.1.3, the Permittee shall perform PM, opacity, lead and beryllium testing on both cupolas, identified as P30 and P33 utilizing methods as approved by the Commissioner. These tests shall be repeated at least once every two and half (2.5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C - Performance Testing contains the Permittee's obligations with regard to the performance testing required by this condition.

(b) Within one hundred and eighty (180) days, after the Phase 1 cupola (P30) achieves a melt rate greater than 80 tons per hour, in order to determine compliance with Conditions D.1.4, D.1.5, D.1.6 and D.1.7, the Permittee shall perform SO2, VOC, NOx, and CO, testing on both cupolas, identified as P30 and P33 utilizing methods as approved by the Commissioner. These tests shall be repeated at least once every two and half (2.5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C - Performance Testing contains the Permittee's obligations with regard to the performance testing required by this condition.

D.1.11 Particulate Matter (PM/PM-10) Controls [326 IAC 2-7-6(6)]

(a) Pursuant to CP123-8451-00019 issued February 4, 1998, the PM emissions from the cupola for Phase I shall be controlled by baghouse C09A (Stack S09).

(b) Pursuant to CP123-8451-00019 issued February 4, 1998, the PM emissions from the cupola for Phase II shall be controlled by baghouse C09B (Stack S09).

(c) In the event that bag failure is observed in a multi-compartment baghouse, if operations will continue for ten (10) days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

D.1.12 Sulfur Dioxide Control

Pursuant to CP123-8451-00019 issued February 4, 1998, the SO_2 emissions from the Phase I and II cupolas (P30 and P33) shall be controlled by dry scrubbing systems using a dry lime or other equivalent alkaline reagent located prior to the baghouse.

D.1.13 VOC, CO, and NOx Control [326 IAC 2-2-3]

(a) Pursuant to CP123-8451-00019 issued February 4, 1998, the waste gas stream of the Phase I and Phase II cupolas (P30 and P33) shall be equipped with recuperative incinerator/heat recovery systems with low NOx burners prior to the dry scrubber/baghouse system.

(b) Pursuant to CP123-8451-00019 issued February 4, 1998, the recuperative incinerator shall only use natural gas fuel as the auxiliary fuel. Propane may be used as a backup fuel.

D.1.14 Continuous Emissions Monitoring and Continuous Opacity Monitoring [326 IAC 2-7-6(6)]

(a) The baghouses C09A and C09B controlling particulate matter emissions from the phase 1 and 2 cupolas P30 and P33, shall be equipped with a bag leak detection system. These systems shall be operated pursuant to site-specific monitoring plan and corrective action plan required under 40 CFR 63.7710(b)(4) and (5).

(b) Pursuant to CP123-8451 issued February 4, 1998, compliance with the SO_2 limits for the Phase I and Phase II cupolas in Condition D.1.4 shall be demonstrated by installing and operating a SO_2 continuous emissions monitoring system (CEMS) for the Phase 1 and Phase 2 cupolas exhausting to stack S09. The SO_2 CEMS shall be certified according to procedures contained in 326 IAC 3 and 40 CFR 75 as applicable. The continuous monitoring system shall be equipped with a flow monitor to provide data in pounds of SO_2 per hour. The SO_2 emissions on a per ton of iron basis shall be calculated by using the emissions rate information divided by the cupola production data, and shall be based on a 30 day rolling average.

D.1.15 Recuperative Incinerator Temperature

A continuous monitoring system shall be calibrated, maintained, and operated on each of the cupolas for measuring temperature of the cupola gas stream. For the purposes of this condition, continuous shall mean no less often than once per 15 minute. The Permittee shall maintain the hourly average temperature of the cupola gas stream at 1400 ^{0}F or at a temperature determined from the latest stack testing. This minimum temperature requirements applies at all times during operation of either of the cupolas, except for the following:

(a) periods when the cupola blast air is turned off;
(b) periods when the blast air has been turned on for less than 30 consecutive minutes; and

(c) during the last 30 minutes of operation of the cupola.

The Permittee shall monitor the times that the cupola blast air is turned on and off for each cupola.

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

D.1.16 Dry Alkaline Injection Parametric Monitoring

Whenever the SO_2 continuous emissions monitoring system (CEMS) is malfunctioning or down for repairs or adjustments, the following shall be used to provide information related to SO2 emissions:

(a) If the CEMS is down for less than twenty-four (24) hours, the Permittee shall substitute an average of the quality-assured data from the hour immediately before and the hour immediately after the missing data period for each hour of missing data.

(b) If the CEMS is down for twenty-four (24) hours or more, the Permittee shall record the alkaline dust injection rate of each dry alkaline injection system at least once per hour until the SO_2 CEMS is back online. When for any one reading the alkaline dust injection rate is below the minimum alkaline dust injection rate determined from the most recent compliant stack test, the Permittee shall take reasonable response steps in accordance with Section C- Response to Excursions or Exceedances. An alkaline dust injection rate reading that is below the above mentioned minimum is not a deviation from this permit. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances, shall be considered a deviation from this permit.

D.1.17 Recuperative Incinerator Failure Detection

(a) Charging of the cupola shall cease immediately until the failed units have been repaired or replaced.

(b) For a recuperative incinerator controlling emissions from a batch process, the feed to the process shall be shut down immediately until the failed unit has been repaired or replaced. The emissions unit shall be shut down no later than the completion of the processing of the material in the line. 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 Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.1.18 Record Keeping Requirement

(a) To document compliance with Conditions D.1.4, the Permittee shall maintain records of the coke input to each cupola for each day. Records shall be taken daily and shall be complete and sufficient to establish compliance with the coke input limit established in Condition D.1.4(b).

(b) To document compliance with Conditions D.1.15 and D.1.16, the Permittee shall maintain records of the following:

(1) records of the injection rate of each alkali injection system once per hour as required by Condition D.1.16; and

(2) records of the temperature readings for each recuperative incinerator (reduced to hourly averages) and all times when the blast air is turned on and off, in order to demonstrate compliance with Condition D.1.15.

(c) In order to document compliance with D.1.8, records shall be kept of the total iron throughput to each cupola each day of operation, and of the total hours of operation of each cupola each day of operation.

(d) Section C - General Record Keeping Requirements, contains the Permittee's obligation with regard to the records required by this condition.

D.1.19 Reporting Requirements

The Permittee shall submit a quarterly excess emissions report, if applicable, based on the continuous emissions monitor system (CEMS) data for SO_2, pursuant to 326 IAC 3-5-7. These reports shall be submitted within thirty (30) calendar days following the end of each calendar quarter and in accordance with Section C - General Reporting Requirements of this permit.

SECTION D.2 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

Facilities exhausting to stacks S01, S04, or S07

Phase I

(b) Four (4) production lines, each constructed in 1996, consisting of the following:

(1) Line 1
- (a) One (1) pouring/mold cooling operation, identified as P01, with a maximum throughput of 38 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stacks S01 and S04;
- (b) One (1) shakeout operation, identified as P02, with a maximum throughput of 38 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;
- (c) One (1) cast cooling operation, identified as P03, with a maximum throughput of 27 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stacks S01 and S04;
- (d) One (1) pick & sort operation, identified as P04, with a maximum throughput of 38 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01; and
- (e) One (1) cleaning & grinding operation, identified as P05, with a maximum throughput of 27 tons per hour, using a mechanical blaster, using one (1) baghouse (C07) for particulate control, exhausting to stack S07.

(2) Line 2
- (a) One (1) pouring/mold cooling operation, identified as P06, with a maximum throughput of 17 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;
- (b) One (1) shakeout operation, identified as P07, with a maximum throughput of 17 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;
- (c) One (1) cast cooling operation, identified as P08, with a maximum throughput of 17 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;
- (d) One (1) pick & sort operation, identified as P09, with a maximum throughput of 17 tons per hour, using one (1) baghouse (C07) for particulate control, exhausting to stack S07; and
- (e) One (1) cleaning & grinding operation, identified as P10, with a maximum throughput of 17 tons per hour, using a mechanical blaster, using one (1) baghouse (C07) for particulate control, exhausting to stack S07.

(3) Line 3
- (a) One (1) pouring/mold cooling operation, identified as P11, with a maximum throughput of 17 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;
- (b) One (1) shakeout operation, identified as P12, with a maximum throughput of 17 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;
- (c) One (1) cast cooling operation, identified as P13, with a maximum throughput of 17 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;
- (d) One (1) pick & sort operation, identified as P14, with a maximum throughput of 17 tons per hour, using one (1) baghouse (C07) for particulate control, exhausting to stack

S07; and

(e) One (1) cleaning & grinding operation, identified as P15, with a maximum throughput of 17 tons per hour, using a mechanical blaster, using one (1) baghouse (C07) for particulate control, exhausting to stack S07.

(4) Line 4 (approved for modification in 2014)

(a) One (1) pouring/mold cooling operation, identified as P16, with a maximum throughput of 40 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;

(b) One (1) shakeout operation, identified as P17, with a maximum throughput of 40 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;

(c) One (1) cast cooling operation, identified as P18, with a maximum throughput of 40 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;

(d) One (1) pick & sort operation, identified as P19, with a maximum throughput of 40 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01; and

(e) One (1) cleaning & grinding operation, identified as P20, with a maximum throughput of 40 tons per hour, using a mechanical blaster, using one (1) baghouse (C07) for particulate control, exhausting to stack S07.

(c) Sand handling operations and ancillary operations

(1) One (1) return sand handling & screen operation, identified as P21, with a maximum throughput of 522 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;

(2) One (1) sand cooling & water addition operation, identified as P22, with a maximum throughput of 522 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;

(3) One (1) sand mulling & handling operation, identified as P23, with a maximum throughput of 522 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;

(4) One (1) spent sand handling & processing operation, identified as P24, with a maximum throughput of 54 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;

(5) Air make-up units, identified as P52, with a maximum combined heat input capacity of 65.6 million British thermal units (MMBtu) per hour, combusting natural gas, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;

(6) One (1) metallic returns handling operation, identified as P25, with a maximum throughput of 33 tons per hour, using one(1) baghouse (C07) for particulate control, exhausting to stack S07;

(14) One (1) Line 1 ladle cleaning operation, identified as P86A, approved for modification in 2013, with a maximum capacity of 100 pounds of burn bars per hour based on a 24-hour average, using Baghouses C01, C02, and C03 as control, and exhausting to stack S01;

(17) One (1) Line 4 ladle cleaning operation, identified as P86B, approved for modification in 2013, with a maximum capacity of 100 pounds of burn bars per hour based on a 24-hour average, using Baghouses C01, C02, and C03 as control, and exhausting to stack S01;

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

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

D.2.1 PSD BACT for Particulate Matter [326 IAC 2-2-3(a)(3)]

(a) Pursuant to CP-123-4593-00019, issued on January 19, 1996, CP-123-8451-00019, issued on February 4, 1998, Amendment 123-9740-00019, issued May 22, 1998, and 326 IAC 2-2-3(a)(3) (Prevention of Significant Deterioration (PSD) Rules), the particulate matter emissions from the following processes shall be limited as shown in the table below:

Stack ID	Process	Process ID	Emission Limitation for Individual Processes (lb/hr)	Particulate Emission Limitation for stack (gr/dscf)	Particulate Emission Limitation for stack (lb/hr)
S01	Line 1 Pouring/Mold Cooling	P01	-	0.005	32.01
	Line 1 Shakeout	P02	-		
	Line 1 Cast Cooling	P03	-		
	Line 1 Pick and Sort	P04	-		
	Line 2 Pouring/Mold Cooling	P06	1.50		
	Line 2 Shakeout	P07	1.71		
	Line 2 Cast Cooling	P08	1.93		
	Line 3 Pouring/Mold Cooling	P11	1.50		
	Line 3 Shakeout	P12	1.71		
	Line 3 Cast Cooling	P13	0.43		
	Line 4 Pouring/Mold Cooling *	P16	2.44		
	Line 4 Shakeout *	P17	1.71		
	Line 4 Cast Cooling *	P18	0.43		
	Line 4 Pick and Sort *	P19	1.71		
	Return Sand Handling/ Screening	P21	-		
	Sand Cooling/Water Addition	P22	-		
	Sand Mulling/Handling	P23	-		
	Spent Sand Handling/Processing	P24	2.74		
	Air makeup units	P52	-	0.90 lb/hr and 3.94 tons/yr	
S04	Line 1 Pouring/Mold Cooling	P01	-	0.005	1.72
	Line 1 Cast Cooling	P03			
S07	Line 1 Cleaning/Grinding	P05		0.005	7.8
	Line 2 Pick and Sort	P09	1.71		
	Line 2 Cleaning/Grinding	P10	0.69		
	Line 3 Pick and Sort	P14	2.10		
	Line 3 Cleaning/Grinding	P15	0.69		
	Metallic Returns Handling	P25	1.29		
	Line 4 Cleaning/Grinding	P20	0.69		

* In accordance with the actual to projected actual (ATPA) analysis made in PSD/SSM 123-33464-00019, there are no significant emissions increase for PM due to the 2014 modification (to increase the capacity of Line 4 from 27 tons/hour to 40 tons/hour).

(b) Pursuant to CP123-4593-00019 issued on January 19, 1996 and 326 IAC 2-2, visible emissions from any baghouse stack shall not exceed ten percent (10%) opacity.

(c) Pursuant to PSD/SSM No. 123-33284-00019, issued on October 15, 2013 and 326 IAC 2-2 (Prevention of Significant Deterioration):

(1) The Line 1 ladle cleaning operation, identified as P86A, and the Line 4 ladle cleaning operation, identified as P86B, shall operate only when other production facilities exhausting to stack S01 are not in operation.

(2) The PM, PM10, and PM2.5 emissions exhausting to Stack S01 from the Line 1 ladle cleaning operation, identified as P86A, shall be controlled by a baghouse(s).

(3) The PM, PM10, and PM2.5 emissions exhausting to Stack S01 from the Line 4 ladle cleaning operation, identified as P86B, shall be controlled by a baghouse(s).

(4) The particulate emissions from the following processes shall not exceed the following limitations as shown in the table below:

Stack ID	Process	Process ID	Emission Limitation for Individual Processes (lb/hr)			Particulate Emission Limitation for Stack (gr/dscf)	Opacity Limitation for Stack
			PM	PM10	PM2.5		
S01	Line 1 ladle cleaning operation	P86A	0.64	0.64	0.64	0.005	10%
	Line 4 ladle cleaning operation	P86B	0.64	0.64	0.64		

D.2.2 PSD BACT for Lead [326 IAC 2-2-3(a)(3)]

Pursuant to CP-123-4593-00019, issued on January 19, 1996, CP-123-8451-00019, issued on February 4, 1998, Amendment 123-9740-00019, issued May 22, 1998, and 326 IAC 2-2-3(a)(3) (Prevention of Significant Deterioration (PSD) Rules) and revised by PSD/SSM 123-25303-00019, issued on December 19, 2007, the lead (Pb) emissions from the following processes shall be limited as shown in the table below:

Stack ID	Process	Process ID	Lead Emission Limit (lb/hr)
S01	Line 1 Pouring/Mold Cooling	P01	0.032
	Line 1 Shakeout	P02	
	Line 1 Cast Cooling	P03	
	Line 1 Pick and Sort	P04	
	Line 2 Pouring/Mold Cooling	P06	
	Line 2 Shakeout	P07	
	Line 2 Cast Cooling	P08	
	Line 3 Pouring/Mold Cooling	P11	
	Line 3 Shakeout	P12	
	Line 3 Cast Cooling	P13	
	Line 4 Pouring/Mold Cooling	P16	
	Line 4 Shakeout	P17	
	Line 4 Cast Cooling	P18	

Stack ID	Process	Process ID	Lead Emission Limit (lb/hr)
	Line 4 Pick and Sort	P19	
	Return Sand Handling/ Screening	P21	
	Sand Cooling/Water Addition	P22	
	Sand Mulling/Handling	P23	
	Spent Sand Handling/Processing	P24	
	Air makeup units	P52	
S04	Line 1 Pouring/Mold Cooling	P01	0.002
	Line 1 Cast Cooling	P03	
S07	Line 1 Cleaning/Grinding	P05	0.008
	Line 2 Pick and Sort	P09	
	Line 2 Cleaning/Grinding	P10	
	Line 3 Pick and Sort	P14	
	Line 3 Cleaning/Grinding	P15	
	Metallic Returns Handling	P25	
	Line 4 Cleaning/Grinding	P20	

* In accordance with the actual to projected actual (ATPA) analysis made in PSD/SSM 123-33464-00019, there are no significant emissions increase for Lead due to the 2014 modification (to increase the capacity of Line 4 from 27 tons/hour to 40 tons/hour).

D.2.3 PSD BACT for Beryllium [326 IAC 2-2-3(a)(3)]

Pursuant to CP-123-4593-00019, issued on January 19, 1996, CP-123-8451-00019, issued on February 4, 1998, Amendment 123-9740-00019, issued May 22, 1998, and 326 IAC 2-2-3(a)(3) (Prevention of Significant Deterioration (PSD) Rules) and revised by PSD/SSM 123-25303-00019, issued on December 19, 2007, the beryllium (Be) emissions from the following processes shall be limited as shown in the table below:

Stack ID	Process	Process ID	Beryllium Emission Limit (lb/hr)
S01	Line 1 Pouring/Mold Cooling	P01	0.0006
	Line 1 Shakeout	P02	
	Line 1 Cast Cooling	P03	
	Line 1 Pick and Sort	P04	
	Line 2 Pouring/Mold Cooling	P06	
	Line 2 Shakeout	P07	
	Line 2 Cast Cooling	P08	
	Line 3 Pouring/Mold Cooling	P11	
	Line 3 Shakeout	P12	
	Line 3 Cast Cooling	P13	
	Line 4 Pouring/Mold Cooling *****	P16	
	Line 4 Shakeout *****	P17	
	Line 4 Cast Cooling *****	P18	
	Line 4 Pick and Sort *****	P19	
	Return Sand Handling/ Screening	P21	
	Sand Cooling/Water Addition	P22	
	Sand Mulling/Handling	P23	
	Spent Sand Handling/Processing	P24	
S04	Line 1 Pouring/Mold Cooling	P01	0.00003

Stack ID	Process	Process ID	Beryllium Emission Limit (lb/hr)
	Line 1 Cast Cooling	P03	
S07	Line 1 Cleaning/Grinding	P05	0.00016
	Line 2 Pick and Sort	P09	
	Line 2 Cleaning/Grinding	P10	
	Line 3 Pick and Sort	P14	
	Line 3 Cleaning/Grinding	P15	
	Metallic Returns Handling	P25	
	Line 4 Cleaning/Grinding *	P20	

* In accordance with the actual to projected actual (ATPA) analysis made in PSD/SSM 123-33464-00019, there are no significant emissions increase for Beryllium (Be due to the 2014 modification (to increase the capacity of Line 4 from 27 tons/hour to 40 tons/hour).

D.2.4 PSD BACT for Volatile Organic Compound [326 IAC 2-2-3(a)(3)]

Pursuant to PSD/SSM 123-29490-00019, issued on May 10, 2011, PSD/SSM 123-33464-00019, and 326 IAC 2-2-3 (Prevention of Significant Deterioration (PSD)), the following requirement and limits are determined as Best Available Control Technology (BACT) for volatile organic compounds.

(a) The VOC emissions from the pouring/mold cooling and shakeout operation shall be controlled by mold vent off-gas ignition.

(b) The VOC emissions from the following processes shall not exceed the limits as shown in the table below:

Stack ID	Process	Process ID	VOC Emission Limits for Individual Processes (lb/ton)	VOC Emission Limits for Individual Processes (lb/hr)	VOC Emission Limits for Stacks (lb/hr)
S01	Line 1 Pouring/Mold Cooling	P01	1.4	33.6	157.2 (combined for S01 and S04)
	Line 1 Shakeout	P02			
	Line 1 Cast Cooling	P03	-	-	
	Line 1 Pick and Sort	P04	-	-	
	Line 2 Pouring/Mold Cooling	P06	1.4	23.8	
	Line 2 Shakeout	P07			
	Line 2 Cast Cooling	P08	-	-	
	Line 3 Pouring/Mold Cooling	P11	1.4	23.8	
	Line 3 Shakeout	P12			
	Line 3 Cast Cooling	P13	-	-	
	Line 4 Pouring/Mold Cooling	P16	1.4	56	
	Line 4 Shakeout	P17			
	Line 4 Cast Cooling	P18	-	-	
	Line 4 Pick and Sort	P19	-	-	
	Return Sand Handling/ Screening	P21	-	-	
	Sand Cooling/Water Addition	P22	-	-	
	Sand Mulling/Handling	P23	-	-	
	Spent Sand Handling/Processing	P24	-	-	
	Air makeup units	P52	-	0.4	
S04	Line 1 Pouring/Mold Cooling	P01	1.4	19.6	
	Line 1 Cast Cooling	P03	-	-	

D.2.5 PSD BACT for Carbon Monoxide [326 IAC 2-2-3(a)(3)]

(a) Pursuant to PSD/SSM 123-29490-00019, issued on May 10, 2011, PSD/SSM 123-33464-00019, and 326 IAC 2-2-3(a)(3), the carbon monoxide (CO) emissions from the following processes shall be limited as shown in the table below:

Stack ID	Process	Process ID	CO Emission Limits for Individual Processes (lb/ton)	CO Emission Limits for Individual Processes (lb/hr)	CO Emission Limits for Stacks (lb/hr)
S01	Line 1 Pouring/Mold Cooling	P01	5.0	106	606.2
	Line 1 Shakeout	P02	1.0	38	
	Line 1 Cast Cooling	P03	-	-	
	Line 1 Pick and Sort	P04	-	-	
	Line 2 Pouring/Mold Cooling	P06	5.0	85	
	Line 2 Shakeout	P07	1.0	17	
	Line 2 Cast Cooling	P08	-	-	
	Line 3 Pouring/Mold Cooling	P11	5.0	85	
	Line 3 Shakeout	P12	1.0	17	
	Line 3 Cast Cooling	P13	-	-	
	Line 4 Pouring/Mold Cooling	P16	5.0	200	
	Line 4 Shakeout	P17	1.0	40	
	Line 4 Cast Cooling	P18	-	-	
	Line 4 Pick and Sort	P19	-	-	
	Return Sand Handling/ Screening	P21	-	-	
	Sand Cooling/Water Addition	P22	-	-	
	Sand Mulling/Handling	P23	-	-	
	Spent Sand Handling/Processing	P24	-	-	
	Air makeup units	P52	-	18.2	
S04	Line 1 Pouring/Mold Cooling	P01	5.0	84	84.0
	Line 1 Cast Cooling	P03	-	-	

(b) Pursuant to PSD/SSM 123-33464-00019, and 326 IAC 2-2-3(a)(3), the CO emissions from the pouring/mold cooling and shakeout of Line 4 shall be controlled by a mold vent off gas ignition.

D.2.6 PSD BACT for Sulfur Dioxide [326 IAC 2-2-3(a)(3)]

Pursuant to PSD/SSM 123-29490-00019, issued on May 10, 2011, PSD/SSM 123-33464-00019, and 326 IAC 2-2-3(a)(3), the sulfur dioxide (SO2) emissions from the following processes shall be limited as shown in the table below:

Stack ID	Process	Process ID	SO_2 Emission Limits (lb/ton)	SO_2 Emission Limits for Individual Processes (lb/hr)	SO_2 Emission Limits for Stacks (lb/hr)
	Line 1 Pouring/Mold Cooling	P01	0.02	0.46	
	Line 1 Shakeout	P02	-	-	
	Line 1 Cast Cooling	P03	-	-	
	Line 1 Pick and Sort	P04	-	-	
	Line 2 Pouring/Mold Cooling	P06	0.02	0.34	

Stack ID	Process	Process ID	SO_2 Emission Limits (lb/ton)	SO_2 Emission Limits for Individual Processes (lb/hr)	SO_2 Emission Limits for Stacks (lb/hr)
S01	Line 2 Shakeout	P07	-	-	1.98
	Line 2 Cast Cooling	P08	-	-	
	Line 3 Pouring/Mold Cooling	P11	0.02	0.34	
	Line 3 Shakeout	P12	-	-	
	Line 3 Cast Cooling	P13	-	-	
	Line 4 Pouring/Mold Cooling	P16	0.02	0.8	
	Line 4 Shakeout	P17	-	-	
	Line 4 Cast Cooling	P18	-	-	
	Line 4 Pick and Sort	P19	-	-	
	Return Sand Handling/ Screening	P21	-	-	
	Sand Cooling/Water Addition	P22	-	-	
	Sand Mulling/Handling	P23	-	-	
	Spent Sand Handling/Processing	P24	-	-	
	Air Makeup Units	P52	-	0.04	
S04	Line 1 Pouring/Mold Cooling	P01	0.02	0.3	0.3
	Line 1 Cast Cooling	P03	-	-	

D.2.7 PSD BACT for Nitrogen Oxide [326 IAC 2-2-3(a)(3)]

Pursuant to PSD/SSM 123-29490-00019, issued on May 10, 2011, PSD/SSM 123-33464-00019, and 326 IAC 2-2-3(a)(3), the (NOX) emissions from the following processes shall be limited as shown in the table below:

Stack ID	Process	Process ID	NOx Emission Limits (lb/ton)	NOx Emission Limits for Individual Processes (lb/hr)	NOx Emission Limits for Stacks (lb/hr)
S01	Line 1 Pouring/Mold Cooling	P01	0.01	0.24	3.96
	Line 1 Shakeout	P02	-	-	
	Line 1 Cast Cooling	P03	-	-	
	Line 1 Pick and Sort	P04	-	-	
	Line 2 Pouring/Mold Cooling	P06	0.01	0.17	
	Line 2 Shakeout	P07	-	-	
	Line 2 Cast Cooling	P08	-	-	
	Line 3 Pouring/Mold Cooling	P11	0.01	0.17	
	Line 3 Shakeout	P12	-	-	
	Line 3 Cast Cooling	P13	-	-	
	Line 4 Pouring/Mold Cooling	P16	0.01	0.4	
	Line 4 Shakeout	P17	-	-	
	Line 4 Cast Cooling	P18	-	-	
	Line 4 Pick and Sort	P19	-	-	
	Return Sand Handling/ Screening	P21	-	-	
	Sand Cooling/Water Addition	P22	-	-	
	Sand Mulling/Handling	P23	-	-	
	Spent Sand Handling/Processing	P24	-	-	
	Air Makeup Units	P52	0.01	2.98	
S04	Line 1 Pouring/Mold Cooling	P01	0.01	0.1	0.1
	Line 1 Cast Cooling	P03	-	-	

D.2.8 Operating Conditions [326 IAC 2-2-3)]

Pursuant to PSD/SSM 123-29490-00019, issued on May 10, 2011, and 326 IAC 2-2-3(a)(3), the following limitations shall apply:

(a) the return sand handling/screening process, identified as P21, shall be limited to a maximum throughput capacity of 522 tons of sand per hour;

(b) the sand cooling/water addition process, identified as P22, shall be limited to a maximum throughput capacity of 522 tons of sand per hour;

(c) the sand mulling/handling process, identified as P23, shall be limited to a maximum throughput capacity of 522 tons of sand per hour; and

D.2.9 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan (PMP) is required for this unit and its control device. Section B - Preventive Maintenance Plan contains the Permittee's obligations with regard to the preventive maintenance plan required by this condition.

Compliance Determination Requirements

D.2.10 Testing Requirements [326 IAC 2-7-6(1),(6)] [326 IAC 2-1.1-11]

(a) Within one hundred and eighty (180) days, after the Phase 1 cupola (P30) achieves a melt rate greater than 80 tons per hour, the Permittee shall perform PM, opacity, lead and beryllium testing on the facilities exhausting to stacks S01, S04 and S07 using methods as approved by the Commissioner, in order to demonstrate compliance with the total stack limits listed in Conditions D.2.1, D.2.2, and D.2.3. These tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C - Performance Testing contains the Permittee's obligations with regard to the performance testing required by this condition. All facilities exhausting to the same stack shall be in operation during the stack test in order for the test to be considered a valid test.

For the stack S01 PM testing, PM includes filterable and condensable PM.

(b) Within one hundred and eighty (180) days, after the Phase 1 cupola (P30) achieves a melt rate greater than 80 tons per hour, the Permittee shall perform VOC, CO, SO2 and NOx testing on the emission units exhausting to stacks S01 and S04 simultaneously using Method 25, 25A, or other methods approved by the Commissioner, in order to demonstrate compliance with the total stack limit listed in Conditions D.2.4, D.2.5, D.2.6 and D.2.7. These tests shall be repeated at least once every five (5) years from the date of the last valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C - Performance Testing contains the Permittee's obligations with regard to the performance testing required by this condition. All facilities exhausting to the same stack shall be in operation during the stack test in order for the test to be considered a valid test. If the VOC emissions normally exhausted to SO4 are directed to S01 during the stack test, then only S01 is required to be tested.

(c) In order to show compliance with the stack S01 and stack S07 pounds per hour limits specified in Conditions D.2.1(a), D.2.2, D.2.3, the Permittee shall perform PM, lead and beryllium testing, respectively, for stack S01 and stack S07, no later than 180 days after the initial start up of the modification of Line 4. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C - Performance Testing contains the Permittee's obligations with regard to the performance testing required by this condition. These tests shall be repeated at least once every five (5) years from the date of the last valid compliance demonstration. All facilities exhausting to the same stack shall be in operation during the stack test in order for the test to be considered a valid test.

For the stack S01 PM testing, PM includes filterable and condensable PM.

For the stack S07 PM testing, PM includes filterable PM only.

(d) In order to show compliance with the Individual Process pounds per hour limits specified for Line 4 in Conditions D.2.4, D.2.5, D.2.6, and D.2.7, the Permittee shall perform VOC, CO, SO2 and NOx testing, respectively, for Line 4, no later than 180 days after the initial start up of the modification of Line 4. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C - Performance Testing contains the Permittee's obligations with regard to the performance testing required by this condition. These tests shall be repeated at least once every five (5) years from the date of the last valid compliance demonstration.

D.2.11 Particulate Matter (PM/PM-10) Control [326 IAC 2-7-6(6)]

(a) Pursuant to CP123-8451-00019 issued on February 4, 1998, the PM emissions for Lines 1-4 shall be controlled by four (4) baghouses C01, C02, C03 (Stack S01) and C07 (Stack S07) at all times when these processes are in operation.

(b) In the event that bag failure is observed in a multi-compartment baghouse, if operations will continue for ten (10) days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

(c) Pursuant to the Agreed Order for Case # 2005-14739-A, dated June 28, 2007, Baghouse C07 shall be equipped with duo-density bags having a minimum 18-ounce per square yard density. An alternative bag material may be used if approved by IDEM.

(d) In order to comply with Condition D.2.1(c), the baghouse(s) for PM, PM10, and PM2. 5 control shall be in operation at all times when the Line 1 ladle cleaning operation, identified as P86A, is in operation.

(e) In order to comply with Condition D.2.1(c), the baghouse(s) for PM, PM10, and PM2. 5 control shall be in operation at all times when the Line 4 ladle cleaning operation, identified as P86B, is in operation.

D.2.12 Mold Vent Ignition

In order to comply with Conditions D.2.4 and D.2.5, the Permittee shall comply with the following mold vent off gas ignition requirements for Line 4:

(a) The Permittee shall operate the mold vent off gas ignition system for Line 4 according to the mold vent ignition operation and maintenance plan approved by IDEM, OAQ.

(b) The Permittee shall prepare and submit the mold vent ignition operation and maintenance plan to the IDEM, OAQ for approval.

The operation and maintenance plan must include procedures for igniting gases from mold vents in pouring areas and pouring stations that use a sand mold system. The plan must contain the elements below:

Procedures for providing an ignition source to mold vents of sand mold systems in each pouring area and pouring station unless the Permittee determine the mold vent gases either are not ignitable, ignite automatically, or cannot be ignited due to accessibility or safety issues. The Permittee shall document and maintain records of this determination. The determination of ignitability, accessibility, and safety may encompass multiple casting patterns provided the castings utilize similar sand-to-metal ratios, binder formulations, and coating materials. The determination of ignitability must be based on observations of the mold vents within 5 minutes of pouring, and the flame must be present for at least 15 seconds for the mold vent to be considered ignited. For the purpose of this determination:

(i) Mold vents that ignite more than 75 percent of the time without the presence of an auxiliary ignition source are considered to ignite automatically; and

(ii) Mold vents that do not ignite automatically and cannot be ignited in the presence of an auxiliary ignition source more than 25 percent of the time are considered to be not ignitable.

(c) The Permittee shall maintain a current copy of the mold vent ignition operation and maintenance plan onsite approved by IDEM, OAQ and make available for inspection upon request.

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

D.2.13 Visible Emission Notations [40 CFR 64]

(a) Visible emission notations of each baghouse stack exhaust shall be performed once per day 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) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C- Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

The above monitoring conditions satisfy the Compliance Assurance Monitoring (CAM) for Baghouses C01-C03 and Baghouse C07 equipped on Line 4 for PM, PM10 and PM2.5.

D.2.14 Baghouse Parametric Monitoring [40 CFR 64]

Pursuant to the Agreed Order for Case # 2005-14739-A, dated June 28, 2007, instead of the pressure drop monitoring, Baghouse C07 shall be equipped with a bag leak detection system. This system shall be operated pursuant to the site-specific monitoring plan and correction action plan required under 40 CFR 63.7710(b)(4) and (5).

The above monitoring conditions satisfy the Compliance Assurance Monitoring (CAM) for Baghouses C01-C03 and Baghouse C07 equipped on Line 4 for PM, PM10 and PM2.5.

D.2.15 Broken or Failed Bag Detection

(a) For a single compartment baghouse controlling emissions from a process operated continuously, a failed unit and the associated process shall be shut down immediately until the failed unit 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).

(b) For a single compartment baghouse controlling emissions from a batch process, the feed to the process shall be shut down immediately until the failed unit has been repaired or replaced. The emissions unit shall be shut down no later than the completion of the processing of the material in the line. 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).

Bag failure can be indicated by a significant drop in the baghouse's pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks, dust traces or triboflows.

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

D.2.16 Record Keeping Requirements

(a) To document compliance with Condition D.2.13 the Permittee shall maintain records of visible emission notations of each baghouse stack exhaust once per day. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g. the process did not operate that day).

(b) To document compliance with Condition D.2.14, the Permittee shall keep a log of the calibration test results for baghouse CO7 leak detector.

(c) To document compliance with the schedule outlined in Condition D.2.4, the Permittee shall submit an annual emission reduction report to IDEM summarizing activities undertaken to evaluate and reduce VOC emissions from these lines.

(d) Section C - General Record Keeping Requirements, contains the Permittee's obligation with regard to the records required by this condition.

SECTION D.3 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:
Facilities Exhausting to Stacks S15 and S16
Phase II

(1) Line 5
- (A) One (1) pouring/mold cooling operation, identified as P60, with a maximum production capacity of 28 tons per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C15. The gases are then exhausted to Stack S15;
- (B) One (1) shakeout operation, identified as P61, with a maximum throughout capacity of 28 tons per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C15, that exhaust to Stack S15 or by one (1) baghouse system, identified as C16,that exhaust to Stack S16;
- (C) One (1) cast cooling operation, identified as P62, with a maximum capacity of 28 tons per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C15. The gases are then exhausted to Stack S15.
- (D) One (1) pick and sort operation, identified as P63, with a maximum throughput capacity of 28 tons per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C16. The gases are then exhausted to Stack S16;
- (E) One (1) cleaning and grinding operation, identified as P64, with a maximum throughput capacity of 28 tons per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C16. The gases are then exhausted to Stack S16;

(2) Line 6
- (A) One (1) pouring/mold cooling operation, identified as P65, with a maximum production capacity of 20 tons per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C15. The gases are then exhausted to Stack S15;
- (B) One (1) shakeout operation, identified as P66, with a maximum throughput capacity of 20 tons per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C15, that exhaust to Stack S15 or by one (1) baghouse system, identified as C16, that exhaust to Stack S16;
- (C) One (1) cast cooling operation, identified as P67, with a maximum capacity of 20 tons per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C15, that exhaust to Stack S15 or by one (1) baghouse system, identified as C16, that exhaust to Stack S16;
- (D) One (1) pick and sort operation, identified as P68, with a maximum throughput capacity of 20 tons per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C16. The gases are then exhausted to Stack S16;
- (E) One (1) cleaning and grinding operation, identified as P69, with a maximum throughput capacity of 20 tons per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C16. The gases are then exhausted to Stack S16;

(3) Line 7
- (A) One (1) pouring/mold cooling operation, identified as P70, with a maximum production capacity of 33 tons per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C15. The gases are then exhausted to Stack S15;
- (B) One (1) shakeout operation, identified as P71, with a maximum production capacity of 34 tons per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C15, that exhaust to Stack S15 or by one (1) baghouse system, identified as C16, that exhaust to Stack S16;
- (C) One (1) cast cooling operation, identified as P72, with a maximum production capacity of 33 tons per hour. Particulate matter emissions are controlled by one (1) baghouse

system, identified as C15, that exhaust to Stack S15 or by one (1) baghouse system, identified as C16, that exhaust to Stack S16;

(D) One (1) pick and sort operation, identified as P73, with a maximum throughput capacity of 33 tons per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C16. The gases are then exhausted to Stack S16;

(E) One (1) cleaning and grinding operation, identified as P74, with a maximum throughput capacity of 33 tons per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C16. The gases are then exhausted to Stack S16;

(4) Line 8

(A) One (1) pouring/mold cooling operation, identified as P75, with a maximum production capacity of 20 tons per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C15. The gases are then exhausted to Stack S15;

(B) One (1) shakeout operation, identified as P76, with a maximum throughput capacity of 20 tons per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C16. The gases are then exhausted to Stack S16;

(C) One (1) cast cooling operation, identified as P77, with a maximum capacity of 20 tons per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C16. The gases are then exhausted to Stack S16;

(D) One (1) pick and sort operation, identified as P78, with a maximum throughput capacity of 20 tons per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C16. The gases are then exhausted to Stack S16; and

(E) One (1) cleaning and grinding operation, identified as P79, with a maximum throughput capacity of 20 tons per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C16. The gases are then exhausted to Stack S16.

Phase II

Sand Handling Operations and Ancillary Operations:

(1) One (1) return sand handling and screening operation, identified as P80, with a maximum throughput capacity of 660 tons of sand per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C15, that exhaust to Stack S15 or by one (1) baghouse system, identified as C16, that exhaust to Stack S16;

(2) One (1) sand mulling and handling operation, identified as P81, with a maximum capacity of 660 tons of sand per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C15. The gases are then exhausted to Stack S15;

(3) One (1) sand blending and cooling operation, identified as P82, with a maximum capacity of 660 tons of sand per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C15. The gases are then exhausted to Stack S15;

(4) One (1) spent sand and dust handling operation, identified as P83, with a maximum throughput capacity of 55 tons of sand per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C15. The gases are then exhausted to Stack S15;

(5) One (1) metal returns handling operation, identified as P84, with a maximum capacity of 44 tons per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C15, that exhaust to Stack S15 or by one (1) baghouse system, identified as C16, that exhaust to Stack S16;

(6) One (1) Tumbleblast shotblast machine, identified as P55, with a maximum capacity of 20 tons of metal castings per hour, with emissions controlled by existing baghouse C15, and exhausting to stack S15.

(d) One (1) autogrinder operation, to be constructed in 2008, identified as P87, with a maximum capacity of 22.5 tons of castings per hour, with emissions controlled by existing Baghouse C16 and exhausting to stack S16.

Ductile Iron Treatment Operations

(1) Two (2) ductile iron treatment stations, both identified as P35, each with a maximum production capacity of 50 tons per hour. Particulate matter emissions are controlled by two (2) baghouse systems identified as C15 and C35. The gases from both baghouses are then exhausted to Stack S15;

Combustion Units

(1) Natural gas fired air make-up units equipped with low-NOx burners, identified as P54, with a maximum heat input rate of 80 MMBtu per hour exhausting to Stack S15.

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

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

D.3.1 PSD BACT for Particulate Matter [326 IAC 2-2-3(a)(3)]

(a) Pursuant to PSD/SSM 123-29490-00019 and 326 IAC 2-2-3(a)(3) (Prevention of Significant Deterioration (PSD) Rules), the particulate matter emissions from the following operations shall be limited as shown in the table below:

Stack ID	Process	Process ID	PM Emission Limitation (gr/dscf)	PM Emission Limitation (lbs/hr)
S15	Return Sand Handling/ Screening	P80	0.005	30.9
	Sand Mulling and Handling	P81		
	Sand Blending and Cooling	P82		
	Spent Sand and Dust Handling	P83		
	Metal Returns Handling System	P84		
	Line 5 Pouring/Mold Cooling	P60		
	Line 5 Shakeout	P61		
	Line 5 Cast Cooling	P62		
	Line 6 Pouring/Mold Cooling	P65		
	Line 6 Shakeout	P66		
	Line 6 Cast Cooling	P67		
	Line 7 Pouring/Mold Cooling	P70		
	Line 7 Shakeout	P71		
	Line 7 Cast Cooling	P72		
	Line 8 Pouring/Mold Cooling	P75		
	shotblast machine	P55		
	ductile iron treatment stations #1 and #2	P35		
S16	Return Sand Handling/ Screening	P80	0.005	17.2
	Line 5 Pick and Sort	P63		
	Line 5 Cleaning/ Grinding	P64		
	Line 6 Shakeout	P66		
	Line 6 Cast Cooling	P67		
	Line 6 Pick and Sort	P68		
	Line 6 Cleaning/ Grinding	P69		
	Line 7 Shakeout	P71		
	Line 7 Cast Cooling	P72		
	Line 7 Pick and Sort	P73		
	Line 7 Cleaning/ Grinding	P74		

Stack ID	Process	Process ID	PM Emission Limitation (gr/dscf)	PM Emission Limitation (lbs/hr)
	Line 8 Shakeout	P76		
	Line 8 Cast Cooling	P77		
	Line 8 Pick and Sort	P78		
	Line 8 Cleaning/ Grinding	P79		

(b) Pursuant to CP123-4593-00019 issued on January 19, 1996, visible emissions from any baghouse stack shall not exceed ten percent (10%) opacity.

D.3.2 PSD BACT for Lead [326 IAC 2-2-3(a)(3)] [326 IAC 2-4.1-1]

(a) Pursuant to CP-123-8451-00019, issued on February 4, 1998, Amendment 123-9740-00019, issued May 22, 1998, SSM123-12331-00019 issued on January 31, 2001, and 326 IAC 2-2-3(a)(3) and revised by PSD/SSM 123-25303-00019, the lead (Pb) emissions from the following operations shall be limited as shown in the table below:

Stack ID	Process	Process ID	Lead Emission Limitation for stack (lb/hr)
S15	Line 5 Pouring/Mold Cooling	P60	0.035
	Line 5 Shakeout	P61	
	Line 5 Cast Cooling	P62	
	Line 6 Pouring/Mold Cooling	P65	
	Line 6 Shakeout	P66	
	Line 6 Cast Cooling	P67	
	Line 7 Pouring/Mold Cooling	P70	
	Line 7 Shakeout	P71	
	Line 7 Cast Cooling	P72	
	Line 8 Pouring/Mold Cooling	P75	
	shotblast machine	P55	
	Metal Returns Handling System	P84	
	Return Sand Handling/Screening	P80	
	Sand Mulling and Handling	P81	
	Sand Blending and Cooling	P82	
	Spent Sand and Dust Handling	P83	
S16	Line 5 Shakeout	P61	0.018
	Line 5 Pick and Sort	P63	
	Line 5 Cleaning/ Grinding	P64	
	Line 6 Shakeout	P66	
	Line 6 Cast Cooling	P67	
	Line 6 Pick and Sort	P68	
	Line 6 Cleaning/ Grinding	P69	
	Line 7 Shakeout	P71	
	Line 7 Cast Cooling	P72	
	Line 7 Pick and Sort	P73	
	Line 7 Cleaning/ Grinding	P74	
	Line 8 Shakeout	P76	
	Line 8 Cast Cooling	P77	
	Line 8 Pick and Sort	P78	
	Line 8 Cleaning/ Grinding	P79	
	Return Sand Handling/Screening	P80	
	Metal Returns Handling System	P84	

(b) Pursuant to PSD/SSM 123-29490-00019 and 326 IAC 2-2-3 (Prevention of Significant Deterioration (PSD)), the following limit is determined as Best Available Control Technology (BACT) for lead (Pb) for the P35-ductile iron treatment stations #1 and #2, exhausting through stack S15.

The lead emissions from the P35-ductile iron treatment stations #1 and #2 shall be controlled by a fabric filter baghouse and the lead emissions shall not exceed 1,000 ppm and 0.0047 pounds per hour.

D.3.3 PSD BACT for Beryllium [326 IAC 2-2-3(a)(3)] [326 IAC 2-4.1-1]

(a) Pursuant to CP-123-8451-00019, issued on February 4, 1998, Amendment 123-9740-00019, issued May 22, 1998, SSM123-12331-00019 issued on January 31, 2001, and 326 IAC 2-2-3(a)(3) and revised by PSD/SSM 123-25303-00019, the beryllium (Be) emissions from the processes listed below shall be limited as shown in the table below:

Stack ID	Process	Process ID	Beryllium Emission Limitation for stack (lb/hr)
S15	Line 5 Pouring/Mold Cooling	P60	0.00069
	Line 5 Shakeout	P61	
	Line 5 Cast Cooling	P62	
	Line 6 Pouring/Mold Cooling	P65	
	Line 6 Shakeout	P66	
	Line 6 Cast Cooling	P67	
	Line 7 Pouring/Mold Cooling	P70	
	Line 7 Shakeout	P71	
	Line 7 Cast Cooling	P72	
	Line 8 Pouring/Mold Cooling	P75	
	shotblast machine	P55	
	Metal Returns Handling System	P84	
	Return Sand Handling/Screening	P80	
	Sand Mulling and Handling	P81	
	Sand Blending and Cooling	P82	
	Spent Sand and Dust Handling	P83	
S16	Line 5 Shakeout	P61	0.00036
	Line 5 Pick and Sort	P63	
	Line 5 Cleaning/ Grinding	P64	
	Line 6 Shakeout	P66	
	Line 6 Cast Cooling	P67	
	Line 6 Pick and Sort	P68	
	Line 6 Cleaning/ Grinding	P69	
	Line 7 Shakeout	P71	
	Line 7 Cast Cooling	P72	
	Line 7 Pick and Sort	P73	
	Line 7 Cleaning/ Grinding	P74	
	Line 8 Shakeout	P76	
	Line 8 Cast Cooling	P77	
	Line 8 Pick and Sort	P78	
	Line 8 Cleaning/ Grinding	P79	
	Return Sand Handling/Screening	P80	
	Metal Returns Handling System	P84	

(b) Pursuant to PSD/SSM 123-29490-00019 and 326 IAC 2-2-3 (Prevention of Significant Deterioration (PSD)), the following limit is determined as Best Available Control Technology (BACT) for beryllium (Be) for the P35-ductile iron treatment stations #1 and #2, exhausting through stack S15.

The beryllium emissions from the P35-ductile iron treatment stations #1 and #2 shall be controlled by a fabric filter baghouse and the beryllium emissions shall not exceed 20 ppm and 0.00009 pounds per hour.

D.3.4 PSD BACT for Sulfur Dioxide [326 IAC 2-2-3(a)(3)]

Pursuant to PSD/SSM 123-29490-00019 and 326 IAC 2-2-3(a)(3), the sulfur dioxide (SO_2) emissions from the following processes shall be limited as shown in the table below:

Stack ID	Process	Process ID	SO_2 Emission Limitation (lb/ton)	SO_2 Emission Limitation for stack (lb/hr)
S15	Line 5 Pouring/Mold Cooling	P60	0.02	2.02
	Line 6 Pouring/Mold Cooling	P65		
	Line 7 Pouring/Mold Cooling	P70		
	Line 8 Pouring/Mold Cooling	P75		

D.3.5 PSD BACT for Volatile Organic Compound [326 IAC 2-2-3(a)(3)] [326 IAC 8-1-6]

Pursuant to PSD/SSM 123-29490-00019, 326 IAC 2-2-3(a)(3) and 326 IAC 8-1-6 (General Reduction Requirements for New Facilities), the volatile organic compound (VOC) emissions from the following processes shall be limited as shown in the table below:

The following limit is determined as Best Available Control Technology (BACT) for volatile organic compounds (VOC) for the Pouring/Mold Cooling and Shakeout Operations for Phase 2 Lines 5 to 8 exhausting through Stacks S15 and S16.

The combined VOC emissions from the pouring/mold cooling and shakeout operation shall be controlled by mold vent off-gas ignition and shall not exceed 1.4 pounds per ton of iron poured and 141.4 lbs/hour, combined for both stacks, identified as S15 and S16.

D.3.6 PSD BACT for Carbon Monoxide [326 IAC 2-2-3(a)(3)]

Pursuant to PSD/SSM 123-29490-00019 and 326 IAC 2-2-3(a)(3), the carbon monoxide (CO) emissions from the following processes shall be limited as shown in the table below:

Stack ID	Process	Process ID	CO Emission Limitations for individual processes (lb/ton iron)	CO Emission Limitations for Stacks (lbs/hr)
S15	Line 5 Pouring/Mold Cooling	P60	5.0	546
	Line 5 Shakeout	P61	1.0	
	Line 6 Pouring/Mold Cooling	P65	5.0	
	Line 6 Shakeout	P66	1.0	
	Line 7 Pouring/Mold Cooling	P70	5.0	
	Line 7 Shakeout	P71	1.0	
	Line 8 Pouring/Mold Cooling	P75	5.0	
	P54 Natural Gas Air Make-up	P54		
	P53B Phase ll Ladle Preheating	P53B		
S16	Line 5 Shakeout	P61	1.0	60.0
	Line 6 Shakeout	P66	1.0	
	Line 7 Shakeout	P71	1.0	
	Line 8 Shakeout	P76	1.0	

D.3.7 PSD BACT for NOx [326 IAC 2-2-3(a)(3)]

(a) Pursuant to PSD/SSM 123-29490-00019, and 326 IAC 2-2-3(a)(3), the (NO_X) emissions from the following processes shall be limited as shown in the table below:

Stack ID	Process	Process ID	NOx Emission Limitations for individual processes (lb/ton iron)	NOx Emission Limitations for Stacks (lbs/hr)
S15	Line 5 Pouring/Mold Cooling	P60		
	Line 6 Pouring/Mold Cooling	P65		
	Line 7 Pouring/Mold Cooling	P70		
	Line 8 Pouring/Mold Cooling	P75		
	P54 Natural Gas Air Make-up	P54		
	P53B Phase ll Ladle Preheating	P53B	0.01	1.01

(b) Pursuant to CP-123-8451-00019, issued on February 4, 1998, and 326 IAC 2-2-3(a)(3), the natural gas fired air makeup units, identified as P54, shall be equipped with low-NOx burners and shall be limited to a maximum heat input rate of 80 MMBtu per hour.

D.3.8 Operating Requirements [326 IAC 2-2-3(a)(3)]

(a) Pursuant to PSD/SSM 123-29490-00019 and 326 IAC 2-2-3(a)(3), the maximum production rate of both ductile iron treatment stations identified as P35 shall not exceed a combined total of 100 tons of iron per hour, based on a 24 hour average.

(b) Pursuant to PSD/SSM 123-29490-00019 and 326 IAC 2-2-3(a)(3), the sand handling operations shall comply with the following limitations:

(1) the return sand handling/screening process, identified as P80, shall be limited to a maximum throughput capacity of 660 tons of sand per hour;

(2) the sand mulling/handling process, identified as P81, shall be limited to a maximum throughput capacity of 660 tons of sand per hour.

(3) the sand blending and cooling process, identified as P82, shall be limited to a maximum throughput capacity of 660 tons of sand per hour; and

(4) the spent sand and dust handling system, identified as P83, shall be limited to a maximum throughput capacity of 55 tons of sand per hour.

(c) Pursuant to CP-123-8451-00019, issued on February 4 1998 and 326 IAC 2-2-3(a)(3), the metal returns handling system, identified as P84, shall be limited to a maximum capacity of 44 tons per hour.

D.3.9 PSD Minor Limit [326 IAC 2-2]

The PM and PM10 emissions from the autogrinder process exhausting to stack S16 shall not exceed 1.0 pounds per hour.

Compliance with these limits will limit the potential PM and PM10 emissions from the sand handling operations and the autogrinder to less than 25 and 15 tons per year and render the requirements of 326 IAC 2-2 not applicable to the sand handling operations and the autogrinder constructed in 2008.

D.3.10 Particulate Emission Limitations for Manufacturing Processes [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2, the particulate matter (PM) from the autogrinder operation identified as P87 shall not exceed 33.0 pounds per hour when operating at a process weight rate of 22.5 tons per hour. This limit was calculated using the following equations:

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:

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

D.3.11 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan (PMP) is required for this unit and its control device. Section B - Preventive Maintenance Plan contains the Permittee's obligations with regard to the preventive maintenance plan required by this condition.

Compliance Determination Requirements

D.3.12 Testing Requirements [326 IAC 2-7-6(1),(6)] [326 IAC 2-1.1-11]

(a) Within one hundred and eighty (180) days, after the Phase 2 cupola (P33) achieves a melt rate greater than 80 tons per hour, the Permittee shall perform, lead, and beryllium testing on the processes exhausting to stacks S15 and S16 using methods as approved by the Commissioner, in order to demonstrate compliance with the total stack limits specified in conditions D.3.2(a), and D.3.3(a). These tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C - Performance Testing contains the Permittee's obligations with regard to the performance testing required by this condition.

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(b) Within one hundred and eighty (180) days, after the Phase 2 cupola (P33) achieves a melt rate greater than 80 tons per hour, the Permittee shall perform, lead, and beryllium testing on the processes exhausting to stack S15 using methods as approved by the Commissioner, in order to demonstrate compliance with the total stack limits specified in Conditions D.3.2(b), and D.3.3(b). These tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C - Performance Testing contains the Permittee's obligations with regard to the performance testing required by this condition.

(c) Within one hundred and eighty (180) days, after the Phase 2 cupola (P33) achieves a melt rate greater than 80 tons per hour, the Permittee shall perform PM and opacity, testing on the processes exhausting to stacks S15 and S16 using methods as approved by the Commissioner, in order to demonstrate compliance with the total stack limits specified in Condition D.3.1. These tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C - Performance Testing contains the Permittee's obligations with regard to the performance testing required by this condition.

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(d) Within one hundred and eighty (180) days, after the Phase 2 cupola (P33) achieves a melt rate greater than 80 tons per hour, the Permittee shall perform SO2, VOC, CO and NOx, testing on the processes exhausting to stacks S15 and S16 using methods as approved by the Commissioner, in order to demonstrate compliance with the total stack limits specified in Conditions D.3.4, D.3.5, D.3.6 and D.3.7. These tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C - Performance Testing contains the Permittee's obligations with regard to the performance testing required by this condition.

D.3.13 Particulate Matter (PM/PM-10) [326 IAC 2-7-6(6)]

(a) Pursuant to CP-123-8451-00019, issued on February 4, 1998, and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD) Rules), the PM, lead, and beryllium emissions shall be controlled by baghouses C15 (Stack S15), and C16 (Stack S16) at all times when the associated processes are in operation.

(b) In order to comply with Conditions D.3.9 and D.3.10, the Baghouse C16 for particulate control shall be in operation and control emissions from the autogrinder identified as P87 at all times the autogrinder is in operation.

(c) In the event that bag failure is observed in a multi-compartment baghouse, if operations will continue for ten (10) days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

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

D.3.14 Visible Emission Notations [40 CFR 64]

(a) Visible emission notations of each baghouse stack exhaust shall be performed once per day 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) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C- Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

D.3.15 Baghouse Parametric Monitoring [40 CFR 64]

(a) The Permittee shall record the pressure drop across the baghouse C15

used in conjunction with the processes listed in this section, at least once per day when the associated process is in operation. When for any one reading, the pressure drop across a baghouse is outside the normal range of 1.0 and 10.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable responsesteps in accordance with Section C- Response to Excursions or Exceedances. 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 - Response to Excursions or Exceedances, shall be considered a deviation from this permit.

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

(b) The baghouse C16 shall be equipped with a bag leak detection system. This system shall be operated pursuant to site-specific monitoring plan and corrective action plan required under 40 CFR 63.7710(b)(4) and (5).

D.3.16 Broken or Failed Bag Detection [40 CFR 64]

(a) For a single compartment baghouse controlling emissions from a process operated continuously, a failed unit and the associated process shall be shut down immediately until the failed unit 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).

(b) For a single compartment baghouse controlling emissions from a batch process, the feed to the process shall be shut down immediately until the failed unit has been repaired or replaced. The emissions unit shall be shut down no later than the completion of the processing of the material in the line. 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).

Bag failure can be indicated by a significant drop in the baghouse's pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks, dust traces or triboflows.

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

D.3.17 Record Keeping Requirement

(a) To document compliance with Conditions D.3.14 the Permittee shall maintain records of visible emission notations of each baghouse stack exhaust once per day. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g. the process did not operate that day).

(b) To document compliance with Conditions D.3.15(a) the Permittee shall maintain records of the pressure drop across the baghouse C15 once per day. The Permittee shall include in its daily record when a pressure drop reading is not taken and the reason for the lack of pressure drop reading (e.g. the process did not operate that day).

(c) Pursuant to CP123-8451-00019 issued on February 4, 1998, and to document compliance with Conditions D.3.7(b) the Permittee shall maintain records of the equipment installed and the type of fuel used in the air makeup units.

(d) In order to document compliance with D.3.8, records shall be kept of the total iron throughput to each ductile iron treatment station each day of operation, and of the total hours of operation of each ductile iron treatment station each day of operation.

(e) Section C - General Record Keeping Requirements, contains the Permittee's obligation with regard to the records required by this condition.

SECTION D.4 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

Facilities Exhausting to Stacks S08, S11, and S14

Phase I

(a) sand handling operations and ancillary operations, each constructed in 1996, consisting of the following:

(1) One (1) core sand handling operation, identified as P40, with a maximum throughput of 16 tons per hour, using one (1) baghouse (C08) for particulate control, exhausting to stack S08;

(2) One (1) core manufacturing operation, identified as P41, with a maximum throughput of 16 tons per hour, exhausting to stack S11;

(3) One (1) core machine & oven operation, identified as P51, with a maximum heat input capacity of 16.8 MMBtu per hour, combusting natural gas, exhausting to stack S11;

(4) One (1) pattern shop, identified as P50, controlled by a baghouse, exhausting inside the building.

Phase II

(b) sand handling operations and ancillary operations, each constructed in 1998, consisting of the following:

(1) One (1) phenolic-urethane core sand handling system, identified as P42, constructed in 1998 and modified in 2008, with a maximum production capacity of 32 tons of cores per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C08, that exhausts to Stack S08;

(2) One (1) phenolic-urethane core making process, identified as P43, consisting of 6 mixers and 6 core machines, with a total maximum production capacity of 20 tons of cores per hour. DMIPA emissions are controlled by one (1) packed bed scrubber, identified as C14. The gases are then exhausted to Stack S14;

(3) One (1) phenolic-urethane core making process, identified as P44, consisting of 2 mixers and 2 core machines, each with a maximum capacity of 3 tons per hour. DMIPA emissions are controlled by one (1) packed bed scrubber, identified as C14. The gases are then exhausted to Stack S14;

Core Room Expansion II

(a) one (1) phenolic-urethane core machine, identified as P45A, to be constructed in 2008, with a maximum capacity of 6 tons per hour, with emissions controlled by existing scrubber C14 and exhausting through stack S14; and

(b) one (1) phenolic-urethane core machine, identified as P45B, to be constructed in 2008, with a maximum capacity of 6 tons per hour, with emissions controlled by existing scrubber C17 and exhausting through stack S17.

(c) two (2) natural gas-fired core dry oven, to be constructed in 2008, identified as P48A and P48B, with a maximum capacity of 2.5 MMBtu/hr each, with emissions exhausting in to the building.

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

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

D.4.1 Particulate Matter Emissions Limitations [326 IAC 2-2-3(a)(3)]

(a) Pursuant to CP-123-4593-00019, issued on January 19, 1996, CP-123-8451-00019, issued on February 4, 1998, and 326 IAC 2-2-3(a)(3) (Prevention of Significant Deterioration (PSD) Rules), the particulate matter emissions from the following operations shall be limited to the following:

Stack ID	Process	Process ID	PM Emission Limitations for individual processes (gr/dscf) unless otherwise specified	PM Emission Limitations for Stacks (lb/hr) and (tons/yr)
S08	Core Sand Handling	P40	0.005	0.6 lb/hr
S08	Phenolic-Urethane Core Sand Handling System	P42	0.005	
S11	Core Machines & Ovens	P51	0.23 lb/hr and 1.0 ton/yr	0.23 lb/hr and 1.0 tons/yr

(b) Pursuant to CP123-4593-00019 issued on January 19, 1996, visible emissions from any baghouse stack shall not exceed ten percent (10%) opacity.

D.4.2 VOC BACT Limits [326 IAC 2-2-3(a)(3)] [326 IAC 8-1-6]

Pursuant to CP-123-4593-00019, issued on January 19, 1996, CP-123-8451-00019, issued on February 4, 1998, SSM 123-12948-00019, issued on June 5, 2001, SSM 123-16456, issued on May 13, 2003, and SSM 123-26878-00019, issued in 2008, 326 IAC 8-1-6 (BACT), and 326 IAC 2-2-3(a)(3) (Prevention of Significant Deterioration (PSD) Rules), the Permittee shall comply with the following requirements:

(a) The VOC emissions from the core machines and ovens identified as P51 shall not exceed 0.10 pounds per hour and 0.43 tons per year.

(b) The VOC emissions from the core manufacturing process identified as P41 shall not exceed 4.6 pounds per hour and 20.2 tons per year.

(c) The volatile organic compound (VOC) emissions, not including dimethylisopropylamine (DMIPA), from both of the phenolic-urethane core machines, identified as P44, shall not exceed 1.836 pounds per hour (total for both machines combined) and 0.010 pounds per pound of binder used.

(d) The volatile organic compound (VOC) emissions from both of the mixers, identified as P44, shall not exceed 0.324 pounds per hour (total for both mixers combined) and 0.002 pounds per pound of binder used.

(e) The amount of binder used in both mixers, identified as P44, combined shall not exceed 390 tons per 12 consecutive month period with compliance determined at the end of each month.

(f) The amount of cores produced by both core machines, identified as P44, combined shall not exceed 26,000 tons per 12 consecutive month period with

compliance determined at the end of each month.

(g) The total VOC emissions (including DMIPA) from the mixers and core machines identified as P43 shall not exceed 0.4 pound per ton of cores.

(h) The scrubber controlling the DMIPA emissions from the core machines identified as P43**,** P44, P45A, and P45B shall maintain a 100% capture of the DMIPA emissions, using a permanent total enclosure that complies with the requirements of 40 CFR Part 51, Appendix M, Method 24. The scrubber shall achieve at least 98% overall control efficiency of the DMIPA.

(i) The DMIPA emissions from the scrubber controlling the core machines identified as P43 and P44 shall not exceed 0.04 pound per ton of cores and 1.04 pounds per hour. Compliance with limit is also necessary to render the requirements of 326 IAC 2-4.1-1 (New Source Toxics Control) not applicable.

(j) The DMIPA emissions from the scrubber controlling the core machines identified as P45A and P45B shall not exceed 0.04 pound per ton of cores and 0.24 pounds per hour.

(k) The Permittee shall only use dimethylisopropylamine (DMIPA) as a catalyst for the core machines identified as P43, P44, P45A, and P45B.

D.4.3 Particulate Emission Limitations for Manufacturing Processes [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2, the particulate matter (PM) from the sand handling operation identified as P42 shall not exceed 40.5 pounds per hour when operating at a process weight rate of 32 tons per hour. This limit was calculated using the following equations:

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:

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

D.4.4 PSD BACT for SO_2 [326 IAC 2-2-3(a)(3)]

Pursuant to CP-123-4593-00019, issued on January 19, 1996, CP-123-8451-00019, issued on February 4, 1998, and 326 IAC 2-2-3(a)(3) (Prevention of Significant Deterioration (PSD) Rules), the SO_2 emissions from the core machines and ovens identified as P51 and exhausting to stack S11 shall not exceed 0.01 pound per hour and 0.044 tons per year.

D.4.5 PSD BACT for NOx [326 IAC 2-2-3(a)(3)]

Pursuant to CP-123-4593-00019, issued on January 19, 1996, CP-123-8451-00019, issued on February 4, 1998, and 326 IAC 2-2-3(a)(3) (Prevention of Significant Deterioration (PSD) Rules), the NOx emissions from the core machines and ovens identified as P51 and exhausting to stack S11 shall not exceed 2.35 pounds per hour and 10.3 tons per year.

D.4.6 PSD BACT for CO [326 IAC 2-2-3(a)(3)]

Pursuant to CP-123-4593-00019, issued on January 19, 1996, CP-123-8451-00019, issued on February 4, 1998, and 326 IAC 2-2-3(a)(3) (Prevention of Significant Deterioration (PSD) Rules), the CO emissions from the core machines and ovens identified as P51 and exhausting to stack S11 shall not exceed 0.59 pound per hour and 2.58 tons per year.

D.4.7 Operating Requirements [326 IAC 2-2-3(a)(3)]

(a) Pursuant to CP123-4593-00019 issued on January 19, 1996 and 326 IAC 2-2-3(a)(3), the core ovens shall use only natural gas as a fuel source.

(b) Pursuant to SSM 123-12948-00019, issued on June 5, 2001, and SSM 123-16456, issued on May 13, 2003, the combined maximum capacity of the core machines identified as P44 shall not exceed 6 tons of cores per hour, based on a 24 hour average.

(c) Pursuant to SSM 123-12948-00019, issued on June 5, 2001, and SSM 123-16456, issued on May 13, 2003, the combined maximum capacity of the core machines identified as P43 shall not exceed 20 tons of cores per hour, based on a 24 hour average.

D.4.8 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan (PMP) is required for this unit and its control device. Section B - Preventive Maintenance Plan contains the Permittee's obligations with regard to the preventive maintenance plan required by this condition.

Compliance Determination Requirements

D.4.9 Control of Hazardous Air Pollutants (HAPs) [326 IAC 2-2-3(a)(3)] [326 IAC 2-7-6(6)]

(a) Pursuant to SSM 123-12948-00019, issued on June 5, 2001, SSM 123-16456-00019, issued on May 13, 2003, CP123-4593-00019 issued on January 19, 1996 and 326 IAC 2-2-3(a)(3), the DMIPA emissions from the core machines identified as P43 and P44 shall be controlled by a scrubber C14 (Stack S14) at all times that any of the core machines is in operation.

(b) Pursuant to SSM 123-12948-00019, issued on June 5, 2001, SSM 123-16456-00019, issued on May 13, 2003, CP123-4593-00019 issued on January 19, 1996 and 326 IAC 2-2-3(a)(3), the PM emissions from the core sand handling operations identified as P40 and P42 shall be controlled by a baghouse (C08) at all times that the core sand handling operations are in operation.

(c) The PM emissions from the pattern shop identified as P50 shall be controlled by the baghouse at all times that the pattern shop is in operation.

(d) In the event that bag failure is observed in a multi-compartment baghouse, if operations will continue for ten (10) days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

D.4.10 Testing Requirements [326 IAC 2-7-6(1),(6)] [326 IAC 2-1.1-11]

(a) In order to determine compliance with Condition D.4.2(h) and (i), the Permittee shall perform DMIPA testing by December 2014 on the scrubber controlling the core machines identified as P43 and P44 utilizing methods as approved by the Commissioner. These tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C - Performance Testing contains the Permittee's obligations with regard to the performance testing required by this condition.

(b) Within one hundred and eighty (180) days after the startup of the core machines, identified as P45A and P45B, in order to determine compliance with Condition D.4.2(j), the Permittee shall perform DMIPA testing on the core machines, utilizing methods as approved by the Commissioner. These tests shall be repeated at least once every five (5) years from the date of this valid compliance determination. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C - Performance Testing contains the Permittee's obligations with regard to the performance testing required by this condition.

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

D.4.11 Packed Bed Scrubber Parametric Monitoring

(a) The Permittee shall monitor and record the pH of the scrubber solution and the pressure drop across the scrubber, identified as C14 at least once per day. When for any one reading, the pressure drop across the scrubber is outside the normal range of 0.5 to 5 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C- Response to Excursions or Exceedances. When for any one reading, the pH level of the scrubbing liquid exceeds the normal maximum of 4.5 or a maximum established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C- Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances, shall be considered a deviation from this permit.

(b) The Permittee shall monitor the flow rate of the scrubbing liquid daily. When for any one reading, the flow rate is below the normal minimum of 235 gallons per minute or a minimum established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C- Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances, shall be considered a deviation from this permit.

(c) The instruments used for determining the pressure, flow rate, and pH level shall comply with Section C - 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.4.12 Packed Bed Scrubber Failure Detection

(a) For a scrubber controlling emissions from a process operated continuously, a failed unit and the associated process shall be shut down immediately until the failed unit 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).

(b) For a scrubber controlling emissions from a batch process, the feed to the process shall be shut down immediately until the failed unit has been repaired or replaced. The emissions unit shall be shut down no later than the completion of the processing of the material in the line. 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.4.13 Visible Emission Notations

(a) Visible emission notations of each baghouse stack exhaust shall be performed once per day 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) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C- Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

D.4.14 Baghouse Parametric Monitoring

The Permittee shall record the pressure drop across each of the baghouses used in conjunction with the processes listed in this section, at least once per day when the associated process is in operation. When for any one reading, the pressure drop across the baghouse is outside the normal range of 1.0 and 10.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C- Response to Excursions or Exceedances. 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 - Response to Excursions or Exceedances, shall be considered a deviation from this permit.

The instrument used for determining the pressure shall comply with Section C - 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.4.15 Broken or Failed Bag Detection

(a) For a single compartment baghouse controlling emissions from a process operated continuously, a failed unit and the associated process shall be shut down immediately until the failed unit 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).

(b) For a single compartment baghouse controlling emissions from a batch process, the feed to the process shall be shut down immediately until the failed unit has been repaired or replaced. The emissions unit shall be shut down no later than the completion of the processing of the material in the line. 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).

Bag failure can be indicated by a significant drop in the baghouse=s pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks, dust traces or triboflows.

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

D.4.16 Record keeping Requirement

(a) To document compliance with Condition D.4.2(e), the Permittee shall maintain records of the binder usage in the two core mixers associated with the core making process identified as P44 each month.

(b) To document compliance with Condition D.4.2(f), the Permittee shall maintain records of the core production from the two core machines associated with the core making process identified as P44 each month.

(c) To document compliance with Condition D.4.11(a), the Permittee shall maintain records of the pressure drop and pH readings of the scrubber once per day. The Permittee shall include in its daily record when a reading is not taken and the reason for the lack of reading (e.g. the process did not operate that day).

(d) To document compliance with Condition D.4.11(b), the Permittee shall maintain records of the flow rate of the scrubber. The Permittee shall include in its daily record when a reading is not taken and the reason for the lack of reading (e.g. the process did not operate that day).

(e) To document compliance with Conditions D.4.13 the Permittee shall maintain records of visible emission notations of each baghouse stack exhaust once per day. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g. the process did not operate that day).

(f) To document compliance with Conditions D.4.14 the Permittee shall maintain records of the pressure drop across each baghouse once per day. The Permittee shall include in its daily record when a pressure drop reading is not taken and the reason for the lack of pressure drop reading (e.g. the process did not operate that day).

(g) In order to document compliance with D.4.7(b) and (c), records shall be kept of the core production of P43 and P44 each day of operation, and of the total hours of operation of P43 and P44 each day of operation.

(h) Section C - General Record Keeping Requirements, contains the Permittee's obligation with regard to the records required by this condition.

D.4.17 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.4.2 (e) and (f) 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 reports submitted by the Permittee do require the certification by the “responsible official” as defined by 326 IAC 2-7-1(34).

SECTION D.5 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

Phase I

(c) Sand handling operations and ancillary operations, each constructed in 1996, consisting of the following:

(10) One (1) ladle preheating operation, identified as P53, with a maximum heat input capacity of 11.5 MMBtu per hour, combusting natural gas, exhausting to stack S12;
(2) One (1) charge and make-up operation, identified as P32, with a maximum throughput of 80 tons per hour, using one (1) baghouse (C44) for particulate control, exhausting to stack S44;
(11) One (1) ladle filling & iron transport operation, identified as P85, with a maximum throughput of 100 tons per hour, using one (1) baghouse (C44) for particulate control, exhausting to stack S44; and
(12) One (1) ladle filling & iron transport operation, identified as P85, with a maximum throughput of 100 tons per hour;
(13) One (1) Phase 1 Melt Area Ladle Cleaning, identified as P86, with a maximum capacity of 100 pounds of burn bars per hour based on a 24-hour average, using one (1) baghouse (C44) as control, and exhausting to stack S44;
(15) One (1) Line 2 ladle cleaning operation, with a maximum capacity of 100 pounds of burn bars per hour based on a 24-hour average, using no control, and exhausting inside the building;
(16) One (1) Line 3 ladle cleaning operation, with a maximum capacity of 100 pounds of burn bars per hour based on a 24-hour average, using no control, and exhausting inside the building;
(18) One (1) 16 ton iron bath desulfurization ladle operation, constructed in 2010, identified as P34, with a maximum throughput of 100 tons per hour, using one (1) baghouse (C44) for particulate matter control and exhausting through stack S44.

Phase II

(c) Sand handling operations and ancillary operations, each constructed in 1998, modified in 2010, consisting of the following:

(6) One (1) enclosed cupola charge make-up and handling unit with a maximum charge of 114.0 tons per hour;
(7) One (1) ladle filling and iron transport operation with a maximum capacity of 188 tons of iron per hour;
(8) One (1) Phase 2 Melt Area Ladle Cleaning, identified as P86, with a maximum capacity of 100 pounds of burn bars per hour based on a 24-hour average, using one (1) baghouse (C44) as control, and exhausting to stack S44;
(9) One (1) Line 5 ladle cleaning operation, with a maximum capacity of 100 pounds of burn bars per hour based on a 24-hour average, using no control, and exhausting inside the building;
(10) One (1) Line 6 ladle cleaning operation, with a maximum capacity of 100 pounds of burn bars per hour based on a 24-hour average, using no control, and exhausting inside the building;
(11) One (1) Line 7 ladle cleaning operation, with a maximum capacity of 100 pounds of burn bars per hour based on a 24-hour average, using no control, and exhausting inside the building;
(12) One (1) Line 8 ladle cleaning operation, with a maximum capacity of 100 pounds of burn bars per hour based on a 24-hour average, using no control, and exhausting

inside the building;

(13) One (1) Phase 2 Ductile Iron Treatment Ladle Cleaning, with a maximum capacity of 100 pounds of burn bars per hour based on a 24-hour average, with approximately 25% of emissions controlled by Baghouse C15, and exhausting to stack S15, and with approximately 75% emissions uncontrolled, and exhausting inside the building;

Note: The ductile treatment operation includes locations where treatment occurs and iron is transferred. Fumes in the treatment area are captured by Baghouse C15 but those in the metal transfer area are not captured.

(18) Raw material handling including iron handling at a maximum rate of 188 tons per hour, alloys handling at a maximum rate of 1.5 tons per hour, coke handling at a maximum rate of 15 tons per hour, and limestone handling at a maximum rate of 4.5 tons per hour; and

(4) One (1) ladle preheating operation, identified as P53B, with a maximum heat input capacity of 11.5 MMBtu per hour, combusting natural gas, exhausting to stack S13.

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

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

D.5.1 PSD BACT for Particulate Matter [326 IAC 2-2-3(a)(3)] [326 IAC 6-3-2]

Pursuant to CP-123-4593-00019, issued on January 19, 1996, PSD/SSM 123-29490-00019 and 326 IAC 2-2-3(a)(3) (Prevention of Significant Deterioration (PSD) Rules), the following conditions shall apply:

(a) the particulate matter emissions from the baghouse C44 controlling the charge makeup operations, the molten iron handling operations, and the ladle cleaning operations shall not exceed 0.005 gr/dscf and 6.86 pounds per hour;

(b) the particulate matter emissions from the ladle preheating operation identified as P53 shall not exceed 0.16 pound per hour;

(c) visible emissions from any baghouse stack shall not exceed ten percent (10%) opacity;

(d) visible emissions from any building opening shall not exceed three percent (3%) opacity.

(e) the PM emissions from the desulfurization operation identified as P34 shall not exceed 0.64 pounds per hour.

D.5.2 PSD BACT for Lead [326 IAC 2-2-3(a)(3)] [326 IAC 2-4.1-1]

(a) Pursuant to CP-123-8451-00019 issued on February 4, 1998, and 326 IAC 2-2-3(a)(3), the lead (Pb) emissions from the charge makeup operations, the molten iron handling operations, and the ladle cleaning operations shall not exceed 0.00004 pound per hour.

(b) Pursuant to PSD/SSM 123-29490-00019 and 326 IAC 2-2-3 (Prevention of Significant Deterioration (PSD)), the following limit is determined as Best Available Control Technology (BACT) for lead (Pb) for the P34-Desulfurization exhausting through stack S44.

The lead emissions from the P34-Desulfurization shall be controlled by a fabric filter baghouse and the lead emissions shall not exceed 1,000

ppm and 0.00064 pounds per hour.

D.5.3 PSD BACT for Beryllium [326 IAC 2-2-3(a)(3)] [326 IAC 2-4.1-1]

(a) Pursuant to CP-123-4593-00019, issued on January 19, 1996, CP-123-8451-00019, issued on February 4, 1998, and 326 IAC 2-2-3(a)(3) (Prevention of Significant Deterioration (PSD) Rules), the beryllium emissions from the charge makeup operation P32 shall not exceed 0.0000026 pounds per hour.

(b) Pursuant to PSD/SSM 123-29490-00019 and 326 IAC 2-2-3 (Prevention of Significant Deterioration (PSD)), the following limit is determined as Best Available Control Technology (BACT) for beryllium (Be) for the P34-Desulfurization, exhausting through stack S44.

The beryllium emissions from the P34-Desulfurization shall be controlled by a fabric filter baghouse and the beryllium emissions shall not exceed 20 ppm and 0.00001 pounds per hour.

D.5.4 PSD BACT for VOC [326 IAC 2-2-3(a)(3)] [326 IAC 8-1-6]

Pursuant to CP-123-4593-00019, issued on January 19, 1996, CP-123-8451-00019, issued on February 4, 1998, 326 IAC 8-1-6 (BACT), and 326 IAC 2-2-3(a)(3) (Prevention of Significant Deterioration (PSD) Rules), the VOC emissions from the ladle preheating station P53 shall not exceed 0.06621 pound per hour.

D.5.5 CO Emissions [326 IAC 2-2-3(a)(3)]

Pursuant to CP-123-4593-00019, issued on January 19, 1996, CP-123-8451-00019, issued on February 4, 1998, and 326 IAC 2-2-3(a)(3) (Prevention of Significant Deterioration (PSD) Rules), the CO emissions from the ladle preheating station P53 shall not exceed 0.40 pounds per hour.

D.5.6 PSD BACT for NOx [326 IAC 2-2-3(a)(3)]

Pursuant to CP-123-4593-00019, issued on January 19, 1996 and 326 IAC 2-2-3(a)(3) (Prevention of Significant Deterioration (PSD) Rules), the NOx emissions from the ladle preheating station P53 shall not exceed 1.61 pounds per hour.

D.5.7 PSD BACT for SO_2 [326 IAC 2-2-3(a)(3)]

Pursuant to CP-123-4593-00019, issued on January 19, 1996 and 326 IAC 2-2-3(a)(3) (Prevention of Significant Deterioration (PSD) Rules), the SO2 emissions from the ladle preheating station P53 shall not exceed 0.00685 pounds per hour.

D.5.8 Operating Conditions [326 IAC 2-2-3(a)(3)]

Pursuant to CP-123-8451-00019, issued on February 4, 1998 and 326 IAC 2-2-3(a)(3) (Prevention of Significant Deterioration (PSD) Rules), the following limitations shall apply to the Phase II operations:

(a) the ladle filling and iron transport station shall be limited to a maximum capacity of 150 tons of iron per hour;

(b) the ladle cleaning station shall be limited to a maximum usage of 13.2 burn bars per hour;

(c) the raw material handling operations shall be limited to a maximum rate of 150 tons per hour for the iron handling, a maximum rate of 1.5 tons per hour for the alloys handling, a maximum rate of 15 tons per hour for the coke handling, and a maximum rate of 4.5 tons per hour for the limestone handling; and

(d) the enclosed cupola charge make-up and handling unit shall be limited to a maximum charge of 91.2 tons per hour.

D.5.9 Prevention of Significant Deterioration (PSD) Minor Limits [326 IAC 2-2]

Pursuant to PSD/Significant Source Modification No. 123-29490-00019, the Permittee shall comply with the following:

(a) PM10 emissions from the P34 - Desulfurization Ladle shall not exceed 0.64 pounds per hour.

Compliance with these limits will ensure that the PM10 emissions from the proposed modification (P34 - Desulfurization Ladle) and the PM10 emissions from the Actual To Projected Actual emission increase for existing units are less than 15 tons per twelve (12) consecutive month period and render the requirements of 326 IAC 2-2 (PSD) not applicable to this modification for PM10.

D.5.10 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan (PMP) is required for this unit and its control device. Section B - Preventive Maintenance Plan contains the Permittee's obligations with regard to the preventive maintenance plan required by this condition.

Compliance Determination Requirements

D.5.11 Particulate Matter (PM/PM-10) [326 IAC 2-7-6(6)]

(a) Pursuant to CP-123-8451-00019, issued on February 4, 1998, and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD) Rules), the PM, lead, and beryllium emissions from the charge make-up operation, identified as P32 shall be controlled by baghouse C44 at all times when the process is in operation.

(b) In the event that bag failure is observed in a multi-compartment baghouse, if operations will continue for ten (10) days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

D.5.12 Testing Requirements [326 IAC 2-7-6(1),(6)][326 IAC 2-1.1-11]

In order to demonstrate compliance with Conditions D.5.1(e), D.5.2(b), D.5.3(b) and

D.5.9(a), within sixty (60) days of reaching maximum capacity but no later than one hundred and eighty (180) days after initial startup, the Permittee shall conduct PM, PM10, lead and beryllium stack testing on P34 exhuasting to stack S44 utilizing methods as approved by the commissioner. This test shall be repeated at least once every five years from the date of the most recent valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C - Performance Testing contains the Permittee's obligations with regard to the performance testing required by this condition**.**

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

D.5.13 Visible Emission Notations

(a) Visible emission notations of the baghouse C44 stack exhaust shall be performed once per day 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) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C- Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

D.5.14 Baghouse Parametric Monitoring

The Permittee shall record the pressure drop across the baghouse C44 used in conjunction with the charge makeup operation, at least once per day when the process is in operation. When for any one reading, the pressure drop across the baghouse is outside the normal range of 1.0 and 10.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C- Response to Excursions or Exceedances. 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 - Response to Excursions or Exceedances, shall be considered a deviation from this permit.

The instrument used for determining the pressure shall comply with Section C - 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.5.15 Broken or Failed Bag Detection

(a) For a single compartment baghouse controlling emissions from a process operated continuously, a failed unit and the associated process shall be shut down immediately until the failed unit 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).

(b) For a single compartment baghouse controlling emissions from a batch process, the feed to the process shall be shut down immediately until the failed unit has been repaired or replaced. The emissions unit shall be shut down no later than the completion of the processing of the material in the line. 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).

Bag failure can be indicated by a significant drop in the baghouse's pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks, dust traces or triboflows.

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

D.5.16 Record keeping Requirement

(a) To document compliance with Conditions D.5.13 the Permittee shall maintain records of visible emission notations of the baghouse stack exhaust once per day. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g. the process did not operate that day).

(b) To document compliance with Conditions D.5.14 the Permittee shall maintain records of the pressure drop across each baghouse once per day. The Permittee shall include in its daily record when a pressure drop reading is not taken and the reason for the lack of pressure drop reading (e.g. the process did not operate that day).

(c) Section C - General Record Keeping Requirements, contains the Permittee's obligation with regard to the records required by this condition.

SECTION D.6 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Description:

Core Room Expansion I

(a) One (1) phenolic-urethane core sand handling system, identified as P46, constructed in 2005 and modified in 2008, with a maximum production capacity of 51 tons of cores per hour. Particulate matter emissions are controlled by one (1) baghouse, identified as C18, and exhausting inside the building;

(b) One (1) phenolic-urethane core making process, identified as P47, to begin construction in 2005, consisting of 3 mixers and 3 core machines, each with a maximum capacity of 15 tons per hour. DMIPA catalyst emissions are controlled by one (1) packed bed scrubber, identified as C17. The gases are then exhausted to Stack S17;

(c) Three (3) natural gas-fired core drying ovens and natural gas-fired air make-up units, identified as P48, to begin construction in 2005, with the core drying ovens having a combined maximum heat input capacity of 9.0 MMBtu per hour and the air make-up units having a combined maximum heat input capacity of 3.2 MMBtu per hour, exhausting inside the building.

(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.6.1 PSD Minor Limit [326 IAC 2-2]

The PM and PM10 emissions from the core sand handling process and the core drying ovens shall be limited to less than 5.7 lbs/hr and 3.4 lbs/hr, respectively.

Compliance with these limits will limit the PM and PM10 emissions from the core sand handling and the core drying ovens to less than 25 and 15 tons per year, respectively and render the requirements of 326 IAC 2-2 (PSD) not applicable to these emission units.

D.6.2 VOC Emission Limitations [326 IAC 8-1-6][326 IAC 2-2]

Pursuant to 326 IAC 8-1-6 (New Facilities, General Reduction Requirements) the Best Available Control Technology (BACT) for the phenolic-urethane core making process, identified as P47, is as follows:

(a) A packed bed scrubber system with a minimum DMIPA (a VOC) overall control efficiency of 98% shall be used to control DMIPA (a VOC) emissions from the three (3) core machines.

(b) The non-DMIPA volatile organic compound (VOC) emissions from the three (3) phenolic-urethane core machines, identified as P47, shall not exceed 0.01 pound per pound of binder used.

(c) The non-DMIPA volatile organic compound (VOC) emissions from the three (3) mixers, identified as P47, shall not exceed 0.002 pound per pound of binder used.

(d) The amount of binder used in all three (3) mixers, identified as P47, combined shall not exceed 5,910,000 pounds per 12 consecutive month period, with

compliance determined at the end of each month.

(e) The amount of cores produced by all three (3) core machines, identified as P47, combined shall not exceed 197,000 tons per 12 consecutive month period, with compliance determined at the end of each month.

(f) The total DMIPA (a VOC) emissions from the mixers and core machines identified as P47 shall not exceed 0.04 pound per ton of cores.

(g) The scrubber controlling the DMIPA emissions from the core machines identified as P47 shall have a 100% capture of the DMIPA emissions. The scrubber shall achieve at least 98% overall control efficiency of the DMIPA.

(h) The Permittee shall use only low VOC content resins in the core making process.

Compliance with the above limits will also limit emissions of VOC to less than the PSD significant level of 40 tons per year so that the installation of units P46, P47, and P48 is not subject to 326 IAC 2-2 (PSD).

D.6.3 Particulate Emission Limitations for Manufacturing Processes [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the allowable particulate emission rate from the core sand handling system (P46) shall not exceed 44.8 pounds per hour when operating at a process weight rate of 51 tons per hour. The pounds per hour limitation was calculated using the following equation:

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

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

D.6.4 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan (PMP) is required for the core sand handling process and the phenolic-urethane core making process and its control device. Section B - Preventive Maintenance Plan contains the Permittee's obligations with regard to the preventive maintenance plan required by this condition.

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

D.6.5 Particulate Control [326 IAC 2-7-6(6)]

(a) In order to comply with conditions D.6.1 and D.6.3, the baghouse C18 for particulate control shall be in operation and control emissions from the core sand handling system (P46) at all times that the core sand handling system (P46) is in operation.

(b) In the event that bag failure is observed in a multi-compartment baghouse, if operations will continue for ten (10) days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

D.6.6 VOC Control

In order to comply with condition D.6.2, the packed bed scrubber C17 for DMIPA emissions control shall be in operation at control DMIPA emissions from the core machines identified as P47 at all times that any of the core machines is in operation.

D.6.7 Testing Requirements [326 IAC 2-7-6(1),(6)] [326 IAC 2-1.1-11]

In order to determine compliance with Condition D.6.2(g), the Permittee shall perform DMIPA testing by November 2014 on the scrubber controlling the core machines identified as P47 utilizing methods as approved by the Commissioner. This test shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C - Performance Testing contains the Permittee's obligations with regard to the performance testing required by this condition.

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

D.6.8 Packed Bed Scrubber Parametric Monitoring

(a) The Permittee shall monitor and record the pH of the scrubber solution and the pressure drop across the scrubber, identified as C17 at least once per day. When for any one reading, the pressure drop across the scrubber is outside the normal range of 0.5 to 5 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C- Response to Excursions or Exceedances. When for any one reading, the pH level of the scrubbing liquid exceeds the normal maximum of 4.5 or a maximum established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C- Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances, shall be considered a deviation from this permit.

(b) The Permittee shall monitor the flow rate of the scrubbing liquid daily. When for any one reading, the flow rate is below the normal minimum of 254 gallons per minute or a minimum established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C- Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances, shall be considered a deviation from this permit.

(c) The instruments used for determining the pressure, flow rate, and pH level shall comply with Section C - 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.6.9 Packed Bed Scrubber Failure Detection

(a) For a scrubber controlling emissions from a process operated continuously, a failed unit and the associated process shall be shut down immediately until the failed unit 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).

(b) For a scrubber controlling emissions from a batch process, the feed to the process shall be shut down immediately until the failed unit has been repaired or replaced. The emissions unit shall be shut down no later than the completion of the processing of the material in the line. 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.6.10 Parametric Monitoring

The Permittee shall record the pressure drop across the baghouse used in conjunction with the core sand handling system (P46), at least once per day when the process is in operation. When for any one reading, the pressure drop across the baghouse is outside the normal range of 1.0 and 10.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C- Response to Excursions or Exceedances. 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 - Response to Excursions or Exceedances shall be considered a deviation from this permit.

The instrument used for determining the pressure shall comply with Section C - 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.6.11 Broken or Failed Bag Detection

(a) For a single compartment baghouse controlling emissions from a process operated continuously, a failed unit and the associated process shall be shut down immediately until the failed unit 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).

(b) For a single compartment baghouse controlling emissions from a batch process, the feed to the process shall be shut down immediately until the failed unit has been repaired or replaced. The emissions unit shall be shut down no later than the completion of the processing of the material in the line. 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).

Bag failure can be indicated by a significant drop in the baghouse's pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks, dust traces or triboflows.

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

D.6.12 Record Keeping Requirements

(a) To document compliance with Condition D.6.2(d), the Permittee shall maintain records of the binder usage in the three core mixers associated with the core making process identified as P47 each month.

(b) To document compliance with Condition D.6.2(e), the Permittee shall maintain records of the core production from the three core machines associated with the core making process identified as P47 each month.

(c) To document compliance with Condition D.6.8(a), the Permittee shall maintain records of the pressure drop and pH readings of the scrubber once per day. The Permittee shall include in its daily record when a reading is not taken and the reason for the lack of reading (e.g. the process did not operate that day).

(d) To document compliance with Condition D.6.8(b), the Permittee shall maintain records of the flow rate of the scrubber. The Permittee shall include in its daily record when a reading is not taken and the reason for the lack of reading (e.g. the process did not operate that day).

(e) To document compliance with Condition D.6.10, the Permittee shall maintain records of the pressure drop across the baghouse once per day. The Permittee shall include in its daily record when a pressure drop reading is not taken and the reason for the lack of pressure drop reading (e.g. the process did not operate that day).

(f) Section C - General Record Keeping Requirements, contains the Permittee's obligation with regard to the records required by this condition.

D.6.13 Reporting Requirements

A quarterly summary of the information to document compliance with Conditions D.6.2(d) and D.6.2(e) shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by the “responsible official” as defined by 326 IAC 2-7-1(34).

SECTION D.7 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Description

(a) Two (2) paint booths, one identified as P26A constructed in 2007 and modified in 2008, and one identified as P26B, approved for construction in 2008, used to coat metal castings for rust protection, using spray guns with a combined maximum capacity of sixteen (16) gallons per hour, using overspray filters for PM control, exhausting to stacks S26A and S26B, respectively

(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.7.1 PSD Minor Limit (PSD) [326 IAC 2-2] Volatile Organic Compound (VOC) [326 IAC 8-1-6]

(a) The VOC emissions from the paint booths P26A and P26B shall not exceed 1.4 pounds of VOC per gallon of paint used.

(b) The paint input to booths P26A and P26B shall not exceed 25,000 gallons of paint per twelve (12) consecutive month period.

Compliance with the above limits in addition to the limits in Condition D.4.2 (h) and (j) shall limit the VOC emissions for this modification to less than 40 tons per year and render the requirements of 326 IAC 2-2 not applicable. Compliance with this limit will also render the requirements of 326 IAC 8-1-6 not applicable to the paint booths.

D.7.2 Volatile Organic Compound (VOC) [326 IAC 8-2-9]

(a) Pursuant to 326 IAC 8-2-9, the Permittee shall not allow the discharge into the atmosphere VOC in excess of three (3.5) pounds of VOC per gallon of coating, excluding water, as delivered to the applicator.

(b) Pursuant to 326 IAC 8-2-9(f), all solvents sprayed from the application equipment of paint booth P26 during cleanup or color changes shall be directed into containers. Said containers shall be closed as soon as the solvent spraying is complete. In addition, all waste solvent shall be disposed of in such a manner that minimizes evaporation.

D.7.3 Particulate [326 IAC 6-3-2(d)]

Pursuant to 326 IAC 6-3-2(d), particulate from paint booths P26A and P26B shall be controlled by a dry particulate filter, and the Permittee shall operate the control device in accordance with manufacturer's specifications.

Compliance Determination Requirements

D.7.4 Volatile Organic Compounds

Compliance with the VOC limitations contained in Condition D.1.7 shall be determined pursuant to 326 IAC 8-1-4(a)(3) and 326 IAC 8-1-2(a) by preparing or obtaining from the manufacturer the copies of the "as supplied" and "as applied" VOC data sheets. IDEM, OAQ, reserves the authority to determine compliance using Method 24 in conjunction with the analytical procedures specified in 326 IAC 8-1-4.

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

D.7.5 Particulate Monitoring

(a) Daily inspections shall be performed to verify the placement, integrity and particle loading of the filters. To monitor the performance of the dry filters, weekly observations shall be made of the overspray from the surface coating booth stacks S26A and S26B while the booth is operation. If a condition exists which should result in a response step, the Permittee shall take reasonable response steps in accordance with Section C - Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances, shall be considered a deviation from this permit.

(b) Monthly inspections shall be performed of the coating emissions from the stack and the presence of overspray on the rooftops and nearby ground. When there is a noticeable change in overspray emissions, or when evidence of overspray emissions is observed, the Permittee shall take reasonable response steps in accordance with Section C - Response to Excursion or Exceedances. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances, shall be considered a deviation from this permit.

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

D.7.6 Record Keeping Requirements

(a) To document compliance with Conditions 7.1 and 7.2, the Permittee shall maintain records of the VOC content of each coating material and solvent used. Records shall include purchase orders, invoices, and material safety data sheets (MSDS) necessary to verify the type and amount used.

(b) To document compliance with Condition 7.1, the Permittee shall maintain a record of the amount of paint used per twelve consecutive month period.

(c) To document compliance with Condition D.7.2 and D.7.5, the Permittee shall maintain a log of weekly overspray observations, daily and monthly.

(d) Section C - General Record Keeping Requirements, contains the Permittee's obligation with regard to the records required by this condition.

D.7.7 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.7.1(b) shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by the “responsible official” as defined by 326 IAC 2-7-1(34).

SECTION D.8 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Description: Insignificant Activities

Degreasing operations that do not exceed 145 gallons per 12 months, except if subject to 326 IAC 20-6.[326 IAC 8-3-2] [326 IAC 8-3-5].

(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.8.1 Volatile Organic Compounds (VOC)

Pursuant to 326 IAC 8-3-2 (Cold Cleaner Operations), for cold cleaning operations constructed after January 1, 1980, the Permittee shall:

(a) Equip the cleaner with a cover;

(b) Equip the cleaner with a facility for draining cleaned parts;

(c) Close the degreaser cover whenever parts are not being handled in the cleaner;

(d) Drain cleaned parts for at least fifteen (15) seconds or until dripping ceases;

(e) Provide a permanent, conspicuous label summarizing the operation requirements;

(f) Store waste solvent only in covered containers and not dispose of waste solvent or transfer it to another party, in such a manner that greater than twenty percent (20%) of the waste solvent (by weight) can evaporate into the atmosphere.

D.8.2 Volatile Organic Compounds (VOC)

(a) Pursuant to 326 IAC 8-3-5(a) (Cold Cleaner Degreaser Operation and Control), for cold cleaner degreaser operations without remote solvent reservoirs constructed after July 1, 1990, the Permittee shall ensure that the following control equipment requirements are met:

(1) Equip the degreaser with a cover. The cover must be designed so that it can be easily operated with one (1) hand if:

(A) The solvent volatility is greater than two (2) kiloPascals (fifteen (15) millimeters of mercury or three-tenths (0.3) pounds per square inch) measured at thirty-eight degrees Celsius ($38^{O}C$) (one hundred degrees Fahrenheit ($100^{O}F$));

(B) The solvent is agitated; or

(C) The solvent is heated.

(2) Equip the degreaser with a facility for draining cleaned articles. If the solvent volatility is greater than four and three-tenths (4.3) kiloPascals (thirty-two (32) millimeters of mercury or six-tenths (0.6) pounds per square inch) measured at thirty-eight degrees Celsius ($38^{O}C$) (one hundred degrees Fahrenheit ($100^{O}F$)), then the drainage facility must be

internal such that articles are enclosed under the cover while draining. The drainage facility may be external for applications where an internal type cannot fit into the cleaning system.

(3) Provide a permanent, conspicuous label which lists the operating requirements outlined in subsection (b).

(4) The solvent spray, if used, must be a solid, fluid stream and shall be applied at a pressure which does not cause excessive splashing.

(5) Equip the degreaser with one (1) of the following control devices if the solvent volatility is greater than four and three-tenths (4.3) kiloPascals (thirty-two (32) millimeters of mercury or six-tenths (0.6) pounds per square inch) measured at thirty-eight degrees Celsius (38^{O}C) (one hundred degrees Fahrenheit (100^{O}F)), or if the solvent is heated to a temperature greater than forty-eight and nine-tenths degrees Celsius (48.9^{O}C) (one hundred twenty degrees Fahrenheit (120^{O}F)):

(A) A freeboard that attains a freeboard ratio of seventy-five hundredths (0.75) or greater.

(B) A water cover when solvent is used is insoluble in, and heavier than, water.

(C) Other systems of demonstrated equivalent control such as a refrigerated chiller of carbon adsorption. Such systems shall be submitted to the U.S. EPA as a SIP revision.

(b) Pursuant to 326 IAC 8-3-5(b) (Cold Cleaner Degreaser Operation and Control), for a cold cleaning facility construction of which commenced after July 1, 1990, the Permittee shall ensure that the following operating requirements are met:

(1) Close the cover whenever articles are not being handled in the degreaser.

(2) Drain cleaned articles for at least fifteen (15) seconds or until dripping ceases.

(3) Store waste solvent only in covered containers and prohibit the disposal or transfer of waste solvent in any manner in which greater than twenty percent (20%) of the waste solvent by weight could evaporate.

SECTION D.9 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description: [326 IAC 2-7-5(14)

(a) Two (2) autogrinder machines, to be constructed in 2012, identified as P87A, with a maximum capacity of 1.02 tons of castings per hour, each, with emissions voluntarily controlled by Baghouse C87A and exhausting into the building [326 IAC 6-3-2].

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

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

D.9.1 Particulate Emission Limitations for Manufacturing Processes [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2, the allowable particulate matter (PM) from the two (2) autogrinder machines identified as P87A shall not exceed 4.2 pounds per hour, each, when operating at a process weight rate of 1.02 tons per hour, each. This limit was calculated using the following equations:

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:

$E = 4.10 P^{0.67}$

Where:

E = rate of emission in pounds per hour and
P = process weight rate in tons per hour

D.9.2 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan (PMP) is required for this unit and its control device. Section B - Preventive Maintenance Plan contains the Permittee's obligations with regard to the preventive maintenance plan required by this condition.

SECTION E.1 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Description:

Under the Iron and Steel Foundry NESHAP (40 CFR 63, Subpart EEEEE), the following emission units are considered as part of an existing affected source.

Phase 1

(a) One (1) gray iron cupola, identified as P30, constructed in 1996, with a maximum melt rate of 100 tons per hour, using one (1) baghouse (C09A) for particulate control, one (1) incinerator (C11A) for carbon monoxide control and VOC emissions control, and one (1) dry alkaline injection system (C12A) for sulfur dioxide control, exhausting to stack S09;

(b) Four (4) production lines, each constructed in 1996, consisting of the following:

(1) Line 1 (modified in 1998 and approved for modification in 2007)

(A) One (1) pouring/mold cooling operation, identified as P01, with a maximum throughput of 38 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stacks S01 and S04;
(B) One (1) shakeout operation, identified as P02, with a maximum throughput of 38 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;
(C) One (1) cast cooling operation, identified as P03, with a maximum throughput of 27 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stacks S01 and S04;
(D) One (1) pick & sort operation, identified as P04, with a maximum throughput of 38 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;
(E) One (1) cleaning & grinding operation, identified as P05, with a maximum throughput of 27 tons per hour, using a mechanical blaster, using one (1) baghouse (C07) for particulate control, exhausting to stack S07;

(2) Line 2

(A) One (1) pouring/mold cooling operation, identified as P06, with a maximum throughput of 17 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;
(B) One (1) shakeout operation, identified as P07, with a maximum throughput of 17 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;
(C) One (1) cast cooling operation, identified as P08, with a maximum throughput of 17 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;
(D) One (1) pick & sort operation, identified as P09, with a maximum throughput of 17 tons per hour, using one (1) baghouse (C07) for particulate control, exhausting to stack S07;
(E) One (1) cleaning & grinding operation, identified as P10, with a maximum throughput of 17 tons per hour, using a mechanical blaster, using one (1) baghouse (C07) for particulate control, exhausting to stack S07;

(3) Line 3
- (A) One (1) pouring/mold cooling operation, identified as P11, with a maximum throughput of 17 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;
- (B) One (1) shakeout operation, identified as P12, with a maximum throughput of 17 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;
- (C) One (1) cast cooling operation, identified as P13, with a maximum throughput of 17 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;
- (D) One (1) pick & sort operation, identified as P14, with a maximum throughput of 17 tons per hour, using one (1) baghouse (C07) for particulate control, exhausting to stack S07;
- (E) One (1) cleaning & grinding operation, identified as P15, with a maximum throughput of 17 tons per hour, using a mechanical blaster, using one (1) baghouse (C07) for particulate control, exhausting to stack S07;

(4) Line 4
- (A) One (1) pouring/mold cooling operation, identified as P16, with a maximum throughput of 40 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;
- (B) One (1) shakeout operation, identified as P17, with a maximum throughput of 40 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;
- (C) One (1) cast cooling operation, identified as P18, with a maximum throughput of 40 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;
- (D) One (1) pick & sort operation, identified as P19, with a maximum throughput of 40 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;
- (E) One (1) cleaning & grinding operation, identified as P20, with a maximum throughput of 40 tons per hour, using a mechanical blaster, using one (1) baghouse (C07) for particulate control, exhausting to stack S07;

(c) Sand handling operations and ancillary operations, each constructed in 1996, consisting of the following:
- (1) One (1) return sand handling & screen operation, identified as P21, with a maximum throughput of 522 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;
- (2) One (1) sand cooling & water addition operation, identified as P22, with a maximum throughput of 522 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;
- (3) One (1) sand mulling & handling operation, identified as P23, with a maximum throughput of 522 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;
- (4) One (1) spent sand handling & processing operation, identified as P24, with a maximum throughput of 54 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;
- (5) Air make-up units, identified as P52, with a maximum combined heat input capacity of 65.6 million British thermal units (MMBtu) per hour, combusting natural gas, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;

(6) One (1) metallic returns handling operation, identified as P25, with a maximum throughput of 33 tons per hour, using one(1) baghouse (C07) for particulate control, exhausting to stack S07;

(7) One (1) core sand handling operation, identified as P40, with a maximum throughput of

16 tons per hour, using one (1) baghouse (C08) for particulate control, exhausting to stack S08;

(8) One (1) core manufacturing operation, identified as P41, with a maximum throughput of 16 tons per hour, exhausting to stack S11;

(9) One (1) core machine & oven operation, identified as P51, with a maximum heat input capacity of 16.8 MMBtu per hour, combusting natural gas, exhausting to stack S11;

(10) One (1) ladle preheating operation, identified as P53, with a maximum heat input capacity of 11.5 MMBtu per hour, combusting natural gas, exhausting to stack S12;

(11) One (1) ladle filling & iron transport operation, identified as P85, with a maximum throughput of 80 tons per hour, using one (1) baghouse (C44) for particulate control, exhausting to stack S44;

(12) One (1) ladle filling & iron transport operation, identified as P85, with a maximum throughput of 100 tons per hour;

(13) One (1) Phase 1 Melt Area Ladle Cleaning, identified as P86, with a maximum capacity of 100 pounds of burn bars per hour based on a 24-hour average, using one (1) baghouse (C44) as control, and exhausting to stack S44;

(14) One (1) Line 1 ladle cleaning operation, identified as P86A, approved for modification in 2013, with a maximum capacity of 100 pounds of burn bars per hour based on a 24-hour average, using Baghouses C01, C02, and C03 as control, and exhausting to stack S01;

(15) One (1) Line 2 ladle cleaning operation, with a maximum capacity of 100 pounds of burn bars per hour based on a 24-hour average, using no control, and exhausting inside the building;

(16) One (1) Line 3 ladle cleaning operation, with a maximum capacity of 100 pounds of burn bars per hour based on a 24-hour average, using no control, and exhausting inside the building;

(17) One (1) Line 4 ladle cleaning operation, identified as P86B, approved for modification in 2013, with a maximum capacity of 100 pounds of burn bars per hour based on a 24-hour average, using Baghouses C01, C02, and C03 as control, and exhausting to stack S01;

(18) One (1) 16 ton iron bath desulfurization ladle operation, constructed in 2010, identified as P34, with a maximum throughput of 100 tons per hour, using one (1) baghouse (C44) for particulate matter control and exhausting through stack S44.

Phase II

(a) One (1) cupola iron melting system, identified as P33, constructed in 1998, with a maximum melt rate of 100 tons of iron per hour. VOC and CO emissions are controlled by one (1) recuperative incinerator, identified as C11B. Sulfur dioxide emissions are controlled by one (1) lime injection system (or equivalent), identified as C12B Particulate matter emissions are controlled by one (1) baghouse system, identified as C09B. The gases are then exhausted to stack S09;

(b) Four (4) production lines, each constructed in 1998, consisting of the following:

(1) Line 5

(A) One (1) pouring/mold cooling operation, identified as P60, with a maximum production capacity of 28 tons per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C15. The gases are then exhausted to Stack S15;

(B) One (1) shakeout operation, identified as P61, with a maximum throughout capacity of 28 tons per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C15, that exhaust to Stack S15 or by one (1) baghouse system, identified as C16, that exhaust to Stack S16;

(C) One (1) cast cooling operation, identified as P62, with a maximum capacity of 28 tons per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C15. The gases are then exhausted to Stack S15.

(D) One (1) pick and sort operation, identified as P63, with a maximum throughput capacity of 28 tons per hour. Particulate matter emissions are controlled by one

(1) baghouse system, identified as C16. The gases are then exhausted to Stack S16;

(E) One (1) cleaning and grinding operation, identified as P64, with a maximum throughput capacity of 28 tons per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C16. The gases are then exhausted to Stack S16;

(2) Line 6

(A) One (1) pouring/mold cooling operation, identified as P65, with a maximum production capacity of 20 tons per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C15. The gases are then exhausted to Stack S15;

(B) One (1) shakeout operation, identified as P66, with a maximum throughput capacity of 20 tons per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C15, that exhaust to Stack S15 or by one (1) baghouse system, identified as C16, that exhaust to Stack S16;

(C) One (1) cast cooling operation, identified as P67, with a maximum capacity of 20 tons per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C15, that exhaust to Stack S15 or by one (1) baghouse system, identified as C16, that exhaust to Stack S16;

(D) One (1) pick and sort operation, identified as P68, with a maximum throughput capacity of 20 tons per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C16. The gases are then exhausted to Stack S16;

(E) One (1) cleaning and grinding operation, identified as P69, with a maximum throughput capacity of 20 tons per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C16. The gases are then exhausted to Stack S16;

(3) Line 7

(A) One (1) pouring/mold cooling operation, identified as P70, with a maximum production capacity of 33 tons per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C15. The gases are then exhausted to Stack S15;

(B) One (1) shakeout operation, identified as P71, with a maximum production capacity of 33 tons per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C15, that exhaust to Stack S15 or by one (1) baghouse system, identified as C16, that exhaust to Stack S16;

(C) One (1)cast cooling operation, identified as P72, with a maximum production capacity of 33 tons per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C15, that exhaust to Stack S15 or by one (1) baghouse system, identified as C16, that exhaust to Stack S16;

(D) One (1) pick and sort operation, identified as P73, with a maximum throughput capacity of 33 tons per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C16. The gases are then exhausted to Stack S16;

(E) One (1) cleaning and grinding operation, identified as P74, with a maximum throughput capacity of 33 tons per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C16. The gases are then exhausted to Stack S16;

(4) Line 8

(A) One (1) pouring/mold cooling operation, identified as P75, with a maximum production capacity of 20 tons per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C15. The gases are then exhausted to Stack S15;

(B) One (1) shakeout operation, identified as P76, with a maximum throughput capacity of 20 tons per hour. Particulate matter emissions are controlled by one (1) baghouse system,

identified as C16. The gases are then exhausted to Stack S16;

(C) One (1) cast cooling operation, identified as P77, with a maximum capacity of 20 tons per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C16. The gases are then exhausted to Stack S16;

(D) One (1) pick and sort operation, identified as P78, with a maximum throughput capacity of 20 tons per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C16. The gases are then exhausted to Stack S16; and

(E) One (1) cleaning and grinding operation, identified as P79, with a maximum throughput capacity of 20 tons per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C16. The gases are then exhausted to Stack S16.

(c) Sand handling operations and ancillary operations, each constructed in 1998, modified in 2010 consisting of the following:

(1) One (1) return sand handling and screening operation, identified as P80, with a maximum throughput capacity of 660 tons of sand per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C15, that exhaust to Stack S15 or by one (1) baghouse system, identified as C16, that exhaust to Stack S16;

(2) One (1) sand mulling and handling operation, identified as P81, with a maximum capacity of 660 tons of sand per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C15. The gases are then exhausted to Stack S15;

(3) One (1) sand blending and cooling operation, identified as P82, with a maximum capacity of 660 tons of sand per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C15. The gases are then exhausted to Stack S15;

(4) One (1) spent sand and dust handling operation, identified as P83, with a maximum throughput capacity of 55 tons of sand per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C15. The gases are then exhausted to Stack S15;

(5) One (1) metal returns handling operation, identified as P84, with a maximum capacity of 50 tons per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C15, that exhaust to Stack S15 or by one (1) baghouse system, identified as C16, that exhaust to Stack S16;

(6) One (1) enclosed cupola charge make-up and handling unit with a maximum charge of 114 tons per hour;

(7) One (1) ladle filling and iron transport operation with a maximum capacity of 188 tons of iron per hour;

(8) One (1) Phase 2 Melt Area Ladle Cleaning, identified as P86, with a maximum capacity of 100 pounds of burn bars per hour based on a 24-hour average, using one (1) baghouse (C44) as control, and exhausting to stack S44;

(9) One (1) Line 5 ladle cleaning operation, with a maximum capacity of 100 pounds of burn bars per hour based on a 24-hour average, using no control, and exhausting inside the building;

(10) One (1) Line 6 ladle cleaning operation, with a maximum capacity of 100 pounds of burn bars per hour based on a 24-hour average, using no control, and exhausting inside the building;

(11) One (1) Line 7 ladle cleaning operation, with a maximum capacity of 100 pounds of burn bars per hour based on a 24-hour average, using no control, and exhausting inside the building;

(12) One (1) Line 8 ladle cleaning operation, with a maximum capacity of 100 pounds of burn bars per hour based on a 24-hour average, using no control, and exhausting inside the building;

(13) One (1) Phase 2 Ductile Iron Treatment Ladle Cleaning, with a maximum capacity of 100 pounds of burn bars per hour based on a 24-hour average, with approximately 25% of emissions controlled by Baghouse C15, and exhausting to stack S15, and with approximately 75% emissions uncontrolled, and exhausting inside the building;
Note: The ductile treatment operation includes locations where treatment occurs and

iron is transferred. Fumes in the treatment area are captured by Baghouse C15 but those in the metal transfer area are not captured.

(14) Two (2) ductile iron treatment stations, both identified as P35, each with a maximum production capacity of 50 tons per hour. Particulate matter emissions are controlled by two (2) baghouse systems identified as C15 and C35. The gases from both baghouses are then exhausted to Stack S15;

(15) One (1) phenolic-urethane core sand handling system, identified as P42, constructed in 1998 and modified in 2008, with a maximum production capacity of 32 tons of cores per hour. Particulate matter emissions are controlled by one (1) baghouse system, identified as C08, that exhausts to Stack S08;

(16) One (1) phenolic-urethane core making process, identified as P43, with a maximum production capacity of 20 tons of cores per hour. Volatile organic compound emissions are controlled by one (1) packed bed scrubber (or equivalent), identified as C14. The gases are then exhausted to Stack S14;

(17) One (1) phenolic-urethane core making process, identified as P44, consisting of 2 mixers and 2 core machines, each with a maximum capacity of 3 tons per hour. DMIPA emissions are controlled by one (1) packed bed scrubber, identified as C14. The gases are then exhausted to Stack S14;

(18) Raw material handling including iron handling at a maximum rate of 150 tons per hour, alloys handling at a maximum rate of 1.5 tons per hour, coke handling at a maximum rate of 15 tons per hour, and limestone handling at a maximum rate of 4.5 tons per hour;

(19) Natural gas fired air make-up units equipped with low-NOx burners, identified as P54, with a maximum heat input rate of 80 MMBtu per hour exhausting to Stack S15.

(20) One (1) pattern shop, identified as P50, controlled by a baghouse, exhausting to stack S08.

Core Room Expansion

(a) One (1) phenolic-urethane core sand handling system, identified as P46, constructed in 2005 and modified in 2008, with a maximum production capacity of 51 tons of cores per hour. Particulate matter emissions are controlled by one (1) baghouse, identified as C18, exhausting inside the building;

(b) One (1) phenolic-urethane core making process, identified as P47, to begin construction in 2005, consisting of 3 mixers and 3 core machines, each with a maximum capacity of 15 tons per hour. DMIPA catalyst emissions are controlled by one (1) packed bed m scrubber, identified as C17. The gases are then exhausted to Stack S17.

National Emission Standards for Hazardous Air Pollutants (NESHAP) Requirements [326 IAC 2-7-5(1)]

E.1.1 General Provisions Relating to NESHAP Subpart EEEEE (National Emission Standards for Hazardous Air Pollutants for Iron and Steel Foundries [326 IAC 20-1] [40 CFR Part 63, Subpart A]

(a) Pursuant to 40 CFR 63.3901, the Permittee shall comply with the provisions of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated by reference as 326 IAC 20-1-1 as specified in Table 2 of 40 CFR Part 63, Subpart EEEEE in accordance with schedule in 40 CFR 63 Subpart EEEEE.

(b) Pursuant to 40 CFR 63.10, the Permittee shall submit all required notifications and reports to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

and

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

E.1.2 NESHAP Subpart EEEEE Requirements [40 CFR 63, Subpart EEEEE]

Pursuant to 40 CFR 63, Subpart EEEEE, the Permittee shall comply with the provisions of 40 CFR Part 63, Subpart EEEEE, beginning April 23, 2007, as follows:

(1) 40 CFR 63.7680
(2) 40 CFR 63.7681
(3) 40 CFR 63.7682 (a)-(c)
(4) 40 CFR 63.7683 (a) (b) and (f)
(5) 40 CFR 63.7690 (a)(2), (a)(8), (b)(1), (b)(3) (5), (7)
(6) 40 CFR 63.7700 (a)-(c), (d)
(7) 40 CFR 63.7710 (a)-(b) (1), (b)(2)(3)-(6)
(8) 40 CFR 63.7720 (a)-(c)
(9) 40 CFR 63.7730 (a)-(b)
(10) 40 CFR 63.7731 (a)-(b)
(11) 40 CFR 63.7732 (a); (b)(1), (b)(3) (2), (c) (1),(2),(3),(d),(e)
(12) 40 CFR 63.7732 (f) and (h)
(13) 40 CFR 63.7733 (a), (f)
(14) 40 CFR 63.7734 (a),(2),(5), (7), (8), (b)(1)
(15) 40 CFR 63.7735 (a),(b)
(16) 40 CFR 63.7736 (a), (b), (c) and (d)
(17) 40 CFR 63.7740 (a), (b) and (e)
(18) 40 CFR 63.7741 (a), (b), (d) and (f)
(19) 40 CFR 63.7742 (a)-(c)
(20) 40 CFR 63.7743(a)(2),(5), (7), (8), (12), (b), (c) and (e)
(21) 40 CFR 63.7744 (a) and (b)
(22) 40 CFR 63.7745 (a) and (b)
(23) 40 CFR 63.7746 (a) and (b)
(24) 40 CFR 63.7747 (a)-(d)
(25) 40 CFR 63.7750 (a),(b),(d), and (e)
(26) 40 CFR 63.7751 (a)-(d)
(27) 40 CFR 63.7752 (a)-(c)
(28) 40 CFR 63.7753 (a)-(c)
(29) 40 CFR 63.7760
(30) 40 CFR 63.7761
(31) 40 CFR 63.7765
(32) Appendix - Table 1 to Subpart EEEEE of Part 63

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
PART 70 OPERATING PERMIT
CERTIFICATION

Source Name: Waupaca Foundry, Inc Plant 5
Source Address: 9856 State Highway 66, Tell City, Indiana 47586
Part 70 Permit No.: T123-27047-00019

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

Please check what document is being certified:

☐ Annual Compliance Certification Letter

☐ Test Result (specify)

☐ Report (specify)

☐ Notification (specify)

☐ Affidavit (specify)

☐ Other (specify)

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

Signature:
Printed Name:
Title/Position:
Phone:
Date:

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY

COMPLIANCE BRANCH
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251
Phone: (317) 233-0178
Fax: (317) 233-6865

PART 70 OPERATING PERMIT
EMERGENCY OCCURRENCE REPORT

Source Name: Waupaca Foundry, Inc Plant 5
Source Address: 9856 State Highway 66, Tell City, Indiana 47586
Part 70 Permit No.: T123-27047-00019

This form consists of 2 pages **Page 1 of 2**

□ This is an emergency as defined in 326 IAC 2-7-1(12)

- The Permittee must notify the Office of Air Quality (OAQ), no later than four (**4**) daytime business hours (1-800-451-6027 or 317-233-0178, ask for Compliance Section); and
- The Permittee must submit notice in writing or by facsimile no later than two (**2**) working days (Facsimile Number: 317-233-6865), and follow the other requirements of 326 IAC 2-7-16.

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

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

If any of the following are not applicable, mark N/A **Page 2 of 2**

Date/Time Emergency started:
Date/Time Emergency was corrected:
Was the facility being properly operated at the time of the emergency? Y N
Type of Pollutants Emitted: TSP, PM-10, SO_2, VOC, NO_X, CO, Pb, other:
Estimated amount of pollutant(s) emitted during emergency:
Describe the steps taken to mitigate the problem:
Describe the corrective actions/response steps taken:
Describe the measures taken to minimize emissions:
If applicable, describe the reasons why continued operation of the facilities are necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw materials of substantial economic value:

Form Completed by:_____

Title / Position: _____

Date:_____

Phone: _____

A certification is not required for this report.

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

Part 70 Quarterly Report

Source Name: Waupaca Foundry, Inc. Plant 5
Source Address: 9856 State Highway 66, Tell City, IN 47586
Part 70 Permit No.: T123-9234-00019
Facility: core mixers identified as P44
Parameter: binder usage
Limit: 390 tons of binder per 12 consecutive month period

YEAR:

Month	Column 1	Column 2	Column 1 + Column 2
	Binder Usage This Month (tons)	Binder Usage Previous 11 Months (tons)	Binder Usage 12 Month Total (tons)
Month 1			
Month 2			
Month 3			

☐ No deviation occurred in this quarter.

☐ Deviation/s occurred in this quarter.

Deviation has been reported on:

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

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

Part 70 Quarterly Report

Source Name: Waupaca Foundry, Inc. Plant 5
Source Address: 9856 State Highway 66, Tell City, IN 47586
Part 70 Permit No.: T123-9234-00019
Facility: two core machines, identified as P44
Parameter: core production
Limit: 26,000 tons of cores per 12 consecutive month period

YEAR:

Month	Column 1	Column 2	Column 1 + Column 2
	Cores Produced This Month (tons)	Cores Produced Previous 11 Months (tons)	12 Month Total Cores Produced (tons)
Month 1			
Month 2			
Month 3			

☐ No deviation occurred in this quarter.

☐ Deviation/s occurred in this quarter.

Deviation has been reported on:

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

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

Part 70 Quarterly Report

Source Name: Waupaca Foundry, Inc. Plant 5
Source Address: 9856 State Highway 66, Tell City, IN 47586
Part 70 Permit No.: T123-9234-00019
Facility: Three (3) core sand mixers identified as P47
Parameter: binder usage
Limit: The amount of binder used in all three (3) mixers, identified as P47, combined shall not exceed 5,910,000 pounds per 12 consecutive month period, with compliance determined at the end of each month.

YEAR:

Month	Column 1	Column 2	Column 1 + Column 2
	Binder Usage This Month (pounds)	Binder Usage Previous 11 Months (pounds)	12 Month Total Binder Usage (pounds)
Month 1			
Month 2			
Month 3			

☐ No deviation occurred in this quarter.

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

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

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

Part 70 Quarterly Report

Source Name: Waupaca Foundry, Inc. Plant 5
Source Address: 9856 State Highway 66, Tell City, IN 47586
Part 70 Permit No.: T123-9234-00019
Facility: Three (3) core machines identified as P47
Parameter: core production
Limit: The amount of cores produced by all three (3) core machines, identified as P47, combined shall not exceed 197,000 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
	Cores Produced This Month (tons)	Cores Produced Previous 11 Months (tons)	12 Month Total Cores Produced (tons)
Month 1			
Month 2			
Month 3			

☐ No deviation occurred in this quarter.

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

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

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

Part 70 Quarterly Report

Source Name: Waupaca Foundry, Inc. Plant 5
Source Address: 9856 State Highway 66, Tell City, IN 47586
Part 70 Permit No.: T123-9234-00019
Facility: Paint Booths identified as P26A and P26B
Parameter: VOC emissions
Limit: The total paint input from Paint Booths P26A and P26B shall not exceed 25,000 gallons per consecutive 12 month period with compliance determined at the end of each month.

YEAR:

Month	Column 1	Column 2	Column 1 + Column 2
	Paint Input This Month (gallons)	Paint Input Previous 11 Months (gallons)	12 Month Total of Paint Input (gallons)
Month 1			
Month 2			
Month 3			

☐ No deviation occurred in this quarter.

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

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

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION
PART 70 OPERATING PERMIT
QUARTERLY DEVIATION AND COMPLIANCE MONITORING REPORT

Source Name: Waupaca Foundry, Inc Plant 5
Source Address: 9856 State Highway 66, Tell City, Indiana 47586
Part 70 Permit No.: T123-27047-00019

Months: _____ to _ Year: _____

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

□ NO DEVIATIONS OCCURRED THIS REPORTING PERIOD.

□ THE FOLLOWING DEVIATIONS OCCURRED THIS REPORTING PERIOD

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

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

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

Form Completed by:_____

Title / Position: _____

Date:_____

Phone: _____

Waupaca Foundry, Inc.
Plant 5
Fugitive Dust Control Plan
January 2008

Facility map layout

Waupaca Foundry, Inc. Plant 5
Fugitive Dust Control Plan
January 2008
Page 1 of 2

Introduction
The following serves as the Fugitive Dust Control Plan for Waupaca Foundry, Inc. Plant 5, as required by permit conditions and 326 IAC 6-5-1. The plan identifies areas or activities at Plant 5 that have the potential to create fugitive dust. The plan contents include those specified in 326 IAC 6-5-5.

Source Location
Waupaca Foundry, Inc., Plant 5
9856 State Road 66
Tell City, IN 47586

Operator
Waupaca Foundry, Inc., Plant 5
9856 State Road 66
Tell City, IN 47586

Potential Sources/Areas of Fugitive Dust
West side paved drive
Charge yard area paved drive
Phase I pelletizer building area
Phase II pelletizer building area
Phase I returns conveyor
Phase II returns conveyor
General paved areas
Brown field areas
Phase I commodities handling
Phase II commodities handling
Commodity piles
Laydown areas

Control Plan
Attachment A contains the written plan for each identified area. Attachment B contains the map showing the location of each of the areas or processes identified. The plan contains a description of the source, the number of vehicles or quantity of material handled, equipment used, control measures presently used, control measures proposed and the implementation schedule for any proposed control measures.

Waupaca Foundry, Inc. Plant 5
Fugitive Dust Control Plan
January 2008
Page 2 of 2

Performance Assessment
The performance of each control measure will be evaluated on a bi-monthly basis. The evaluations will be done as part of the housekeeping audit program. The audit results are discussed semi-annual at the Management Review Meeting with department heads. Modifications or adjustments to the Dust Control Plan will be made as necessary, based upon the findings of the performance assessment.

Records
All records or documents generated, as part of the Dust Control Program will be kept for a minimum of 3 years. The Environmental Department will maintain the records.

Statement of Commitment
Waupaca Foundry, Inc Plant 5 is committed to preventing the release of fugitive dust to the environment and agrees to provide the necessary resources, manpower and equipment to ensure the implementation and completeness of the above-mentioned Fugitive Dust Control Plan.

_____ _____
Philip J. Brickey, Date
Plant Manager
Waupaca Foundry, Inc., Plant 5

Waupaca Foundry, Inc. Plant 5
Fugitive Dust Control Plan

Source	West Side Paved Drive	Paved Areas Around Charge Yard
Source Description	This is a paved drive on the west side of the facility. The drive hosts waste hauling trucks and some traffic going to and from the shipping docks.	This is the paved surface between the building and the charge yard as well the apron approach to the Phase I and Phase II charge yards.
Map Identification	Area 1	Area 2
Quantity of Material or Volume of Traffic	25 trucks per day	50 trucks per day
Equipment Used to Maintain	Sweeper	Sweeper
Present Control	Sweeping schedule	Sweeping schedule
Proposed Control	Continue as noted	N/A
Control Frequency	Sweeping of paved areas will be done a weekly and as needed basis.	Sweeping will be done a weekly and as needed basis.
Implementation Schedule	The paved area is currently in the sweeping schedule.	The area is currently in the sweeping schedule.

Waupaca Foundry, Inc. Plant 5
Fugitive Dust Control Plan

Source	Phase I Pelletizer Building	Phase II Pelletizer Building
Source Description	The pelletizer building houses dust conditioning operations. The dust from the phase I production areas and cupola baghouses is transported to the annex for water conditioning with paddle mixers. During periods of excess system sand purging from the sand system there are weather conditions that cause system sand dust to migrate out the immediate door openings.	The pelletizer building houses dust conditioning operations. The dust from the phase II production area baghouses is transported to the annex for water conditioning with a paddle mixer. During periods of excess system sand purging from the sand system there are weather conditions that cause system sand dust to migrate out the immediate door openings.
Map Identification	Area 3	Area 4
Quantity of Material or Volume of Traffic	150 tons per day	100 tons per day
Equipment Used to Maintain	Sweeper	Sweeper
Present Control	Water spray for dust control on wheels Sweep adjacent to building. Follow procedure for the pelletizer operations	Water spray for dust control on wheels Sweep adjacent to building Follow procedure for the pelletizer operations.
Proposed Control	Dust suppression application for system sand.	Dust suppression application for system sand.
Control Frequency	Sweeping schedule is once a week and as needed	Sweeping schedule is once a week and as needed
Implementation Schedule	Dust suppression system installation to be completed by year-end.	Dust suppression system installation to be completed by year-end.

Waupaca Foundry, Inc. Plant 5
Fugitive Dust Control Plan

Source	Phase I returns conveyor	Phase II returns conveyor
Source Description	Returns include gating and risers from the casting operation. The returns are reused in the melt operation and are transported back to the charge yard from the plant. The returns tend to have residual sand adhering to the iron and have the potential to create dust when the returns fall to the ground. The sand also creates the potential for dust in the charging operation and for traffic in the area.	Returns include gating and risers from the casting operation. The returns are reused in the melt operation and are transported back to the charge yard from the plant. The returns tend to have residual sand adhering to the iron and have the potential to create dust when the returns fall to the ground. The sand also creates the potential for dust in the charging operation and for traffic in the area.
Map Identification	Area 5	Area 6
Quantity of Material or Volume of Traffic	300 - 400 tons per day	300 - 400 tons per day
Equipment Used to Maintain	Baghouse, Sweeper	Baghouse, Sweeper
Present Control	Baghouse, Sweeper	Baghouse, Sweeper
Proposed Control	Continuous cleaning drum to mechanically remove excess sand before the gating leaves the plant**.** Baghouse connection to Stack 10, Sweeping and cleaning of spillage between melt and building	Continuous cleaning drum to mechanically remove excess sand before the gating leaves the plant**.** Baghouse connection to Stack 10, Sweeping and cleaning of spillage between melt and building
Control frequency	Dust collection is on-line continuous Sweeping schedule is once a week and as needed	Dust collection is on-line continuous Sweeping schedule is once a week and as needed
Implementation Schedule	Complete	Complete

Waupaca Foundry, Inc. Plant 5
Fugitive Dust Control Plan

Source	General Paved Areas	Brown Space
Source Description	Existing paved roads around the facility.	There are certain areas around the property that are bare soil. These areas do not maintain any traffic or other activities. There is a potential for dust during dry and windy periods.
Map Identification	Area 7	Area 8A – Area by truck scales Area 8B – Area by natural gas incoming
Quantity of Material or Volume of Traffic	100 trucks per day	Not Applicable
Equipment Used to Maintain	Sweeper	Not Applicable
Present Control	Sweeper service	Vegetated
Proposed Control	This appears to be effective.	Maintain a lawn or other vegetation
Control Frequency	Sweep weekly or as needed.	Permanent.
Implementation Schedule	Complete and on-going	Complete

Waupaca Foundry, Inc. Plant 5
Fugitive Dust Control Plan

Source	Phase I Commodities	Phase II Commodities
Source Description	Bulk commodities used in the cupola melting operation include coke, limestone, silicon carbide, and other alloys. The commodities are delivered to a pit area via rail or truck where they are unloaded to a bin feed system which conveys the material to its respective holding bin adjacent to the charge yard. From the holding bins it is fed into the charge bucket situated in a tunnel below through a series of vibratory conveyors.	Bulk commodities used in the cupola melting operation include coke, limestone, silicon carbide, and other alloys. The commodities are delivered to a pit area via rail or truck where they are unloaded to a bin feed system which conveys the material to its respective holding bin adjacent to the charge yard. From the holding bins it is fed into the charge bucket situated in a tunnel below through a series of vibratory conveyors.
Map Identification	Area 9	Area 10
Quantity of Material or Volume of Traffic	200 -300 tons per day	200 -300 tons per day
Equipment Used to Maintain	None	None
Present Control	None	None
Proposed Control	Further evaluation and testing for need, control options will be reviewed. Performance of the system sand dust suppression application will be measured for feasibility for this project also.	Further evaluation and testing for need, control options will be reviewed. Performance of the system sand dust suppression application will be measured for feasibility for this project also.

Waupaca Foundry, Inc. Plant 5
Fugitive Dust Control Plan

Source	Excess Commodity Piles	
Source Description	The excess commodity piles are located to the east of the charge yard. The piles consist of coke, limestone, coke fines and other alloys that are used as back up or for start-up of either the Phase I or II cupola.	
Map Identification	Area 11	
Quantity of Material or Volume of Traffic	60 tons per pile	
Equipment Used to Maintain	Front end loader	
Present Control	Sweeping and housekeeping activities	
Control Frequency	Sweep weekly or as needed.	Permanent.
Implementation Schedule	Complete and on-going	Complete

Waupaca Foundry, Inc. Plant 5
Fugitive Dust Control Plan

Source	Laydown yards
Source Description	The laydown yards are areas located on the facility that are paved. They receive minimal traffic from forktrucks and some heavy trucks staging trailers.
Map Identification	Area 12A – located on west side Area 12B – located on north end
Quantity of Material or Volume of Traffic	20 trucks per day
Equipment Used to Maintain	Sweeper
Present Control	Sweep as necessary
Proposed Control	N/A
Control Frequency	Sweep as necessary
Implementation Schedule	N/A

Attachment A
to a Part 70 Operating Permit Renewal

40 CFR 63, Subpart EEEEE—National Emission Standards for Hazardous Air Pollutants for Iron and Steel Foundries

Source Name:	Waupaca Foundry, Inc. Plant 5
Source Location:	9856 State Highway 66, Tell City, Indiana 47586
County:	Perry
SIC Code:	3321
Part 70 Operating Permit Renewal:	123-27047-00019
Permit Reviewer:	Josiah Balogun

Source: 69 FR 21923, Apr. 22, 2004, unless otherwise noted.

What this Subpart Covers

§ 63.7680 What is the purpose of this subpart?

This subpart establishes national emission standards for hazardous air pollutants (NESHAP) for iron and steel foundries. This subpart also establishes requirements to demonstrate initial and continuous compliance with the emissions limitations, work practice standards, and operation and maintenance requirements in this subpart.

§ 63.7681 Am I subject to this subpart?

You are subject to this subpart if you own or operate an iron and steel foundry that is (or is part of) a major source of hazardous air pollutant (HAP) emissions. Your iron and steel foundry is a major source of HAP for purposes of this subpart if it emits or has the potential to emit any single HAP at a rate of 10 tons or more per year or any combination of HAP at a rate of 25 tons or more per year or if it is located at a facility that emits or has the potential to emit any single HAP at a rate of 10 tons or more per year or any combination of HAP at a rate of 25 tons or more per year as defined in §63.2.

[69 FR 21923, Apr. 22, 2004, as amended at 73 FR 7218, February 7, 2008]

§ 63.7682 What parts of my foundry does this subpart cover?

(a) The affected source is each new or existing iron and steel foundry.

(b) This subpart covers emissions from metal melting furnaces, scrap preheaters, pouring areas, pouring stations, automated conveyor and pallet cooling lines, automated shakeout lines, and mold and core making lines. This subpart also covers fugitive emissions from foundry operations.

(c) An affected source is existing if you commenced construction or reconstruction of the affected source before December 23, 2002.

(d) An affected source is new if you commenced construction or reconstruction of the affected source on or after December 23, 2002. An affected source is reconstructed if it meets the definition of “reconstruction” in §63.2.

§ 63.7683 When do I have to comply with this subpart?

(a) Except as specified in paragraph (b) of this section, if you have an existing affected source, you must comply with each emissions limitation, work practice standard, and operation and maintenance requirement in this subpart that applies to you no later than April 23, 2007. Major source status for existing affected sources must be determined no later than April 23, 2007.

(b) If you have an existing affected source, you must comply with the work practice standards in §63.7700(b) or (c), as applicable, no later than April 22, 2005.

(c) If you have a new affected source for which the initial startup date is on or before April 22, 2004, you must comply with each emissions limitation, work practice standard, and operation and maintenance requirement in this subpart that applies to you by April 22, 2004.

(d) If you have a new affected source for which the initial startup date is after April 22, 2004, you must comply with each emissions limitation, work practice standard, and operation and maintenance requirement in this subpart that applies to you upon initial startup.

(e) If your iron and steel foundry is an area source that becomes a major source of HAP, you must meet the requirements of §63.6(c)(5).

(f) You must meet the notification and schedule requirements in §63.7750. Note that several of these notifications must be submitted before the compliance date for your affected source.

Emissions Limitations

§ 63.7690 What emissions limitations must I meet?

(a) You must meet the emissions limits or standards in paragraphs (a)(1) through (11) of this section that apply to you. When alternative emissions limitations are provided for a given emissions source, you are not restricted in the selection of which applicable alternative emissions limitation is used to demonstrate compliance.

(1) For each electric arc metal melting furnace, electric induction metal melting furnace, or scrap preheater at an existing iron and steel foundry, you must not discharge emissions through a conveyance to the atmosphere that exceed either the limit for particulate matter (PM) in paragraph (a)(1)(i) of this section or, alternatively the limit for total metal HAP in paragraph (a)(1)(ii) of this section:

(i) 0.005 grains of PM per dry standard cubic foot (gr/dscf), or

(ii) 0.0004 gr/dscf of total metal HAP.

(2) For each cupola metal melting furnace at an existing iron and steel foundry, you must not discharge emissions through a conveyance to the atmosphere that exceed either the limit for PM in paragraph (a)(2)(i) or (ii) of this section or, alternatively the limit for total metal HAP in paragraph (a)(2)(iii) or (iv) of this section:

(i) 0.006 gr/dscf of PM; or

(ii) 0.10 pound of PM per ton (lb/ton) of metal charged, or

(iii) 0.0005 gr/dscf of total metal HAP; or

(iv) 0.008 pound of total metal HAP per ton (lb/ton) of metal charged.

(3) For each cupola metal melting furnace or electric arc metal melting furnace at a new iron and steel foundry, you must not discharge emissions through a conveyance to the atmosphere that exceed either the limit for PM in paragraph (a)(3)(i) of this section or, alternatively the limit for total metal HAP in paragraph (a)(3)(ii) of this section:

(i) 0.002 gr/dscf of PM, or

(ii) 0.0002 gr/dscf of total metal HAP.

(4) For each electric induction metal melting furnace or scrap preheater at a new iron and steel foundry, you must not discharge emissions through a conveyance to the atmosphere that exceed either the limit for PM in paragraph (a)(4)(i) of this section or, alternatively the limit for total metal HAP in paragraph (a)(4)(ii) of this section:

(i) 0.001 gr/dscf of PM, or

(ii) 0.00008 gr/dscf of total metal HAP.

(5) For each pouring station at an existing iron and steel foundry, you must not discharge emissions through a conveyance to the atmosphere that exceed either the limit for PM in paragraph (a)(5)(i) of this section or, alternatively the limit for total metal HAP in paragraph (a)(5)(ii) of this section:

(i) 0.010 gr/dscf of PM, or

(ii) 0.0008 gr/dscf of total metal HAP.

(6) For each pouring area or pouring station at a new iron and steel foundry, you must not discharge emissions through a conveyance to the atmosphere that exceed either the limit for PM in paragraph (a)(6)(i) of this section or, alternatively the limit for total metal HAP in paragraph (a)(6)(ii) of this section:

(i) 0.002 gr/dscf of PM, or

(ii) 0.0002 gr/dscf of total metal HAP.

(7) For each building or structure housing any iron and steel foundry emissions source at the iron and steel foundry, you must not discharge any fugitive emissions to the atmosphere from foundry operations that exhibit opacity greater than 20 percent (6-minute average), except for one 6-minute average per hour that does not exceed 27 percent opacity.

(8) For each cupola metal melting furnace at a new or existing iron and steel foundry, you must not discharge emissions of volatile organic hazardous air pollutants (VOHAP) through a conveyance to the atmosphere that exceed 20 parts per million by volume (ppmv) corrected to 10 percent oxygen.

(9) As an alternative to the work practice standard in §63.7700(e) for a scrap preheater at an existing iron and steel foundry or in §63.7700(f) for a scrap preheater at a new iron and steel foundry, you must not discharge emissions of VOHAP through a conveyance to the atmosphere that exceed 20 ppmv.

(10) For one or more automated conveyor and pallet cooling lines that use a sand mold system or automated shakeout lines that use a sand mold system at a new iron and steel foundry, you must not discharge emissions of VOHAP through a conveyance to the atmosphere that exceed a flow-weighted average of 20 ppmv.

(11) For each triethylamine (TEA) cold box mold or core making line at a new or existing iron and steel foundry, you must meet either the emissions limit in paragraph (a)(11)(i) of this section or, alternatively the emissions standard in paragraph (a)(11)(ii) of this section:

(i) You must not discharge emissions of TEA through a conveyance to the atmosphere that exceed 1 ppmv, as determined according to theperformance test procedures in § 63.7732(g); or

(ii) You must reduce emissions of TEA from each TEA cold box mold or core making line by at least 99 percent, as determined according to the performance test procedures in § 63.7732(g).

(b) You must meet each operating limit in paragraphs (b)(1) through (5) of this section that applies to you.

(1) You must install, operate, and maintain a capture and collection system for all emissions sources subject to an emissions limit for VOHAP or TEA in paragraphs (a)(8) through (11) of this section.

(i) Each capture and collection system must meet accepted engineering standards, such as those published by the American Conference of Governmental Industrial Hygienists.

(ii) You must operate each capture system at or above the lowest value or settings established as operating limits in your operation and maintenance plan.

(2) You must operate each wet scrubber applied to emissions from a metal melting furnace, scrap preheater, pouring area, or pouring station subject to an emissions limit for PM or total metal HAP in paragraphs (a)(1) through (6) of this section such that the 3-hour average pressure drop and scrubber water flow rate does not fall below the minimum levels established during the initial or subsequent performance test.

(3) You must operate each combustion device applied to emissions from a cupola metal melting furnace subject to the emissions limit for VOHAP in paragraph (a)(8) of this section, such that the 15-minute average combustion zone temperature does not fall below 1,300 degrees Fahrenheit (°F). Periods when the cupola is off blast and for 15 minutes after going on blast from an off blast condition are not included in the 15-minute average.

(4) You must operate each combustion device applied to emissions from a scrap preheater subject to the emissions limit for VOHAP in paragraph (a)(9) of this section or from a TEA cold box mold or core making line subject to the emissions limit for TEA in paragraph (a)(11) of this section, such that the 3-hour average combustion zone temperature does not fall below the minimum level established during the initial or subsequent performance test.

(5) You must operate each wet acid scrubber applied to emissions from a TEA cold box mold or core making line subject to the emissions limit for TEA in paragraph (a)(11) of this section such that:

(i) The 3-hour average scrubbing liquid flow rate does not fall below the minimum level established during the initial or subsequent performance test; and

(ii) The 3-hour average pH of the scrubber blowdown, as measured by a continuous parameter monitoring system (CPMS), does not exceed 4.5 or the pH of the scrubber blowdown, as measured once every 8 hours during process operations, does not exceed 4.5.

(c) If you use a control device other than a baghouse, wet scrubber, wet acid scrubber, or combustion device, you must prepare and submit a monitoring plan containing the information listed in paragraphs (c)(1) through (5) of this section. The monitoring plan is subject to approval by the Administrator.

(1) A description of the device;

(2) Test results collected in accordance with §63.7732 verifying the performance of the device for reducing emissions of PM, total metal HAP, VOHAP, or TEA to the levels required by this subpart;

(3) A copy of the operation and maintenance plan required by §63.7710(b);

(4) A list of appropriate operating parameters that will be monitored to maintain continuous compliance with the applicable emissions limitation(s); and

(5) Operating parameter limits based on monitoring data collected during the performance test.

[69 FR 21923, Apr. 22, 2004, as amended at 73 FR 7218, February 7, 2008]

Work Practice Standards

§ 63.7700 What work practice standards must I meet?

(a) For each segregated scrap storage area, bin or pile, you must either comply with the certification requirements in paragraph (b) of this section, or prepare and implement a plan for the selection and inspection of scrap according to the requirements in paragraph (c) of this section. You may have certain scrap subject to paragraph (b) of this section and other scrap subject to paragraph (c) of this section at your facility provided the scrap remains segregated until charge make-up.

(b) You must prepare and operate at all times according to a written certification that the foundry purchases and uses only metal ingots, pig iron, slitter, or other materials that do not include post-consumer automotive body scrap, post-consumer engine blocks, post-consumer oil filters, oily turnings, lead components, mercury switches, plastics, or free organic liquids. For the purpose of this paragraph (b), “free organic liquids” is defined as material that fails the paint filter test by EPA Method 9095A, “Paint Filter Liquids Test” (Revision 1, December 1996), as published in EPA Publication SW–846 “Test Methods for Evaluating Solid Waste, Physical/Chemical Methods” (incorporated by reference—see §63.14). Any post-consumer engine blocks, post-consumer oil filters, or oily turnings that are processed and/or cleaned to the extent practicable such that the materials do not include lead components, mercury switches, chlorinated plastics, or free organic liquids can be included in this certification.

(c) You must prepare and operate at all times according to a written plan for the selection and inspection of iron and steel scrap to minimize, to the extent practicable, the amount of organics and HAP metals in the charge materials used by the iron and steel foundry. This scrap selection and inspection plan is subject to approval by the Administrator. You must keep a copy of the plan onsite and readily available to all plant personnel with materials acquisition or inspection duties. You must provide a copy of the material specifications to each of your scrap vendors. Each plan must include the information specified in paragraphs (c)(1) through (3) of this section.

(1) A materials acquisition program to limit organic contaminants according to the requirements in paragraph (c)(1)(i) or (ii) of this section, as applicable.

(i) For scrap charged to a scrap preheater, electric arc metal melting furnace, or electric induction metal melting furnace, specifications for scrap materials to be depleted (to the extent practicable) of the presence of used oil filters, chlorinated plastic parts, organic liquids, and a program to ensure the scrap materials are drained of free liquids; or

(ii) For scrap charged to a cupola metal melting furnace, specifications for scrap materials to be depleted (to the extent practicable) of the presence of chlorinated plastic, and a program to ensure the scrap materials are drained of free liquids.

(2) A materials acquisition program specifying that the scrap supplier remove accessible mercury switches from the trunks and hoods of any automotive bodies contained in the scrap and remove accessible lead components such as batteries and wheel weights. You must either obtain and maintain onsite a copy of the procedures used by the scrap supplier for either removing accessible mercury switches or for purchasing automobile bodies that have had mercury switches removed, as applicable, or document your attempts to obtain a copy of these procedures from the scrap suppliers servicing your area.

(3) Procedures for visual inspection of a representative portion, but not less than 10 percent, of all incoming scrap shipments to ensure the materials meet the specifications.

(i) The inspection procedures must identify the location(s) where inspections are to be performed for each type of shipment. Inspections may be performed at the scrap supplier's facility. The selected location(s) must provide a reasonable vantage point, considering worker safety, for visual inspection.

(ii) The inspection procedures must include recordkeeping requirements that document each visual inspection and the results.

(iii) The inspection procedures must include provisions for rejecting or returning entire or partial scrap shipments that do not meet specifications and limiting purchases from vendors whose shipments fail to meet specifications for more than three inspections in one calendar year.

(iv) If the inspections are performed at the scrap supplier's facility, the inspection procedures must include an explanation of how the periodic inspections ensure that not less than 10 percent of scrap purchased from each supplier is subject to inspection.

(d) For each furan warm box mold or core making line in a new or existing iron and steel foundry, you must use a binder chemical formulation that does not contain methanol as a specific ingredient of the catalyst formulation as determined by the Material Safety Data Sheet. This requirement does not apply to the resin portion of the binder system.

(e) For each scrap preheater at an existing iron and steel foundry, you must meet either the requirement in paragraph (e)(1) or (2) of this section. As an alternative to the requirement in paragraph (e)(1) or (2) of this section, you must meet the VOHAP emissions limit in §63.7690(a)(9).

(1) You must operate and maintain a gas-fired preheater where the flame directly contacts the scrap charged; or

(2) You must charge only material that is subject to and in compliance with the scrap certification requirement in paragraph (b) of this section.

(f) For each scrap preheater at a new iron and steel foundry, you must charge only material that is subject to and in compliance with the scrap certification requirement in paragraph (b) of this section. As an alternative to this requirement, you must meet the VOHAP emissions limit in §63.7690(a)(9).

[69 FR 21923, Apr. 22, 2004, as amended at 70 FR 29404, May 20, 2005; 73 FR 7218, February 7, 2008]

Operation and Maintenance Requirements

§ 63.7710 What are my operation and maintenance requirements?

(a) As required by §63.6(e)(1)(i), you must always operate and maintain your iron and steel foundry, including air pollution control and monitoring equipment, in a manner consistent with good air pollution control practices for minimizing emissions at least to the levels required by this subpart.

(b) You must prepare and operate at all times according to a written operation and maintenance plan for each capture and collection system and control device for an emissions source subject to a PM, metal HAP, TEA, or VOHAP emissions limit in §63.7690(a). Your operation and maintenance plan also must include procedures for igniting gases from mold vents in pouring areas and pouring stations that use a sand mold system. This operation and maintenance plan is subject to approval by the Administrator. Each plan must contain the elements described in paragraphs (b)(1) through (6) of this section.

(1) Monthly inspections of the equipment that is important to the performance of the total capture system (i.e., pressure sensors, dampers, and damper switches). This inspection must include observations of the physical appearance of the equipment (e.g., presence of holes in the ductwork or hoods, flow constrictions caused by dents or accumulated dust in the ductwork, and fan erosion). The operation and maintenance plan must also include requirements to repair the defect or deficiency as soon as practicable.

(2) Operating limits for each capture system for an emissions source subject to an emissions limit or standard for VOHAP or TEA in §63.7690(a)(8) through (11). You must establish the operating according to the requirements in paragraphs (b)(2)(i) through (iii) of this section.

(i) Select operating limit parameters appropriate for the capture system design that are representative and reliable indicators of the performance of the capture system. At a minimum, you must use appropriate operating limit parameters that indicate the level of the ventilation draft and damper position settings for the capture system when operating to collect emissions, including revised settings for seasonal variations. Appropriate operating limit parameters for ventilation draft include, but are not limited to: volumetric flow rate through each separately ducted hood, total volumetric flow rate at the inlet to the control device to which the capture system is vented, fan motor amperage, or static pressure. Any parameter for damper position setting may be used that indicates the duct damper position related to the fully open setting.

(ii) For each operating limit parameter selected in paragraph (b)(2)(i) of this section, designate the value or setting for the parameter at which the capture system operates during the process operation. If your operation allows for more than one process to be operating simultaneously, designate the value or setting for the parameter at which the capture system operates during each possible configuration that you may operate (i.e., the operating limits with one furnace melting, two melting, as applicable to your plant).

(iii) Include documentation in your plan to support your selection of the operating limits established for your capture system. This documentation must include a description of the capture system design, a description of the capture system operating during production, a description of each selected operating limit parameter, a rationale for why you chose the parameter, a description of the method used to monitor the parameter according to the requirements of §63.7740(a), and the data used to set the value or setting for the parameter for each of your process configurations.

(3) Preventative maintenance plan for each control device, including a preventative maintenance schedule that is consistent with the manufacturer's instructions for routine and long-term maintenance.

(4) A site-specific monitoring plan for each bag leak detection system. For each bag leak detection system that operates on the triboelectric effect, the monitoring plan must be consistent with the recommendations contained in the U.S. Environmental Protection Agency guidance document “Fabric Filter Bag Leak Detection Guidance” (EPA–454/R–98–015). This baghouse monitoring plan is subject to approval by the Administrator. The owner or operator shall operate and maintain the bag leak detection system according to the site-specific monitoring plan at all times. The plan must address all of the items identified in paragraphs (b)(4)(i) through (v) of this section.

(i) Installation of the bag leak detection system.

(ii) Initial and periodic adjustment of the bag leak detection system including how the alarm set-point will be established.

(iii) Operation of the bag leak detection system including quality assurance procedures.

(iv) How the bag leak detection system will be maintained including a routine maintenance schedule and spare parts inventory list.

(v) How the bag leak detection system output will be recorded and stored.

(5) Corrective action plan for each baghouse. The plan must include the requirement that, in the event a bag leak detection system alarm is triggered, you must initiate corrective action to determine the cause of the alarm within 1 hour of the alarm, initiate corrective action to correct the cause of the problem within 24 hours of the alarm, and complete the corrective action as soon as practicable. Corrective actions taken may include, but are not limited to:

(i) Inspecting the baghouse for air leaks, torn or broken bags or filter media, or any other condition that may cause an increase in emissions.

(ii) Sealing off defective bags or filter media.

(iii) Replacing defective bags or filter media or otherwise repairing the control device.

(iv) Sealing off a defective baghouse compartment.

(v) Cleaning the bag leak detection system probe or otherwise repairing the bag leak detection system.

(vi) Making process changes.

(vii) Shutting down the process producing the PM emissions.

(6) Procedures for providing an ignition source to mold vents of sand mold systems in each pouring area and pouring station unless you determine the mold vent gases either are not ignitable, ignite automatically, or cannot be ignited due to accessibility or safety issues. You must document and maintain records of this determination. The determination of ignitability, accessibility, and safety may encompass multiple casting patterns provided the castings utilize similar sand-to-metal ratios, binder formulations, and coating materials. The determination of ignitability must be based on observations of the mold vents within 5 minutes of pouring, and the flame must be present for at least 15 seconds for the mold vent to be considered ignited. For the purpose of this determination:

(i) Mold vents that ignite more than 75 percent of the time without the presence of an auxiliary ignition source are considered to ignite automatically; and

(ii) Mold vents that do not ignite automatically and cannot be ignited in the presence of an auxiliary ignition source more than 25 percent of the time are considered to be not ignitable.

[69 FR 21923, Apr. 22, 2004, as amended at 73 FR 7218, February 7, 2008]

General Compliance Requirements

§ 63.7720 What are my general requirements for complying with this subpart?

(a) You must be in compliance with the emissions limitations, work practice standards, and operation and maintenance requirements in this subpart at all times, except during periods of startup, shutdown, or malfunction.

(b) During the period between the compliance date specified for your iron and steel foundry in §63.7683 and the date when applicable operating limits have been established during the initial performance test, you must maintain a log detailing the operation and maintenance of the process and emissions control equipment.

(c) You must develop a written startup, shutdown, and malfunction plan according to the provisions in §63.6(e)(3). The startup, shutdown, and malfunction plan also must specify what constitutes a shutdown of a cupola and how to determine that operating conditions are normal following startup of a cupola.

[69 FR 21923, Apr. 22, 2004, as amended at 71 FR 20468, Apr. 20, 2006]

Initial Compliance Requirements

§ 63.7730 By what date must I conduct performance tests or other initial compliance demonstrations?

(a) As required by §63.7(a)(2), you must conduct a performance test no later than 180 calendar days after the compliance date that is specified in §63.7683 for your iron and steel foundry to demonstrate initial compliance with each emissions limitation in §63.7690 that applies to you.

(b) For each work practice standard in §63.7700 and each operation and maintenance requirement in §63.7710 that applies to you where initial compliance is not demonstrated using a performance test, you must demonstrate initial compliance no later than 30 calendar days after the compliance date that is specified for your iron and steel foundry in §63.7683.

(c) If you commenced construction or reconstruction between December 23, 2002 and April 22, 2004, you must demonstrate initial compliance with either the proposed emissions limit or the promulgated emissions limit no later than October 19, 2004 or no later than 180 calendar days after startup of the source, whichever is later, according to §63.7(a)(2)(ix).

(d) If you commenced construction or reconstruction between December 23, 2002 and April 22, 2004, and you chose to comply with the proposed emissions limit when demonstrating initial compliance, you must conduct a second performance test to demonstrate compliance with the promulgated emissions limit by October 19, 2007 or after startup of the source, whichever is later, according to §63.7(a)(2)(ix).

§ 63.7731 When must I conduct subsequent performance tests?

(a) You must conduct subsequent performance tests to demonstrate compliance with all applicable PM or total metal HAP, VOHAP, and TEA emissions limitations in §63.7690 for your iron and steel foundry no

less frequently than every 5 years and each time you elect to change an operating limit or to comply with a different alternative emissions limit, if applicable. The requirement to conduct performance tests every 5 years does not apply to an emissions source for which a continuous emissions monitoring system (CEMS) is used to demonstrate continuous compliance.

(b) You must conduct subsequent performance tests to demonstrate compliance with the opacity limit in §63.7690(a)(7) for your iron and steel foundry no less frequently than once every 6 months.

[69 FR 21923, Apr. 22, 2004, as amended at 73 FR 7219, February 7, 2008]

§ 63.7732 What test methods and other procedures must I use to demonstrate initial compliance with the emissions limitations?

(a) You must conduct each performance test that applies to your iron and steel foundry based on your selected compliance alternative, if applicable, according to the requirements in §63.7(e)(1) and the conditions specified in paragraphs (b) through (i) of this section.

(b) To determine compliance with the applicable emissions limit for PM in §63.7690(a)(1) through (6) for a metal melting furnace, scrap preheater, pouring station, or pouring area, follow the test methods and procedures in paragraphs (b)(1) through (6) of this section.

(1) Determine the concentration of PM according to the test methods in 40 CFR part 60, appendix A that are specified in paragraphs (b)(1)(i) through (v) of this section.

(i) Method 1 or 1A to select sampling port locations and the number of traverse points in each stack or duct. Sampling sites must be located at the outlet of the control device (or at the outlet of the emissions source if no control device is present) prior to any releases to the atmosphere.

(ii) Method 2, 2A, 2C, 2D, 2F, or 2G to determine the volumetric flow rate of the stack gas.

(iii) Method 3, 3A, or 3B to determine the dry molecular weight of the stack gas.

(iv) Method 4 to determine the moisture content of the stack gas.

(v) Method 5, 5B, 5D, 5F, or 5I, as applicable, to determine the PM concentration. The PM concentration is determined using only the front-half (probe rinse and filter) of the PM catch.

(2) Collect a minimum sample volume of 60 dscf of gas during each PM sampling run. A minimum of three valid test runs are needed to comprise a performance test.

(3) For cupola metal melting furnaces, sample only during times when the cupola is on blast.

(4) For electric arc and electric induction metal melting furnaces, sample only during normal production conditions, which may include, but are not limited to the following cycles: Charging, melting, alloying, refining, slagging, and tapping.

(5) For scrap preheaters, sample only during normal production conditions, which may include, but are not limited to the following cycles: Charging, heating, and discharging.

(6) Determine the total mass of metal charged to the furnace or scrap preheater. For a cupola metal melting furnace at an existing iron and steel foundry that is subject to the PM emissions limit in §63.7690(a)(ii), calculate the PM emissions rate in pounds of PM per ton (lb/ton) of metal charged using Equation 1 of this section:

$$EF_{PM} = C_{PM} x \left(\frac{Q}{M_{charge}} \right) x \left(\frac{t_{test}}{7{,}000} \right) \qquad \text{(Eq. 1)}$$

Where:

EF_{PM} = Mass emissions rate of PM, pounds of PM per ton (lb/ton) of metal charged;

C_{PM} = Concentration of PM measured during performance test run, gr/dscf;

Q = Volumetric flow rate of exhaust gas, dry standard cubic feet per minute (dscfm);

M_{charge} = Mass of metal charged during performance test run, tons;

t_{test} = Duration of performance test run, minutes; and
7,000 = Unit conversion factor, grains per pound (gr/lb).

(c) To determine compliance with the applicable emissions limit for total metal HAP in § 63.7690(a)(1) through (6) for a metal melting furnace, scrap preheater, pouring station, or pouring area, follow the test methods and procedures in paragraphs (c)(1) through (6) of this section.

(1) Determine the concentration of total metal HAP according to the test methods in 40 CFR part 60, appendix A that are specified in paragraphs (c)(1)(i) through (v) of this section.

(i) Method 1 or 1A to select sampling port locations and the number of traverse points in each stack or duct. Sampling sites must be located at the outlet of the control device (or at the outlet of the emissions source if no control device is present) prior to any releases to the atmosphere.

(ii) Method 2, 2A, 2C, 2D, 2F, or 2G to determine the volumetric flow rate of the stack gas.

(iii) Method 3, 3A, or 3B to determine the dry molecular weight of the stack gas.

(iv) Method 4 to determine the moisture content of the stack gas.

(v) Method 29 to determine the total metal HAP concentration.

(2) A minimum of three valid test runs are needed to comprise a performance test.

(3) For cupola metal melting furnaces, sample only during times when the cupola is on blast.

(4) For electric arc and electric induction metal melting furnaces, sample only during normal production conditions, which may include, but are not limited to the following cycles: Charging, melting, alloying, refining, slagging, and tapping.

(5) For scrap preheaters, sample only during normal production conditions, which may include, but are not limited to the following cycles: Charging, heating, and discharging.

(6) Determine the total mass of metal charged to the furnace or scrap preheater during each performance test run and calculate the total metal HAP emissions rate (pounds of total metal HAP per ton (lb/ton) of metal charged) using Equation 2 of this section:

$$EF_{TMHAP} = C_{TMHAP} x \left(\frac{Q}{M_{charge}} \right) x \left(\frac{t_{test}}{7{,}000} \right) \qquad \text{(Eq. 2)}$$

Where:

EF_{TMHAP} = Emissions rate of total metal HAP, pounds of total metal HAP per ton (lb/ton) of metal charged;

C_{TMHAP} = Concentration of total metal HAP measured during performance test run, gr/dscf;

Q = Volumetric flow rate of exhaust gas, dscfm;

M_{charge} = Mass of metal charged during performance test run, tons;

t_{test} = Duration of performance test run, minutes; and

7,000 = Unit conversion factor, gr/lb.

(d) To determine compliance with the opacity limit in §63.7690(a)(7) for fugitive emissions from buildings or structures housing any iron and steel foundry emissions source at the iron and steel foundry, follow the procedures in paragraphs (d)(1) and (2) of this section.

(1) Using a certified observer, conduct each opacity test according to the requirements in EPA Method 9 (40 CFR part 60, appendix A) and §63.6(h)(5). The certified observer may identify a limited number of openings or vents that appear to have the highest opacities and perform opacity observations on the identified openings or vents in lieu of performing observations for each opening or vent from the building or structure. Alternatively, a single opacity observation for the entire building or structure may be performed, if the fugitive release points afford such an observation.

(2) During testing intervals when PM performance tests, if applicable, are being conducted, conduct the opacity test such the opacity observations are recorded during the PM performance tests.

(e) To determine compliance with the applicable VOHAP emissions limit in §63.7690(a)(8) for a cupola metal melting furnace or in §63.7690(a)(9) for a scrap preheater, follow the test methods and procedures in paragraphs (e)(1) through (4) of this section.

(1) Determine the VOHAP concentration for each test run according to the test methods in 40 CFR part 60, appendix A that are specified in paragraphs (b)(1)(i) through (v) of this section.

(i) Method 1 or 1A to select sampling port locations and the number of traverse points in each stack or duct. Sampling sites must be located at the outlet of the control device (or at the outlet of the emissions source if no control device is present) prior to any releases to the atmosphere.

(ii) Method 2, 2A, 2C, 2D, 2F, or 2G to determine the volumetric flow rate of the stack gas.

(iii) Method 3, 3A, or 3B to determine the dry molecular weight of the stack gas.

(iv) Method 4 to determine the moisture content of the stack gas.

(v) Method 18 to determine the VOHAP concentration. Alternatively, you may use Method 25 to determine the concentration of total gaseous nonmethane organics (TGNMO) or Method 25A to determine the concentration of total organic compounds (TOC), using hexane as the calibration gas.

(2) Determine the average VOHAP, TGNMO, or TOC concentration using a minimum of three valid test runs. Each test run must include a minimum of 60 continuous operating minutes.

(3) For a cupola metal melting furnace, correct the measured concentration of VOHAP, TGNMO, or TOC for oxygen content in the gas stream using Equation 3 of this section:

$$C_{VOHAP,10\%O_2} = C_{VOHAP}\left(\frac{10.9\%}{20.9\% - \%O_2}\right) \qquad \text{(Eq. 3)}$$

Where:

C_{VOHAP} = Concentration of VOHAP in ppmv as measured by Method 18 in 40 CFR part 60, appendix A or the concentration of TGNMO or TOC in ppmv as hexane as measured by Method 25 or 25A in 40 CFR part 60, appendix A; and

$\%O_2$ = Oxygen concentration in gas stream, percent by volume (dry basis).

(4) For a cupola metal melting furnace, measure the combustion zone temperature of the combustion device with the CPMS required in §63.7740(d) during each sampling run in 15-minute intervals. Determine and record the 15-minute average of the three runs.

(f) Follow the applicable procedures in paragraphs (f)(1) through (3) of this section to determine compliance with the VOHAP emissions limit in §63.7690(a)(10) for automated pallet cooling lines or automated shakeout lines.

(1) Follow these procedures to demonstrate compliance by direct measurement of total hydrocarbons (a surrogate for VOHAP) using a volatile organic compound (VOC) CEMS.

(i) Using the VOC CEMS required in §63.7740(g), measure and record the concentration of total hydrocarbons (as hexane) for 180 continuous operating minutes. You must measure emissions at the outlet of the control device (or at the outlet of the emissions source if no control device is present) prior to any releases to the atmosphere.

(ii) Reduce the monitoring data to hourly averages as specified in §63.8(g)(2).

(iii) Compute and record the 3-hour average of the monitoring data.

(2) As an alternative to the procedures in paragraph (f)(1) of this section, you may demonstrate compliance with the VOHAP emissions limit in §63.7690(a)(10) by establishing a site-specific TOC emissions limit that is correlated to the VOHAP emissions limit according to the procedures in paragraph (f)(2)(i) through (ix) of this section.

(i) Determine the VOHAP concentration for each test run according to the test methods in 40 CFR part 60, appendix A that are specified in paragraph (f)(2)(ii) through (vi) of this section.

(ii) Method 1 or 1A to select sampling port locations and the number of traverse points in each stack or duct. Sampling sites must be located at the outlet of the control device (or at the outlet of the emissions source if no control device is present) prior to any releases to the atmosphere.

(iii) Method 2, 2A, 2C, 2D, 2F, or 2G to determine the volumetric flow rate of the stack gas.

(iv) Method 3, 3A, or 3B to determine the dry molecular weight of the stack gas.

(v) Method 4 to determine the moisture content of the stack gas.

(vi) Method 18 to determine the VOHAP concentration. Alternatively, you may use Method 25 to determine the concentration of TGNMO using hexane as the calibration gas.

(vii) Using the CEMS required in §63.7740(g), measure and record the concentration of total hydrocarbons (as hexane) during each of the Method 18 (or Method 25) sampling runs. You must measure emissions at the outlet of the control device (or at the outlet of the emissions source if no control device is present) prior to any releases to the atmosphere.

(viii) Calculate the average VOHAP (or TGNMO) concentration for the source test as the arithmetic average of the concentrations measured for the individual test runs, and determine the average concentration of total hydrocarbon (as hexane) as measured by the CEMS during all test runs.

(ix) Calculate the site-specific VOC emissions limit using Equation 4 of this section:

$$VOC_{limit} = 20x\frac{C_{VOHAP,avg}}{C_{CEM}} \qquad \text{(Eq. 4)}$$

Where:

$C_{VOHAP,avg}$ = Average concentration of VOHAP for the source test in ppmv as measured by Method 18 in 40 CFR part 60, appendix A or the average concentration of TGNMO for the source test in ppmv as hexane as measured by Method 25 in 40 CFR part 60, appendix A; and

C_{CEM} = Average concentration of total hydrocarbons in ppmv as hexane as measured using the CEMS during the source test.

(3) For two or more exhaust streams from one or more automated conveyor and pallet cooling lines or automated shakeout lines, compute the flow-weighted average concentration of VOHAP emissions for each combination of exhaust streams using Equation 5 of this section:

$$C_W = \frac{\sum_{i=1}^{n} C_i Q_i}{\sum_{i=1}^{n} Q_i} \qquad \text{(Eq. 5)}$$

Where:

C_W = Flow-weighted concentration of VOHAP or VOC, ppmv (as hexane);

C_i = Concentration of VOHAP or VOC from exhaust stream ‘‘i’’, ppmv (as hexane);

n = Number of exhaust streams sampled; and

Q_i = Volumetric flow rate of effluent gas from exhaust stream ‘‘i,’’, dscfm.

(g) To determine compliance with the emissions limit or standard in §63.7690(a)(11) for a TEA cold box mold or core making line, follow the test methods in 40 CFR part 60, appendix A, specified in paragraphs (g)(1) through (4) of this section.

(1) Determine the TEA concentration for each test run according to the test methods in 40 CFR part 60, appendix A that are specified in paragraphs (g)(1)(i) through (v) of this section.

(i) Method 1 or 1A to select sampling port locations and the number of traverse points in each stack or duct. If you elect to meet the 99 percent reduction standard, sampling sites must be located both at the inlet to the control device and at the outlet of the control device prior to any releases to the atmosphere. If you elect to meet the concentration limit, the sampling site must be located at the outlet of the control device (or at the outlet of the emissions source if no control device is present) prior to any releases to the atmosphere.

(ii) Method 2, 2A, 2C, 2D, 2F, or 2G to determine the volumetric flow rate of the stack gas.

(iii) Method 3, 3A, or 3B to determine the dry molecular weight of the stack gas.

(iv) Method 4 to determine the moisture content of the stack gas.

(v) Method 18 to determine the TEA concentration. Alternatively, you may use NIOSH Method 2010 (incorporated by reference—see §63.14) to determine the TEA concentration provided the performance requirements outlined in section 13.1 of EPA Method 18 are satisfied. The sampling option and time must be sufficiently long such that either the TEA concentration in the field sample is at least 5 times the limit of detection for the analytical method or the test results calculated using the laboratory's reported analytical detection limit for the specific field samples are less than 1/5 of the applicable emissions limit. When using Method 18, the adsorbent tube approach, as described in section 8.2.4 of Method 18, may be required to achieve the necessary analytical detection limits. The sampling time must be at least 1 hour in all cases.

(2) If you use a wet acid scrubber, conduct the test as soon as practicable after adding fresh acid solution and the system has reached normal operating conditions.

(3) If you use a wet acid scrubber that is subject to the operating limit in §63.7690(b)(5)(ii) for pH level, determine the pH of the scrubber blowdown using the procedures in paragraph (g)(3)(i) or (ii) of this section.

(i) Measure the pH of the scrubber blowdown with the CPMS required in §63.7740(f)(2) during each TEA sampling run in intervals of no more than 15 minutes. Determine and record the 3-hour average; or

(ii) Measure and record the pH level using the probe and meter required in §63.7740(f)(2) once each sampling run. Determine and record the average pH level for the three runs.

(4) If you are subject to the 99 percent reduction standard, calculate the mass emissions reduction using Equation 6 of this section:

$$\%\text{reduction} = \frac{E_i - E_o}{E_i} \text{x} 100\% \qquad \text{(Eq. 6)}$$

Where:

E_i = Mass emissions rate of TEA at control device inlet, kilograms per hour (kg/hr); and

E_o = Mass emissions rate of TEA at control device outlet, kg/hr.

(h) To determine compliance with the PM or total metal HAP emissions limits in §63.7690(a)(1) through (6) when one or more regulated emissions sources are combined with either another regulated emissions

source subject to a different emissions limit or other non-regulated emissions sources, you may demonstrate compliance using one of the procedures in paragraphs (h)(1) through (3) of this section.

(1) Meet the most stringent applicable emissions limit for the regulated emissions sources included in the combined emissions stream for the combined emissions stream.

(2) Use the procedures in paragraphs (h)(2)(i) through (iii) of this section.

(i) Determine the volumetric flow rate of the individual regulated streams for which emissions limits apply.

(ii) Calculate the flow-weighted average emissions limit, considering only the regulated streams, using Equation 5 of this section, except C_w is the flow-weighted average emissions limit for PM or total metal HAP in the exhaust stream, gr/dscf; and C_i is the concentration of PM or total metal HAP in exhaust stream ''i'', gr/dscf.

(iii) Meet the calculated flow-weighted average emissions limit for the regulated emissions sources included in the combined emissions stream for the combined emissions stream.

(3) Use the procedures in paragraphs (h)(3)(i) through (iii) of this section.

(i) Determine the PM or total metal HAP concentration of each of the regulated streams prior to the combination with other exhaust streams or control device.

(ii) Measure the flow rate and PM or total metal HAP concentration of the combined exhaust stream both before and after the control device and calculate the mass removal efficiency of the control device using Equation 6 of this section, except E_i is the mass emissions rate of PM or total metal HAP at the control device inlet, lb/hr and E_o is the mass emissions rate of PM or total metal HAP at the control device outlet, lb/hr.

(iii) Meet the applicable emissions limit based on the calculated PM or total metal HAP concentration for the regulated emissions sources using Equation 7 of this section:

$$C_{released} = C_i x\left(1 - \frac{\%reduction}{100}\right) \qquad \text{(Eq. 7)}$$

Where:

$C_{released}$= Calculated concentration of PM (or total metal HAP) predicted to be released to the atmosphere from the regulated emissions source, gr/dscf; and

C_i= Concentration of PM (or total metal HAP) in the uncontrolled regulated exhaust stream, gr/dscf.

(i) To determine compliance with an emissions limit for situations when multiple sources are controlled by a single control device, but only one source operates at a time, or other situations that are not expressly considered in paragraphs (b) through (h) of this section, a site-specific test plan should be submitted to the Administrator for approval according to the requirements in § 63.7(c)(2) and (3).

[69 FR 21923, Apr. 22, 2004, as amended at 73 FR 7219, February 7, 2008]

§ 63.7733 What procedures must I use to establish operating limits?

(a) For each capture system subject to operating limits in §63.7690(b)(1)(ii), you must establish site-specific operating limits in your operation and maintenance plan according to the procedures in paragraphs (a)(1) through (3) of this section.

(1) Concurrent with applicable emissions and opacity tests, measure and record values for each of the operating limit parameters in your capture system operation and maintenance plan according to the monitoring requirements in §63.7740(a).

(2) For any dampers that are manually set and remain at the same position at all times the capture system is operating, the damper position must be visually checked and recorded at the beginning and end of each run.

(3) Review and record the monitoring data. Identify and explain any times the capture system operated outside the applicable operating limits.

(b) For each wet scrubber subject to the operating limits in §63.7690(b)(2) for pressure drop and scrubber water flow rate, you must establish site-specific operating limits according to the procedures specified in paragraphs (b)(1) and (2) of this section.

(1) Using the CPMS required in §63.7740(c), measure and record the pressure drop and scrubber water flow rate in intervals of no more than 15 minutes during each PM test run.

(2) Compute and record the average pressure drop and average scrubber water flow rate for each valid sampling run in which the applicable emissions limit is met.

(c) For each combustion device applied to emissions from a scrap preheater or TEA cold box mold or core making line subject to the operating limit in §63.7690(b)(4) for combustion zone temperature, you must establish a site-specific operating limit according to the procedures specified in paragraphs (c)(1) and (2) of this section.

(1) Using the CPMS required in §63.7740(e), measure and record the combustion zone temperature during each sampling run in intervals of no more than 15 minutes.

(2) Compute and record the average combustion zone temperature for each valid sampling run in which the applicable emissions limit is met.

(d) For each acid wet scrubber subject to the operating limit in §63.7690(b)(5), you must establish a site-specific operating limit for scrubbing liquid flow rate according to the procedures specified in paragraphs (d)(1) and (2) of this section.

(1) Using the CPMS required in §63.7740(f), measure and record the scrubbing liquid flow rate during each TEA sampling run in intervals of no more than 15 minutes.

(2) Compute and record the average scrubbing liquid flow rate for each valid sampling run in which the applicable emissions limit is met.

(e) You may change the operating limits for a capture system, wet scrubber, acid wet scrubber, or combustion device if you meet the requirements in paragraphs (e)(1) through (3) of this section.

(1) Submit a written notification to the Administrator of your request to conduct a new performance test to revise the operating limit.

(2) Conduct a performance test to demonstrate compliance with the applicable emissions limitation in §63.7690.

(3) Establish revised operating limits according to the applicable procedures in paragraphs (a) through (d) of this section.

(f) You may use a previous performance test (conducted since December 22, 2002) to establish an operating limit provided the test meets the requirements of this subpart.

[69 FR 21923, Apr. 22, 2004, as amended at 73 FR 7221, February 7, 2008]

§ 63.7734 How do I demonstrate initial compliance with the emissions limitations that apply to me?

(a) You have demonstrated initial compliance with the emissions limits in §63.7690(a) by meeting the applicable conditions in paragraphs (a)(1) through (11) of this section. When alternative emissions limitations are provided for a given emissions source, you are not restricted in the selection of which applicable alternative emissions limitation is used to demonstrate compliance.

(1) For each electric arc metal melting furnace, electric induction metal melting furnace, or scrap preheater at an existing iron and steel foundry,

(i) The average PM concentration in the exhaust stream, determined according to the performance test procedures in §63.7732(b), did not exceed 0.005 gr/dscf; or

(ii) The average total metal HAP concentration in the exhaust stream, determined according to the performance test procedures in §63.7732(c), did not exceed 0.0004 gr/dscf.

(2) For each cupola metal melting furnace at an existing iron and steel foundry,

(i) The average PM concentration in the exhaust stream, determined according to the performance test procedures in §63.7732(b), did not exceed 0.006 gr/dscf; or

(ii) The average total metal HAP concentration in the exhaust stream, determined according to the performance test procedures in §63.7732(c), did not exceed 0.0005 gr/dscf; or

(iii) The average PM mass emissions rate, determined according to the performance test procedures in §63.7732(b), did not exceed 0.10 pound of PM per ton (lb/ton) of metal charged; or

(iv) The average total metal HAP mass emissions rate, determined according to the performance test procedures in §63.7732(c), did not exceed 0.008 pound of total metal HAP per ton (lb/ton) of metal charged.

(3) For each cupola metal melting furnace or electric arc metal melting furnace at a new iron and steel foundry,

(i) The average PM concentration in the exhaust stream, determined according to the performance test procedures in §63.7732(b), did not exceed 0.002 gr/dscf; or

(ii) The average total metal HAP concentration in the exhaust stream, determined according to the performance test procedures in §63.7732(c), did not exceed 0.0002 gr/dscf.

(4) For each electric induction metal melting furnace or scrap preheater at a new iron and steel foundry,

(i) The average PM concentration in the exhaust stream, determined according to the performance test procedures in §63.7732(b), did not exceed 0.001 gr/dscf; or

(ii) The average total metal HAP concentration in the exhaust stream, determined according to the performance test procedures in §63.7732(c), did not exceed 0.00008 gr/dscf.

(5) For each pouring station at an existing iron and steel foundry,

(i) The average PM concentration in the exhaust stream, measured according to the performance test procedures in §63.7732(b), did not exceed 0.010 gr/dscf; or

(ii) The average total metal HAP concentration in the exhaust stream, determined according to the performance test procedures in §63.7732(c), did not exceed 0.0008 gr/dscf.

(6) For each pouring area or pouring station at a new iron and steel foundry,

(i) The average PM concentration in the exhaust stream, measured according to the performance test procedures in §63.7732(b), did not exceed 0.002 gr/dscf; or

(ii) The average total metal HAP concentration in the exhaust stream, determined according to the performance test procedures in §63.7732(c), did not exceed 0.0002 gr/dscf.

(7) For each building or structure housing any iron and steel foundry emissions source at the iron and steel foundry, the opacity of fugitive emissions from foundry operations discharged to the atmosphere, determined according to the performance test procedures in §63.7732(d), did not exceed 20 percent (6-minute average), except for one 6-minute average per hour that did not exceed 27 percent opacity.

(8) For each cupola metal melting furnace at a new or existing iron and steel foundry, the average VOHAP concentration, determined according to the performance test procedures in §63.7732(e), did not exceed 20 ppmv corrected to 10 percent oxygen.

(9) For each scrap preheater at an existing iron and steel foundry that does not meet the work practice standards in §63.7700(e)(1) or (2) and for each scrap preheater at a new iron and steel foundry that does not meet the work practice standard in §63.7700(f), the average VOHAP concentration determined according to the performance test procedures in §63.7732(e), did not exceed 20 ppmv.

(10) For one or more automated conveyor and pallet cooling lines that use a sand mold system or automated shakeout lines that use a sand mold system at a new foundry,

(i) You have reduced the data from the CEMS to 3-hour averages according to the performance test procedures in §63.7732(f)(1) or (2); and

(ii) The 3-hour flow-weighted average VOHAP concentration, measured according to the performance test procedures in §63.7332(f)(1) or (2), did not exceed 20 ppmv.

(11) For each TEA cold box mold or core making line in a new or existing iron and steel foundry, the average TEA concentration, determined according to the performance test procedures in §63.7732(g), did not exceed 1 ppmv or was reduced by 99 percent.

(b) You have demonstrated initial compliance with the operating limits in §63.7690(b) if:

(1) For each capture system subject to the operating limit in §63.7690(b)(1)(ii),

(i) You have established appropriate site-specific operating limits in your operation and maintenance plan according to the requirements in §63.7710(b); and

(ii) You have a record of the operating parameter data measured during the performance test in accordance with §63.7733(a); and

(2) For each wet scrubber subject to the operating limits in §63.7690(b)(2) for pressure drop and scrubber water flow rate, you have established appropriate site-specific operating limits and have a record of the pressure drop and scrubber water flow rate measured during the performance test in accordance with §63.7733(b).

(3) For each combustion device subject to the operating limit in §63.7690(b)(3) for combustion zone temperature, you have a record of the combustion zone temperature measured during the performance test in accordance with §63.7732(e)(4).

(4) For each combustion device subject to the operating limit in §63.7690(b)(4) for combustion zone temperature, you have established appropriate site-specific operating limits and have a record of the combustion zone temperature measured during the performance test in accordance with §63.7733(c).

(5) For each acid wet scrubber subject to the operating limits in §63.7690(b)(5) for scrubbing liquid flow rate and scrubber blowdown pH,

(i) You have established appropriate site-specific operating limits for the scrubbing liquid flow rate and have a record of the scrubbing liquid flow rate measured during the performance test in accordance with §63.7733(d); and

(ii) You have a record of the pH of the scrubbing liquid blowdown measured during the performance test in accordance with §63.7732(g)(3).

[69 FR 21923, Apr. 22, 2004, as amended at 73 FR 7221, February 7, 2008]

§ 63.7735 How do I demonstrate initial compliance with the work practice standards that apply to me?

(a) For each iron and steel foundry subject to the certification requirement in §63.7700(b), you have demonstrated initial compliance if you have certified in your notification of compliance status that: “At all times, your foundry will purchase and use only metal ingots, pig iron, slitter, or other materials that do not include post-consumer automotive body scrap, post-consumer engine blocks, post-consumer oil filters, oily turnings, lead components, mercury switches, plastics, or free organic liquids.”

(b) For each iron and steel foundry subject to the requirements in §63.7700(c) for a scrap inspection and selection plan, you have demonstrated initial compliance if you have certified in your notification of compliance status that:

(1) You have submitted a written plan to the Administrator for approval according to the requirements in §63.7700(c); and

(2) You will operate at all times according to the plan requirements.

(c) For each furan warm box mold or core making line in a new or existing foundry subject to the work practice standard in §63.7700(d), you have demonstrated initial compliance if you have certified in your notification of compliance status that:

(1) You will meet the no methanol requirement for the catalyst portion of each binder chemical formulation; and

(2) You have records documenting your certification of compliance, such as a material safety data sheet (provided that it contains appropriate information), a certified product data sheet, or a manufacturer's hazardous air pollutant data sheet, onsite and available for inspection.

(d) For each scrap preheater at an existing iron and steel foundry subject to the work practice standard in §63.7700(e)(1) or (2), you have demonstrated initial compliance if you have certified in your notification of compliance status that:

(1) You have installed a gas-fired preheater where the flame directly contacts the scrap charged, you will operate and maintain each gas-fired scrap preheater such that the flame directly contacts the scrap charged, and you have records documenting your certification of compliance that are onsite and available for inspection; or

(2) You will charge only material that is subject to and in compliance with the scrap certification requirements in §63.7700(b) and you have records documenting your certification of compliance that are onsite and available for inspection.

(e) For each scrap preheater at a new iron and steel foundry subject to the work practice standard in §63.7700(f), you have demonstrated initial compliance if you have certified in your notification of compliance status that you will charge only material that is subject to and in compliance with the scrap certification requirements in §63.7700(b) and you have records documenting your certification of compliance that are onsite and available for inspection.

[69 FR 21923, Apr. 22, 2004, as amended at 70 FR 29404, May 20, 2005]

§ 63.7736 How do I demonstrate initial compliance with the operation and maintenance requirements that apply to me?

(a) For each capture system subject to an operating limit in §63.7690(b), you have demonstrated initial compliance if you have met the conditions in paragraphs (a)(1) and (2) of this section.

(1) You have certified in your notification of compliance status that:

(i) You have submitted the capture system operation and maintenance plan to the Administrator for approval according to the requirements of §63.7710(b); and

(ii) You will inspect, operate, and maintain each capture system according to the procedures in the plan.

(2) You have certified in your performance test report that the system operated during the test at the operating limits established in your operation and maintenance plan.

(b) For each control device subject to an operating limit in §63.7690(b), you have demonstrated initial compliance if you have certified in your notification of compliance status that:

(1) You have submitted the control device operation and maintenance plan to the Administrator for approval according to the requirements of §63.7710(b); and

(2) You will inspect, operate, and maintain each control device according to the procedures in the plan.

(c) For each bag leak detection system, you have demonstrated initial compliance if you have certified in your notification of compliance status that:

(1) You have submitted the bag leak detection system monitoring information to the Administrator within the written O&M plan for approval according to the requirements of §63.7710(b);

(2) You will inspect, operate, and maintain each bag leak detection system according to the procedures in the plan; and

(3) You will follow the corrective action procedures for bag leak detection system alarms according to the requirements in the plan.

(d) For each pouring area and pouring station in a new or existing foundry, you have demonstrated initial compliance if you have certified in your notification of compliance status report that:

(1) You have submitted the mold vent ignition plan to the Administrator for approval according to the requirements in §63.7710(b); and

(2) You will follow the procedures for igniting mold vent gases according to the requirements in the plan.

[69 FR 21923, Apr. 22, 2004, as amended at 73 FR 7221, February 7, 2008]

Continuous Compliance Requirements

§ 63.7740 What are my monitoring requirements?

(a) For each capture system subject to an operating limit in §63.7690(b)(1), you must install, operate, and maintain a CPMS according to the requirements in §63.7741(a) and the requirements in paragraphs (a)(1) and (2) of this section.

(1) If you use a flow measurement device to monitor the operating limit parameter, you must at all times monitor the hourly average rate (e.g., the hourly average actual volumetric flow rate through each separately ducted hood or the average hourly total volumetric flow rate at the inlet to the control device).

(2) Dampers that are manually set and remain in the same position are exempt from the requirement to install and operate a CPMS. If dampers are not manually set and remain in the same position, you must make a visual check at least once every 24 hours to verify that each damper for the capture system is in the same position as during the initial performance test.

(b) For each negative pressure baghouse or positive pressure baghouse equipped with a stack that is applied to meet any PM or total metal HAP emissions limitation in this subpart, you must at all times monitor the relative change in PM loadings using a bag leak detection system according to the requirements in § 63.7741(b).

(c) For each baghouse, regardless of type, that is applied to meet any PM or total metal HAP emissions limitation in this subpart, you must conduct inspections at their specified frequencies according to the requirements specified in paragraphs (c)(1) through (8) of this section.

(1) Monitor the pressure drop across each baghouse cell each day to ensure pressure drop is within the normal operating range identified in the manual.

(2) Confirm that dust is being removed from hoppers through weekly visual inspections or other means of ensuring the proper functioning of removal mechanisms.

(3) Check the compressed air supply for pulse-jet baghouses each day.

(4) Monitor cleaning cycles to ensure proper operation using an appropriate methodology.

(5) Check bag cleaning mechanisms for proper functioning through monthly visual inspections or equivalent means.

(6) Make monthly visual checks of bag tension on reverse air and shaker-type baghouses to ensure that bags are not kinked (kneed or bent) or lying on their sides. You do not have to make this check for shaker-type baghouses using self-tensioning (spring-loaded) devices.

(7) Confirm the physical integrity of the baghouse through quarterly visual inspections of the baghouse interior for air leaks.

(8) Inspect fans for wear, material buildup, and corrosion through quarterly visual inspections, vibration detectors, or equivalent means.

(d) For each wet scrubber subject to the operating limits in §63.7690(b)(2), you must at all times monitor the 3-hour average pressure drop and scrubber water flow rate using CPMS according to the requirements in §63.7741(c).

(e) For each combustion device subject to the operating limit in §63.7690(b)(3), you must at all times monitor the 15-minute average combustion zone temperature using a CPMS according to the requirements of §63.7741(d).

(f) For each combustion device subject to the operating limit in §63.7690(b)(4), you must at all times monitor the 3-hour average combustion zone temperature using CPMS according to the requirements in §63.7741(d).

(g) For each wet acid scrubber subject to the operating limits in §63.7690(b)(5),

(1) You must at all times monitor the 3-hour average scrubbing liquid flow rate using CPMS according to the requirements of §63.7741(e)(1); and

(2) You must at all times monitor the 3-hour average pH of the scrubber blowdown using CPMS according to the requirements in §63.7741(e)(2) or measure and record the pH of the scrubber blowdown once per production cycle using a pH probe and meter according to the requirements in §63.7741(e)(3).

(h) For one or more automated conveyor and pallet cooling lines and automated shakeout lines at a new iron and steel foundry subject to the VOHAP emissions limit in §63.7690(a)(10), you must at all times monitor the 3-hour average VOHAP concentration using a CEMS according to the requirements of §63.7741(g).

[69 FR 21923, Apr. 22, 2004, as amended at 73 FR 7221, February 7, 2008]

§ 63.7741 What are the installation, operation, and maintenance requirements for my monitors?

(a) For each capture system subject to an operating limit in §63.7690(b)(1), you must install, operate, and maintain each CPMS according to the requirements in paragraphs (a)(1) through (3) of this section.

(1) If you use a flow measurement device to monitor an operating limit parameter for a capture system, you must meet the requirements in paragraphs (a)(1)(i) through (iv) of this section.

(i) Locate the flow sensor and other necessary equipment such as straightening vanes in a position that provides a representative flow and that reduces swirling flow or abnormal velocity distributions due to upstream and downstream disturbances.

(ii) Use a flow sensor with a minimum measurement sensitivity of 2 percent of the flow rate.

(iii) Conduct a flow sensor calibration check at least semiannually.

(iv) At least monthly, visually inspect all components, including all electrical and mechanical connections, for proper functioning.

(2) If you use a pressure measurement device to monitor the operating limit parameter for a capture system, you must meet the requirements in paragraphs (a)(2)(i) through (vi) of this section.

(i) Locate the pressure sensor(s) in or as close as possible to a position that provides a representative measurement of the pressure and that minimizes or eliminates pulsating pressure, vibration, and internal and external corrosion.

(ii) Use a gauge with a minimum measurement sensitivity of 0.5 inch of water or a transducer with a minimum measurement sensitivity of 1 percent of the pressure range.

(iii) Check the pressure tap for pluggage daily. If a ‘‘non-clogging’’ pressure tap is used, check for pluggage monthly.

(iv) Using a manometer or equivalent device such as a magnahelic or other pressure indicating transmitter, check gauge and transducer calibration quarterly.

(v) Conduct calibration checks any time the sensor exceeds the manufacturer's specified maximum operating pressure range, or install a new pressure sensor.

(vi) At least monthly, visually inspect all components, including all electrical and mechanical connections, for proper functioning.

(3) Record the results of each inspection, calibration, and validation check.

(b) For each negative pressure baghouse or positive pressure baghouse equipped with a stack that is applied to meet any PM or total metal HAP emissions limitation in this subpart, you must install, operate, and maintain a bag leak detection system according to the requirements in paragraphs (b)(1) through (7) of this section.

(1) The system must be certified by the manufacturer to be capable of detecting emissions of particulate matter at concentrations of 10 milligrams per actual cubic meter (0.0044 grains per actual cubic foot) or less.

(2) The bag leak detection system sensor must provide output of relative particulate matter loadings and the owner or operator shall continuously record the output from the bag leak detection system using electronic or other means (e.g., using a strip chart recorder or a data logger).

(3) The system must be equipped with an alarm that will sound when an increase in relative particulate loadings is detected over the alarm set point established in the operation and maintenance plan, and the alarm must be located such that it can be heard by the appropriate plant personnel.

(4) The initial adjustment of the system must, at minimum, consist of establishing the baseline output by adjusting the sensitivity (range) and the averaging period of the device, and establishing the alarm set points and the alarm delay time (if applicable).

(5) Following the initial adjustment, do not adjust the sensitivity or range, averaging period, alarm set point, or alarm delay time without approval from the Administrator. Except, once per quarter, you may adjust the sensitivity of the bag leak detection system to account for seasonable effects including temperature and humidity according to the procedures in the operation and maintenance plan required by §63.7710(b).

(6) For negative pressure, induced air baghouses, and positive pressure baghouses that are discharged to the atmosphere through a stack, the bag leak detector sensor must be installed downstream of the baghouse and upstream of any wet scrubber.

(7) Where multiple detectors are required, the system's instrumentation and alarm may be shared among detectors.

(c) For each wet scrubber subject to the operating limits in §63.7690(b)(2), you must install and maintain CPMS to measure and record the pressure drop and scrubber water flow rate according to the requirements in paragraphs (c)(1) and (2) of this section.

(1) For each CPMS for pressure drop you must:

(i) Locate the pressure sensor in or as close as possible to a position that provides a representative measurement of the pressure drop and that minimizes or eliminates pulsating pressure, vibration, and internal and external corrosion.

(ii) Use a gauge with a minimum measurement sensitivity of 0.5 inch of water or a transducer with a minimum measurement sensitivity of 1 percent of the pressure range.

(iii) Check the pressure tap for pluggage daily. If a ‘‘non-clogging’’ pressure tap is used, check for pluggage monthly

(iv) Using a manometer or equivalent device such as a magnahelic or other pressure indicating transmitter, check gauge and transducer calibration quarterly.

(v) Conduct calibration checks any time the sensor exceeds the manufacturer's specified maximum operating pressure range, or install a new pressure sensor.

(vi) At least monthly, visually inspect all components, including all electrical and mechanical connections, for proper functioning.

(2) For each CPMS for scrubber liquid flow rate, you must:

(i) Locate the flow sensor and other necessary equipment in a position that provides a representative flow and that reduces swirling flow or abnormal velocity distributions due to upstream and downstream disturbances.

(ii) Use a flow sensor with a minimum measurement sensitivity of 2 percent of the flow rate.

(iii) Conduct a flow sensor calibration check at least semiannually according to the manufacturer's instructions.

(iv) At least monthly, visually inspect all components, including all electrical and mechanical connections, for proper functioning.

(d) For each combustion device subject to the operating limit in §63.7690(b)(3) or (4), you must install and maintain a CPMS to measure and record the combustion zone temperature according to the requirements in paragraphs (d)(1) through (8) of this section.

(1) Locate the temperature sensor in a position that provides a representative temperature.

(2) For a noncryogenic temperature range, use a temperature sensor with a minimum tolerance of 2.2 °C or 0.75 percent of the temperature value, whichever is larger.

(3) For a cryogenic temperature range, use a temperature sensor with a minimum tolerance of 2.2 °C or 2 percent of the temperature value, whichever is larger.

(4) Shield the temperature sensor system from electromagnetic interference and chemical contaminants.

(5) If you use a chart recorder, it must have a sensitivity in the minor division of at least 20 °F.

(6) Perform an electronic calibration at least semiannually according to the procedures in the manufacturer's owners manual. Following the electronic calibration, conduct a temperature sensor validation check, in which a second or redundant temperature sensor placed nearby the process temperature sensor must yield a reading within 16.7 °C of the process temperature sensor's reading.

(7) Conduct calibration and validation checks any time the sensor exceeds the manufacturer's specified maximum operating temperature range, or install a new temperature sensor.

(8) At least monthly, visually inspect all components, including all electrical and mechanical connections, for proper functioning.

(e) For each wet acid scrubber subject to the operating limits in §63.7690(b)(5), you must:

(1) Install and maintain CPMS to measure and record the scrubbing liquid flow rate according to the requirements in paragraph (c)(2) of this section; and

(2) Install and maintain CPMS to measure and record the pH of the scrubber blowdown according to the requirements in paragraph (e)(2)(i) through (iv) of this section.

(i) Locate the pH sensor in a position that provides a representative measurement of the pH and that minimizes or eliminates internal and external corrosion.

(ii) Use a gauge with a minimum measurement sensitivity of 0.1 pH or a transducer with a minimum measurement sensitivity of 5 percent of the pH range.

(iii) Check gauge calibration quarterly and transducer calibration monthly using a manual pH gauge.

(iv) At least monthly, visually inspect all components, including all electrical and mechanical connections, for proper functioning.

(3) As an alternative to the CPMS required in paragraph (e)(2) of this section, you may use a pH probe to extract a sample for analysis by a pH meter that meets the requirements in paragraphs (e)(3)(i) through (iii) of this section.

(i) The pH meter must have a range of at least 1 to 5 or more;

(ii) The pH meter must have an accuracy of ±0.1; and

(iii) The pH meter must have a resolution of at least 0.1 pH.

(f) You must operate each CPMS used to meet the requirements of this subpart according to the requirements specified in paragraphs (f)(1) through (3) of this section.

(1) Each CPMS must complete a minimum of one cycle of operation for each successive 15-minute period. You must have a minimum of three of the required four data points to constitute a valid hour of data.

(2) Each CPMS must have valid hourly data for 100 percent of every averaging period.

(3) Each CPMS must determine and record the hourly average of all recorded readings and the 3-hour average of all recorded readings.

(g) For each automated conveyor and pallet cooling line and automated shakeout line at a new iron and steel foundry subject to the VOHAP emissions limit in §63.7690(a)(10), you must install, operate, and maintain a CEMS to measure and record the concentration of VOHAP emissions according to the requirements in paragraphs (g)(1) through (3) of this section.

(1) You must install, operate, and maintain each CEMS according to Performance Specification 8 in 40 CFR part 60, appendix B.

(2) You must conduct a performance evaluation of each CEMS according to the requirements of §63.8 and Performance Specification 8 in 40 CFR part 60, appendix B.

(3) You must operate each CEMS according to the requirements specified in paragraph (g)(3)(i) through (iv) of this section.

(i) As specified in §63.8(c)(4)(ii), each CEMS must complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period.

(ii) You must reduce CEMS data as specified in §63.8(g)(2).

(iii) Each CEMS must determine and record the 3-hour average emissions using all the hourly averages collected for periods during which the CEMS is not out-of-control.

(iv) Record the results of each inspection, calibration, and validation check.

[69 FR 21923, Apr. 22, 2004, as amended at 73 FR 7221, February 7, 2008]

§ 63.7742 How do I monitor and collect data to demonstrate continuous compliance?

(a) Except for monitoring malfunctions, associated repairs, and required quality assurance or control activities (including as applicable, calibration checks and required zero and span adjustments), you must monitor continuously (or collect data at all required intervals) any time a source of emissions is operating.

(b) You may not use data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities in data averages and calculations used to report emissions or operating levels or to fulfill a minimum data availability requirement, if applicable. You must use all the data collected during all other periods in assessing compliance.

(c) A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring system to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions.

§ 63.7743 How do I demonstrate continuous compliance with the emissions limitations that apply to me?

(a) You must demonstrate continuous compliance by meeting the applicable conditions in paragraphs (a)(1) through (12) of this section. When alternative emissions limitations are provided for a given emissions source, you must comply with the alternative emissions limitation most recently selected as your compliance alternative.

(1) For each electric arc metal melting furnace, electric induction metal melting furnace, or scrap preheater at an existing iron and steel foundry,

(i) Maintaining the average PM concentration in the exhaust stream at or below 0.005 gr/dscf; or

(ii) Maintaining the average total metal HAP concentration in the exhaust stream at or below 0.0004 gr/dscf.

(2) For each cupola metal melting furnace at an existing iron and steel foundry,

(i) Maintaining the average PM concentration in the exhaust stream at or below 0.006 gr/dscf; or

(ii) Maintaining the average total metal HAP concentration in the exhaust stream at or below 0.0005 gr/dscf; or

(iii) Maintaining the average PM mass emissions rate at or below 0.10 pound of PM per ton (lb/ton) of metal charged; or

(iv) Maintaining the average total metal HAP mass emissions rate at or below 0.008 pound of total metal HAP per ton (lb/ton) of metal charged.

(3) For each cupola metal melting furnace or electric arc metal melting furnace at new iron and steel foundry, (i) Maintaining the average PM concentration in the exhaust stream at or below 0.002 gr/dscf; or

(ii) Maintaining the average total metal HAP concentration in the exhaust stream at or below 0.0002 gr/dscf.

(4) For each electric induction metal melting furnace or scrap preheater at a new iron and steel foundry,

(i) Maintaining the average PM concentration in the exhaust stream at or below 0.001 gr/dscf; or

(ii) Maintaining the average total metal HAP concentration in the exhaust stream at or below 0.00008 gr/dscf.

(5) For each pouring station at an existing iron and steel foundry,

(i) Maintaining the average PM concentration in the exhaust stream at or below 0.010 gr/dscf; or

(ii) Maintaining the average total metal HAP concentration in the exhaust stream at or below 0.0008 gr/dscf.

(6) For each pouring area or pouring station at a new iron and steel foundry,

(i) Maintaining the average PM concentration in the exhaust stream at or below 0.002 gr/dscf; or

(ii) Maintaining the average total metal HAP concentration in the exhaust stream at or below 0.0002 gr/dscf.

(7) For each building or structure housing any iron and steel foundry emissions source at the iron and steel foundry, maintaining the opacity of any fugitive emissions from foundry operations discharged to the atmosphere at or below 20 percent opacity (6-minute average), except for one 6-minute average per hour that does not exceed 27 percent opacity.

(8) For each cupola metal melting furnace at a new or existing iron and steel foundry, maintaining the average VOHAP concentration in the exhaust stream at or below 20 ppmv corrected to 10 percent oxygen.

(9) For each scrap preheater at an existing new iron and steel foundry that does not comply with the work practice standard in §63.7700(e)(1) or (2) and for each scrap preheater at a new iron and steel foundry that does not comply with the work practice standard in §63.7700(f), maintaining the average VOHAP concentration in the exhaust stream at or below 20 ppmv.

(10) For one or more automated conveyor and pallet cooling lines or automated shakeout lines that use a sand mold system at a new iron and steel foundry,

(i) Maintaining the 3-hour flow-weighted average VOHAP concentration in the exhaust stream at or below 20 ppmv;

(ii) Inspecting and maintaining each CEMS according to the requirements of §63.7741(g) and recording all information needed to document conformance with these requirements; and

(iii) Collecting and reducing monitoring data for according to the requirements of §63.7741(g) and recording all information needed to document conformance with these requirements.

(11) For each TEA cold box mold or core making line at a new or existing iron and steel foundry, maintaining a 99 percent reduction in the VOHAP concentration in the exhaust stream or maintaining the average VOHAP concentration in the exhaust stream at or below 1 ppmv.

(12) Conducting subsequent performance tests at least every 5 years for each emissions source subject to an emissions limit for PM, total metal HAP, VOHAP, or TEA in §63.7690(a) and subsequent

performance tests at least every 6 months for each building or structure subject to the opacity limit in §63.7690(a)(7).

(b) You must demonstrate continuous compliance for each capture system subject to an operating limit in §63.7690(b)(1) by meeting the requirements in paragraphs (b)(1) and (2) of this section.

(1) Operating the capture system at or above the lowest values or settings established for the operating limits in your operation and maintenance plan; and

(2) Monitoring the capture system according to the requirements in §63.7740(a) and collecting, reducing, and recording the monitoring data for each of the operating limit parameters according to the applicable requirements in this subpart.

(c) For each baghouse,

(1) Inspecting and maintaining each baghouse according to the requirements of §63.7740(c)(1) through (8) and recording all information needed to document conformance with these requirements; and

(2) If the baghouse is equipped with a bag leak detection system, maintaining records of the times the bag leak detection system sounded, and for each valid alarm, the time you initiated corrective action, the corrective action taken, and the date on which corrective action was completed.

(d) For each wet scrubber that is subject to the operating limits in §63.7690(b)(2), you must demonstrate continuous compliance by:

(1) Maintaining the 3-hour average pressure drop and 3-hour average scrubber water flow rate at levels no lower than those established during the initial or subsequent performance test;

(2) Inspecting and maintaining each CPMS according to the requirements of §63.7741(c) and recording all information needed to document conformance with these requirements; and

(3) Collecting and reducing monitoring data for pressure drop and scrubber water flow rate according to the requirements of §63.7741(f) and recording all information needed to document conformance with these requirements.

(e) For each combustion device that is subject to the operating limit in §63.7690(b)(3), you must demonstrate continuous compliance by:

(1) Maintaining the 15-minute average combustion zone temperature at a level no lower than 1,300 °F;

(2) Inspecting and maintaining each CPMS according to the requirements of §63.7741(d) and recording all information needed to document conformance with these requirements; and

(3) Collecting and reducing monitoring data for combustion zone temperature according to the requirements of §63.7741(f) and recording all information needed to document conformance with these requirements.

(f) For each combustion device that is subject to the operating limit in §63.7690(b)(4), you must demonstrate continuous compliance by:

(1) Maintaining the 3-hour average combustion zone temperature at a level no lower that established during the initial or subsequent performance test;

(2) Inspecting and maintaining each CPMS according to the requirements of §63.7741(d) and recording all information needed to document conformance with these requirements; and

(3) Collecting and reducing monitoring data for combustion zone temperature according to the requirements of §63.7741(f) and recording all information needed to document conformance with these requirements.

(g) For each acid wet scrubber subject to the operating limits in §63.7690(b)(5), you must demonstrate continuous compliance by:

(1) Maintaining the 3-hour average scrubbing liquid flow rate at a level no lower than the level established during the initial or subsequent performance test;

(2) Maintaining the 3-hour average pH of the scrubber blowdown at a level no higher than 4.5 (if measured by a CPMS) or maintaining the pH level of the scrubber blowdown during each production shift no higher than 4.5;

(3) Inspecting and maintaining each CPMS according to the requirements of §63.7741(e) and recording all information needed to document conformance with these requirements; and

(4) Collecting and reducing monitoring data for scrubbing liquid flow rate and scrubber blowdown pH according to the requirements of §63.7741(f) and recording all information needed to document conformance with these requirements. If the pH level of the scrubber blowdown is measured by a probe and meter, you must demonstrate continuous compliance by maintaining records that document the date, time, and results of each sample taken for each production shift.

[69 FR 21923, Apr. 22, 2004, as amended at 73 FR 7222, February 7, 2008]

§ 63.7744 How do I demonstrate continuous compliance with the work practice standards that apply to me?

(a) You must maintain records that document continuous compliance with the certification requirements in §63.7700(b) or with the procedures in your scrap selection and inspection plan required in §63.7700(c). Your records documenting compliance with the scrap selection and inspection plan must include a copy (kept onsite) of the procedures used by the scrap supplier for either removing accessible mercury switches or for purchasing automobile bodies that have had mercury switches removed, as applicable.

(b) You must keep records of the chemical composition of all catalyst binder formulations applied in each furan warm box mold or core making line at a new or existing iron and steel foundry to demonstrate continuous compliance with the requirements in §63.7700(d).

(c) For a scrap preheater at an existing iron and steel foundry, you must operate and maintain each gas-fired preheater such that the flame directly contacts the scrap charged to demonstrate continuous compliance with the requirement §63.7700(e)(1). If you choose to meet the work practice standard in §63.7700(e)(2), you must keep records to document that the scrap preheater charges only material that is subject to and in compliance with the scrap certification requirements in §63.7700(b).

(d) For a scrap preheater at a new iron and steel foundry, you must keep records to document that each scrap preheater charges only material that is subject to and in compliance with the scrap certification requirements in §63.7700(b) to demonstrate continuous compliance with the requirement in §63.7700(f).

§ 63.7745 How do I demonstrate continuous compliance with the operation and maintenance requirements that apply to me?

(a) For each capture system and control device for an emissions source subject to an emissions limit in §63.7690(a), you must demonstrate continuous compliance with the operation and maintenance requirements of §63.7710 by:

(1) Making monthly inspections of capture systems and initiating corrective action according to §63.7710(b)(1) and recording all information needed to document conformance with these requirements;

(2) Performing preventative maintenance for each control device according to the preventive maintenance plan required by §63.7710(b)(3) and recording all information needed to document conformance with these requirements;

(3) Operating and maintaining each bag leak detection system according to the site-specific monitoring plan required by §63.7710(b)(4) and recording all information needed to demonstrate conformance with these requirements;

(4) Initiating and completing corrective action for a bag leak detection system alarm according to the corrective action plan required by §63.7710(b)(5) and recording all information needed to document conformance with these requirements; and

(5) Igniting gases from mold vents according to the procedures in the plan required by §63.7710(b)(6). (Any instance where you fail to follow the procedures is a deviation that must be included in your semiannual compliance report.)

(b) You must maintain a current copy of the operation and maintenance plans required by §63.7710(b) onsite and available for inspection upon request. You must keep the plans for the life of the iron and steel foundry or until the iron and steel foundry is no longer subject to the requirements of this subpart.

§ 63.7746 What other requirements must I meet to demonstrate continuous compliance?

(a) Deviations. You must report each instance in which you did not meet each emissions limitation in §63.7690 (including each operating limit) that applies to you. This requirement includes periods of startup, shutdown, and malfunction. You also must report each instance in which you did not meet each work practice standard in §63.7700 and each operation and maintenance requirement of §63.7710 that applies to you. These instances are deviations from the emissions limitations, work practice standards, and operation and maintenance requirements in this subpart. These deviations must be reported according to the requirements of §63.7751.

(b) Startups, shutdowns, and malfunctions. (1) Consistent with the requirements of §§63.6(e) and 63.7(e)(1), deviations that occur during a period of startup, shutdown, or malfunction are not violations if you demonstrate to the Administrator's satisfaction that you were operating in accordance with §63.6(e)(1).

(2) The Administrator will determine whether deviations that occur during a period of startup, shutdown, or malfunction are violations according to the provisions in §63.6(e).

[69 FR 21923, Apr. 22, 2004, as amended at 71 FR 20468, Apr. 20, 2006]

§ 63.7747 How do I apply for alternative monitoring requirements for a continuous emissions monitoring system?

(a) You may request an alternative monitoring method to demonstrate compliance with the VOHAP emissions limits in §63.7690(a)(10) for automated pallet cooling lines or automated shakeout lines at a new iron and steel foundry according to the procedures in this section.

(b) You can request approval to use an alternative monitoring method in the notification of construction or reconstruction for new sources, or at any time.

(c) You must submit a monitoring plan that includes a description of the control technique or pollution prevention technique, a description of the continuous monitoring system or method including appropriate operating parameters that will be monitored, test results demonstrating compliance with the emissions limit, operating limit(s) (if applicable) determined according to the test results, and the frequency of measuring and recording to establish continuous compliance. If applicable, you must also include operation and maintenance requirements for the monitors.

(d) The monitoring plan is subject to approval by the Administrator. Use of the alternative monitoring method must not begin until approval is granted by the Administrator.

Notifications, Reports, and Records

§ 63.7750 What notifications must I submit and when?

(a) You must submit all of the notifications required by §§63.6(h)(4) and (5), 63.7(b) and (c); 63.8(e); 63.8(f)(4) and (6); 63.9(b) through (h) that apply to you by the specified dates.

(b) As specified in §63.9(b)(2), if you start up your iron and steel foundry before April 22, 2004, you must submit your initial notification no later than August 20, 2004.

(c) If you start up your new iron and steel foundry on or after April 22, 2004, you must submit your initial notification no later than 120 calendar days after you become subject to this subpart.

(d) If you are required to conduct a performance test, you must submit a notification of intent to conduct a performance test at least 60 calendar days before the performance test is scheduled to begin as required by §63.7(b)(1).

(e) If you are required to conduct a performance test or other initial compliance demonstration, you must submit a notification of compliance status according to the requirements of §63.9(h)(2)(ii). For opacity performance tests, the notification of compliance status may be submitted with the semiannual compliance report in §63.7751(a) and (b) or the semiannual part 70 monitoring report in § 63.7551(d).

(1) For each initial compliance demonstration that does not include a performance test, you must submit the notification of compliance status before the close of business on the 30th calendar day following completion of the initial compliance demonstration.

(2) For each initial compliance demonstration that does include a performance test, you must submit the notification of compliance status, including the performance test results, before the close of business on the 60th calendar day following the completion of the performance test according to the requirement specified in §63.10(d)(2).

§ 63.7751 What reports must I submit and when?

(a) Compliance report due dates. Unless the Administrator has approved a different schedule, you must submit a semiannual compliance report to your permitting authority according to the requirements specified in paragraphs (a)(1) through (5) of this section.

(1) The first compliance report must cover the period beginning on the compliance date that is specified for your iron and steel foundry by §63.7683 and ending on June 30 or December 31, whichever date comes first after the compliance date that is specified for your iron and steel foundry.

(2) The first compliance report must be postmarked or delivered no later than July 31 or January 31, whichever date comes first after your first compliance report is due.

(3) Each subsequent compliance report must cover the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31.

(4) Each subsequent compliance report must be postmarked or delivered no later than July 31 or January 31, whichever date comes first after the end of the semiannual reporting period.

(5) For each iron and steel foundry that is subject to permitting regulations pursuant to 40 CFR part 70 or 40 CFR part 71, and if the permitting authority has established dates for submitting semiannual reports pursuant to 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A), you may submit the first and subsequent compliance reports according to the dates the permitting authority has established instead of the dates specified in paragraphs (a)(1) through (4) of this section.

(b) Compliance report contents. Each compliance report must include the information specified in paragraphs (b)(1) through (3) of this section and, as applicable, paragraphs (b)(4) through (8) of this section.

(1) Company name and address.

(2) Statement by a responsible official, with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report.

(3) Date of report and beginning and ending dates of the reporting period.

(4) If you had a startup, shutdown, or malfunction during the reporting period and you took action consistent with your startup, shutdown, and malfunction plan, the compliance report must include the information in §63.10(d)(5)(i).

(5) If there were no deviations from any emissions limitations (including operating limit), work practice standards, or operation and maintenance requirements, a statement that there were no deviations from the emissions limitations, work practice standards, or operation and maintenance requirements during the reporting period.

(6) If there were no periods during which a continuous monitoring system (including a CPMS or CEMS) was out-of-control as specified by §63.8(c)(7), a statement that there were no periods during which the CPMS was out-of-control during the reporting period.

(7) For each deviation from an emissions limitation (including an operating limit) that occurs at an iron and steel foundry for which you are not using a continuous monitoring system (including a CPMS or CEMS) to comply with an emissions limitation or work practice standard required in this subpart, the compliance

report must contain the information specified in paragraphs (b)(1) through (4) and (b)(7)(i) and (ii) of this section. This requirement includes periods of startup, shutdown, and malfunction.

(i) The total operating time of each emissions source during the reporting period.

(ii) Information on the number, duration, and cause of deviations (including unknown cause) as applicable and the corrective action taken.

(8) For each deviation from an emissions limitation (including an operating limit) or work practice standard occurring at an iron and steel foundry where you are using a continuous monitoring system (including a CPMS or CEMS) to comply with the emissions limitation or work practice standard in this subpart, you must include the information specified in paragraphs (b)(1) through (4) and (b)(8)(i) through (xi) of this section. This requirement includes periods of startup, shutdown, and malfunction.

(i) The date and time that each malfunction started and stopped.

(ii) The date and time that each continuous monitoring system was inoperative, except for zero (low-level) and high-level checks.

(iii) The date, time, and duration that each continuous monitoring system was out-of-control, including the information in §63.8(c)(8).

(iv) The date and time that each deviation started and stopped, and whether each deviation occurred during a period of startup, shutdown, or malfunction or during another period.

(v) A summary of the total duration of the deviations during the reporting period and the total duration as a percent of the total source operating time during that reporting period.

(vi) A breakdown of the total duration of the deviations during the reporting period into those that are due to startup, shutdown, control equipment problems, process problems, other known causes, and unknown causes.

(vii) A summary of the total duration of continuous monitoring system downtime during the reporting period and the total duration of continuous monitoring system downtime as a percent of the total source operating time during the reporting period.

(viii) A brief description of the process units.

(ix) A brief description of the continuous monitoring system.

(x) The date of the latest continuous monitoring system certification or audit.

(xi) A description of any changes in continuous monitoring systems, processes, or controls since the last reporting period.

(c) Immediate startup, shutdown, and malfunction report. If you had a startup, shutdown, or malfunction during the semiannual reporting period that was not consistent with your startup, shutdown, and malfunction plan and the source exceeds any applicable emissions limitation in § 63.7690, you must submit an immediate startup, shutdown, and malfunction report according to the requirements of §63.10(d)(5)(ii).

(d) Part 70 monitoring report. If you have obtained a title V operating permit for an iron and steel foundry pursuant to 40 CFR part 70 or 40 CFR part 71, you must report all deviations as defined in this subpart in the semiannual monitoring report required by 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A). If you submit a compliance report for an iron and steel foundry along with, or as part of, the semiannual monitoring report required by 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A), and the compliance report includes all the required information concerning deviations from any emissions limitation or operation and maintenance requirement in this subpart, submission of the compliance report satisfies any obligation to report the same deviations in the semiannual monitoring report. However, submission of a compliance report does not otherwise affect any obligation you may have to report deviations from permit requirements for an iron and steel foundry to your permitting authority.

[69 FR 21923, Apr. 22, 2004, as amended at 73 FR 7222, February 7, 2008]

§ 63.7752 What records must I keep?

(a) You must keep the records specified in paragraphs (a)(1) through (4) of this section:

(1) A copy of each notification and report that you submitted to comply with this subpart, including all documentation supporting any initial notification or notification of compliance status that you submitted, according to the requirements of §63.10(b)(2)(xiv).

(2) The records specified in §63.6(e)(3)(iii) through (v) related to startup, shutdown, and malfunction.

(3) Records of performance tests and performance evaluations as required by §63.10(b)(2)(viii).

(4) Records of the annual quantity of each chemical binder or coating material used to coat or make molds and cores, the Material Data Safety Sheet or other documentation that provides the chemical composition of each component, and the annual quantity of HAP used in these chemical binder or coating materials at the foundry as calculated from the recorded quantities and chemical compositions (from Material Data Safety Sheets or other documentation).

(b) You must keep the following records for each CEMS.

(1) Records described in §63.10(b)(2)(vi) through (xi).

(2) Previous (i.e., superseded) versions of the performance evaluation plan as required in §63.8(d)(3).

(3) Request for alternatives to relative accuracy tests for CEMS as required in §63.8(f)(6)(i).

(4) Records of the date and time that each deviation started and stopped, and whether the deviation occurred during a period of startup, shutdown, or malfunction or during another period.

(c) You must keep the records required by §§63.7743, 63.7744, and 63.7745 to show continuous compliance with each emissions limitation, work practice standard, and operation and maintenance requirement that applies to you.

[69 FR 21923, Apr. 22, 2004, as amended at 73 FR 7222, February 7, 2008]

§ 63.7753 In what form and for how long must I keep my records?

(a) You must keep your records in a form suitable and readily available for expeditious review, according to the requirements of §63.10(b)(1).

(b) As specified in §63.10(b)(1), you must keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record.

(c) You must keep each record onsite for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record according to the requirements in §63.10(b)(1). You can keep the records for the previous 3 years offsite.

Other Requirements and Information

§ 63.7760 What parts of the General Provisions apply to me?

Table 1 to this subpart shows which parts of the General Provisions in §§63.1 through 63.15 apply to you.

§ 63.7761 Who implements and enforces this subpart?

(a) This subpart can be implemented and enforced by us, the U.S. Environmental Protection Agency (EPA), or a delegated authority such as your State, local, or tribal agency. If the U.S. EPA Administrator has delegated authority to your State, local, or tribal agency, then that agency, in addition to the U.S. EPA, has the authority to implement and enforce this subpart. You should contact your U.S. EPA Regional Office to find out if implementation and enforcement of this subpart is delegated to your State, local, or tribal agency.

(b) In delegating implementation and enforcement authority of this subpart to a State, local, or tribal agency under 40 CFR part 63, subpart E, the authorities contained in paragraph (c) of this section are retained by the Administrator of the U.S. EPA and are not transferred to the State, local, or tribal agency.

(c) The authorities that cannot be delegated to State, local, or tribal agencies are specified in paragraphs (c)(1) through (4) of this section.

(1) Approval of alternatives to non-opacity emissions limitations in §63.7690 and work practice standards in §63.7700 under §63.6(g).

(2) Approval of major alternatives to test methods under §63.7(e)(2)(ii) and (f) and as defined in §63.90.

(3) Approval of major alternatives to monitoring under §63.8(f) and as defined in §63.90.

(4) Approval of major alternatives to recordkeeping and reporting under §63.10(f) and as defined in §63.90.

Definitions

§ 63.7765 What definitions apply to this subpart?

Terms used in this subpart are defined in the Clean Air Act (CAA), in §63.2, and in this section.

Automated conveyor and pallet cooling line means any dedicated conveyor line or area used for cooling molds received from pouring stations.

Automated shakeout line means any mechanical process unit designed for and dedicated to separating a casting from a mold. These mechanical processes include, but are not limited to, shaker decks, rotary separators, and high-frequency vibration units. Automated shakeout lines do not include manual

processes for separating a casting from a mold, such as personnel using a hammer, chisel, pick ax, sledge hammer, or jackhammer.

Bag leak detection system means a system that is capable of continuously monitoring relative particulate matter (dust) loadings in the exhaust of a baghouse to detect bag leaks and other upset conditions. A bag leak detection system includes, but is not limited to, an instrument that operates on triboelectric, electrodynamic, light scattering, light transmittance, or other effect to continuously monitor relative particulate matter loadings.

Binder chemical means a component of a system of chemicals used to bind sand together into molds, mold sections, and cores through chemical reaction as opposed to pressure.

Capture system means the collection of components used to capture gases and fumes released from one or more emissions points and then convey the captured gas stream to a control device or to the atmosphere. A capture system may include, but is not limited to, the following components as applicable to a given capture system design: duct intake devices, hoods, enclosures, ductwork, dampers, manifolds, plenums, and fans.

Cold box mold or core making line means a mold or core making line in which the formed aggregate is hardened by catalysis with a gas.

Combustion device means an afterburner, thermal incinerator, or scrap preheater.

Conveyance means the system of equipment that is designed to capture pollutants at the source, convey them through ductwork, and exhaust them using forced ventilation. A conveyance may, but does not necessarily include, control equipment designed to reduce emissions of the pollutants. Emissions that are released through windows, vents, or other general building ventilation or exhaust systems are not considered to be discharged through a conveyance.

Cooling means the process of molten metal solidification within the mold and subsequent temperature reduction prior to shakeout.

Cupola means a vertical cylindrical shaft furnace that uses coke and forms of iron and steel such as scrap and foundry returns as the primary charge components and melts the iron and steel through combustion of the coke by a forced upward flow of heated air.

Deviation means any instance in which an affected source or an owner or operator of such an affected source:

(1) Fails to meet any requirement or obligation established by this subpart including, but not limited to, any emissions limitation (including operating limits), work practice standard, or operation and maintenance requirement;

(2) Fails to meet any term or condition that is adopted to implement an applicable requirement in this subpart and that is included in the operating permit for any iron and steel foundry required to obtain such a permit; or

(3) Fails to meet any emissions limitation (including operating limits) or work practice standard in this subpart during startup, shutdown, or malfunction, regardless of whether or not such failure is permitted by this subpart. A deviation is not always a violation. The determination of whether a deviation constitutes a violation of the standard is up to the discretion of the entity responsible for enforcement of the standards.

Electric arc furnace means a vessel in which forms of iron and steel such as scrap and foundry returns are melted through resistance heating by an electric current flowing through the arcs formed between the electrodes and the surface of the metal and also flowing through the metal between the arc paths.

Electric induction furnace means a vessel in which forms of iron and steel such as scrap and foundry returns are melted though resistance heating by an electric current that is induced in the metal by passing an alternating current through a coil surrounding the metal charge or surrounding a pool of molten metal at the bottom of the vessel.

Emissions limitation means any emissions limit or operating limit.

Exhaust stream means gases emitted from a process through a conveyance as defined in this subpart.

Free organic liquids means material that fails the paint filter test by EPA Method 9095A (incorporated by reference—see §63.14). That is, if any portion of the material passes through and drops from the filter within the 5-minute test period, the material contains free liquids.

Fresh acid solution means a sulfuric acid solution used for the control of triethylamine emissions that has a pH of 2.0 or less.

Fugitive emissions means any pollutant released to the atmosphere that is not discharged through a conveyance as defined in this subpart.

Furan warm box mold or core making line means a mold or core making line in which the binder chemical system used is that system commonly designated as a furan warm box system by the foundry industry.

Hazardous air pollutant means any substance on the list originally established in 112(b)(1) of the CAA and subsequently amended as published in the Code of Federal Regulations.

Iron and steel foundry means a facility or portion of a facility that melts scrap, ingot, and/or other forms of iron and/or steel and pours the resulting molten metal into molds to produce final or near final shape products for introduction into commerce. Research and development facilities and operations that only produce non-commercial castings are not included in this definition.

Metal melting furnace means a cupola, electric arc furnace, or electric induction furnace that converts scrap, foundry returns, and/or other solid forms of iron and/or steel to a liquid state. This definition does not include a holding furnace, an argon oxygen decarburization vessel, or ladle that receives molten metal from a metal melting furnace, to which metal ingots or other material may be added to adjust the metal chemistry.

Mold or core making line means the collection of equipment that is used to mix an aggregate of sand and binder chemicals, form the aggregate into final shape, and harden the formed aggregate. This definition does not include a line for making green sand molds or cores.

Mold vent means an intentional opening in a mold through which gases containing pyrolysis products of organic mold and core constituents produced by contact with or proximity to molten metal normally escape the mold during and after metal pouring.

Off blast means those periods of cupola operation when the cupola is not actively being used to produce molten metal. Off blast conditions include cupola startup when air is introduced to the cupola to preheat the sand bed and other cupola startup procedures as defined in the startup, shutdown, and malfunction plan. Off blast conditions also include idling conditions when the blast air is turned off or down to the point that the cupola does not produce additional molten metal.

On blast means those periods of cupola operation when combustion (blast) air is introduced to the cupola furnace and the furnace is capable of producing molten metal. On blast conditions are characterized by both blast air introduction and molten metal production.

Pouring area means an area, generally associated with floor and pit molding operations, in which molten metal is brought to each individual mold. Pouring areas include all pouring operations that do not meet the definition of a pouring station.

Pouring station means the fixed location to which molds are brought in a continuous or semicontinuous manner to receive molten metal, after which the molds are moved to a cooling area.

Responsible official means responsible official as defined in §63.2.

Scrap preheater means a vessel or other piece of equipment in which metal scrap that is to be used as melting furnace feed is heated to a temperature high enough to eliminate volatile impurities or other tramp materials by direct flame heating or similar means of heating. Scrap dryers, which solely remove moisture from metal scrap, are not considered to be scrap preheaters for purposes of this subpart.

Scrubber blowdown means liquor or slurry discharged from a wet scrubber that is either removed as a waste stream or processed to remove impurities or adjust its composition or pH before being returned to the scrubber.

Total metal HAP means, for the purposes of this subpart, the sum of the concentrations of antimony, arsenic, beryllium, cadmium, chromium, cobalt, lead, manganese, mercury, nickel, and selenium as measured by EPA Method 29 (40 CFR part 60, appendix A). Only the measured concentration of the listed analytes that are present at concentrations exceeding one-half the quantitation limit of the analytical method are to be used in the sum. If any of the analytes are not detected or are detected at concentrations less than one-half the quantitation limit of the analytical method, the concentration of those analytes will be assumed to be zero for the purposes of calculating the total metal HAP for this subpart.

Work practice standard means any design, equipment, work practice, or operational standard, or combination thereof, that is promulgated pursuant to section 112(h) of the CAA.

[69 FR 21923, Apr. 22, 2004, as amended at 70 FR 29404, May 20, 2005; 73 FR 7222, February 7, 2008]

Table 1 to Subpart EEEEE of Part 63—Applicability of General Provisions to Subpart EEEEE

[As stated in §63.7760, you must meet each requirement in the following table that applies to you.]

Citation	Subject	Applies to Subpart EEEEE?	Explanation
63.1	Applicability	Yes	
63.2	Definitions	Yes	
63.3	Units and abbreviations	Yes	
63.4	Prohibited activities	Yes	
63.5	Construction/reconstruction	Yes	

63.6(a)–(g)	Compliance with standards and maintenance requirements	Yes	
63.6(h)	Opacity and visible emissions standards	Yes	
63.6(i)–(j)	Compliance extension and Presidential compliance exemption	Yes	
63.7(a)(1)–(a)(2)	Applicability and performance test dates	No	Subpart EEEEE specifies applicability and performance test dates.
63.7(a)(3), (b)–(h)	Performance testing requirements	Yes	
63.8(a)(1)–(a)(3), (b), (c)(1)–(c)(3), (c)(6)–(c)(8), (d), (e), (f)(1)–(f)(6), (g)(1)–(g)(4)	Monitoring requirements	Yes	Subpart EEEEE specifies requirements for alternative monitoring systems.
63.8(a)(4)	Additional monitoring requirements for control devices in §63.11	No	Subpart EEEEE does not require flares.
63.8(c)(4)	Continuous monitoring system (CMS) requirements	No	Subpart EEEEE specifies requirements for operation of CMS and CEMS.
63.8(c)(5)	Continuous opacity monitoring system (COMS) Minimum Procedures	No	Subpart EEEEE does not require COMS.
63.8(g)(5)	Data reduction	No	Subpart EEEEE specifies data reduction requirements.
63.9	Notification requirements	Yes	Except: for opacity performance tests, Subpart EEEEE allows the notification of compliance status to be submitted with the semiannual compliance report or the semiannual part 70 monitoring report.
63.10(a)–(b), (c)(1)–(6), (c)(9)–(15), (d)(1)–(2), (e)(1)–(2), (f)	Recordkeeping and reporting requirements	Yes	Additional records for CMS in §63.10(c)(1)–(6), (9)–(15) apply only to CEMS.
63.10(c)(7)–(8)	Records of excess emissions and parameter monitoring exceedances for CMS	No	Subpart EEEEE specifies records requirements.
63.10(d)(3)	Reporting opacity or visible emissions observations	Yes	
63.10(e)(3)	Excess emissions reports	No	Subpart EEEEE specifies reporting requirements.
63.10(e)(4)	Reporting COMS data	No	Subpart EEEEE data does

			not require COMS.
63.11	Control device requirements	No	Subpart EEEEE does not require flares.
63.12	State authority and delegations	Yes	
63.13–63.15	Addresses of State air pollution control agencies and EPA regional offices. Incorporation by reference. Availability of information and confidentiality	Yes	

[69 FR 21923, Apr. 22, 2004, as amended at 73 FR 7223, February 7, 2008]

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for a PSD/Part 70 Significant Source Modification and Part 70 Significant Permit Modification

Source Description and Location

Source Name:	**Waupaca Foundry, Inc. Plant 5**
Source Location:	**9856 State Highway 66, Tell City, Indiana 47586**
County:	**Perry**
SIC Code:	**3321 (Gray and Ductile Iron Foundries)**
Significant Source Modification No.:	**123-33464-00019**
Significant Permit Modification No.:	**123-33469-00019**
Permit Reviewer:	**Sarah Street and Mehul Sura**

Existing Approvals

The source was issued Part 70 Operating Permit Renewal No. T123-27047-00019 on July 23, 2009. The source has since received the following approvals:

(a) Significant Permit Modification No. 123-28470-00019, issued on November 20, 2009.

(b) Significant Source Modification No. 123-29490-00019, issued on May 10, 2011.

(c) Significant Permit Modification No. 123-29497-00019, issued on June 1, 2011.

(d) Minor Source Modification No. 123-31689-00019, issued on April 25, 2012.

(e) Minor Permit Modification No. 123-31720-00019, issued on June 29, 2012.

(f) Administrative Amendment No. 123-32226-00019, issued on August 27, 2012.

(g) PSD/Significant Source Modification No. 123-33284-00019, issued on October 15, 2013

(h) Significant Permit Modification No. 123-33300-00019, issued on November 7, 2013

County Attainment Status

The source is located in Perry County.

Pollutant	Designation
SO_2	Better than national standards.
CO	Unclassifiable or attainment effective November 15, 1990.
O_3	Unclassifiable or attainment effective June 15, 2004, for the 8-hour ozone standard.[1]
PM_{10}	Unclassifiable effective November 15, 1990.
NO_2	Cannot be classified or better than national standards.
Pb	Unclassifiable or attainment effective December 31, 2011.

[1]Unclassifiable or attainment effective October 18, 2000, for the 1-hour ozone standard which was revoked effective June 15, 2005. Unclassifiable or attainment effective April 5, 2005, for PM2.5.

(a) Ozone Standards
Volatile organic compounds (VOC) and Nitrogen Oxides (NOx) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NOx emissions are considered when evaluating the rule applicability relating to ozone. Perry County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

(b) $PM_{2.5}$
Perry County has been classified as attainment for $PM_{2.5}$. On May 8, 2008 U.S. EPA promulgated the requirements for Prevention of Significant Deterioration (PSD) for $PM_{2.5}$ emissions. These rules became effective on July 15, 2008. On May 4, 2011 the air pollution control board issued an emergency rule establishing the direct $PM_{2.5}$ significant level at ten (10) tons per year. This rule became effective, June 28, 2011. Therefore, direct $PM_{2.5}$ and SO_2 emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2. See the State Rule Applicability – Entire Source section.

(c) Other Criteria Pollutants
Perry County has been classified as attainment or unclassifiable in Indiana for all criteria pollutatnts. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

Fugitive Emissions

Since this source is classified as a secondary metal production plant, it is considered one of the twenty-eight (28) listed source categories, as specified in 326 IAC 2-2, 326 IAC 2-3, or 326 IAC 2-7. Therefore, fugitive emissions are counted toward the determination of PSD, Emission Offset, and Part 70 Permit applicability.

Source Status

The table below summarizes the potential to emit of the entire source, prior to the proposed modification, after consideration of all enforceable limits established in the effective permits:

Pollutant	Emissions (tons/year)
PM	Greater than 100
PM10	Greater than 100
SO_2	Greater than 100
NO_x	Greater than 100
VOC	Greater than 100
CO	Greater than 100

(a) This existing source is a major stationary source, under PSD (326 IAC 2-2), because PM, PM10, SO2, NOx, VOC, and CO are each emitted at a rate of 100 tons per year or more, and it is one of the twenty-eight (28) listed source categories, as specified in 326 IAC 2-2-1(gg)(1).

(b) These emissions are based upon Part 70 Renewal No. 123-27047-00019, issued on July 23, 2009.

The table below summarizes the potential to emit HAPs for the entire source, prior to the proposed modification, after consideration of all enforceable limits established in the effective permits:

HAPs	Potential To Emit (tons/year)
Single HAP	Greater than 10
Total HAPs	Greater than 25

This existing source is a major source of HAPs, as defined in 40 CFR 63.41, because HAP emissions are greater than ten (10) tons per year for a single HAP and greater than twenty-five (25) tons per year for a combination of HAPs. Therefore, this source is a major source under Section 112 of the Clean Air Act (CAA).

Description of Proposed Modification

The Office of Air Quality (OAQ) has reviewed a modification application, submitted by Waupaca Foundry, Inc. Plant 5 on July 24, 2013, relating to a modification of an existing stationary gray and ductile iron foundry.

Waupaca Foundry, Inc. is proposing to increase the peak production capacity of the Line 4 casting line operations from 27 to 40 tons per hour.

The following table summarizes the current and proposed production capacities of all processes affected by this project.

Stack	Baghouse	Process	Current Capacity (tph)	Proposed Capacity (tph)
S01	C01-C03	P16 - Line 4 Pouring/Mold Cooling	27	40
		P17 - Line 4 Shakeout	27	40
		P18 - Line 4 Cast Cooling	27	40
		P19 - Line 4 Pick & Sort	27	40
S07	C07	P20 - Line 4 Cleaning/grinding	27	40

The following is a list of the modified emission units and pollution control devices:

Phase I

(a) Line 4 (constructed in 1996, modified in 2010, approved for modification in 2014)

(1) One (1) pouring/mold cooling operation, identified as P16, with a maximum throughput of 40 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;

(2) One (1) shakeout operation, identified as P17, with a maximum throughput of 40 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;

(3) One (1) cast cooling operation, identified as P18, with a maximum throughput of 40 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;

(4) One (1) pick & sort operation, identified as P19, with a maximum throughput of 40 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;

(5) One (1) cleaning & grinding operation, identified as P20, with a maximum throughput of 40 tons per hour, using a mechanical blaster, using one (1) baghouse (C07) for particulate control, exhausting to stack S07;

Note: The three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01, are common to several other foundry operations. The one (1) baghouse (C07) for particulate control, exhausting to stack S07, is also common to other foundry operations. See Stack Summary below.

Stack Summary

The table below provides a summary of the stacks:

Stack ID	Process	Process ID
S01	Line 1 Pouring/Mold Cooling	P01
	Line 1 Shakeout	P02
	Line 1 Cast Cooling	P03
	Line 1 Pick and Sort	P04
	Line 1 ladle cleaning operation	P86A
	Line 2 Pouring/Mold Cooling	P06
	Line 2 Shakeout	P07
	Line 2 Cast Cooling	P08
	Line 3 Pouring/Mold Cooling	P11
	Line 3 Shakeout	P12
	Line 3 Cast Cooling	P13
	Line 4 Pouring/Mold Cooling	P16
	Line 4 Shakeout	P17
	Line 4 Cast Cooling	P18
	Line 4 Pick and Sort	P19
	Line 4 ladle cleaning operation	P86B
	Return Sand Handling/ Screening	P21
	Sand Cooling/Water Addition	P22
	Sand Mulling/Handling	P23
	Spent Sand Handling/Processing	P24
S04	Line 1 Pouring/Mold Cooling	P01
	Line 1 Cast Cooling	P03
S07	Line 1 Cleaning/Grinding	P05
	Line 2 Pick and Sort	P09
	Line 2 Cleaning/Grinding	P10
	Line 3 Pick and Sort	P14
	Line 3 Cleaning/Grinding	P15
	Metallic Returns Handling	P25
	Line 4 Cleaning/Grinding	P20
S08	Core Sand Handling	P40
	Phenolic-Urethane Core Sand Handling System	P42
S09	Phase I gray iron cupola	P30
	Phase II cupola iron melting system	P33
S11	Core Machines & Ovens	P51

Stack ID	Process	Process ID
S15	Phase 2 Ductile Iron Treatment Ladle Cleaning	
	Line 5 Pouring/Mold Cooling	P60
	Line 5 Shakeout	P61
	Line 5 Cast Cooling	P62
	Line 6 Pouring/Mold Cooling	P65
	Line 6 Shakeout	P66
	Line 6 Cast Cooling	P67
	Line 7 Pouring/Mold Cooling	P70
	Line 7 Shakeout	P71
	Line 7 Cast Cooling	P72
	Line 8 Pouring/Mold Cooling	P75
	Shot Blast Machine	P55
	Return Sand Handling/ Screening	P80
	Sand Mulling and Handling	P81
	Sand Blending and Cooling	P82
	Spent Sand and Dust Handling	P83
	Metal Returns Handling System	P84
	Ductile Iron Treatment (2 stations)	P35
	Natural Gas Air Make-Up	P54
	Phase II Ladle Preheating (Formerly S13)	P53B
S17	Phenolic-urethane core making process	P47
S26A	Paint Booth	S26A
S26B	Paint Booth	S26B
S44	Phase 1 Melt Area Ladle Cleaning	P86
	Phase 2 Melt Area Ladle Cleaning	
	Charge Makeup and Handling	P32
	Ladle Filling & Iron Transport	P85
	Phase II Charge Makeup and Handling	
	Phase II Ladle Filling & Iron Transport	
	Desulfurization Ladle	P34

Enforcement Issues

There are no pending enforcement actions related to this modification.

Emission Calculations

See Appendix A of this Technical Support Document for detailed emission calculations.

Permit Level Determination – Part 70

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

The following table is used to determine the appropriate permit level under 326 IAC 2-7-10.5. Any control equipment is considered federally enforceable only after issuance of this Part 70 permit modification, and only to the extent that the effect of the control equipment is made practically enforceable in the permit.

PTE Change of the Modified Process of Line 4			
Pollutant	**PTE Before Modification*** (ton/yr)	**PTE After Modification**** (ton/yr)	**Increase from Modification** (ton/yr)
PM	3216.67	4765.44	1548.77
PM_{10}	1040.69	1541.76	501.07
$PM_{2.5}$	1040.69	1541.76	501.07
SO_2	2.37	3.504	1.14
NO_X	1.18	1.752	0.57
VOC	165.56	245.28	79.72
CO	709.56	1051.2	341.64
Single HAP (Lead)	3.10	4.6	1.49
Total HAPs	3.16	4.69	1.53
GHGs as CO2e	1,182.60	1,752.00	569.40

* PTE Before modification is based on the current capacity of 27 tons per hour.

** PTE after modification is based on the proposed capacity of 40 tons per hour.

See Appendix A for the calculations.

(a) Significant Source Modification

This source modification is considered a significant source modification, pursuant to 326 IAC 2-7-10.5(g)(1), because this modification is subject to 326 IAC 2-2 (PSD). This source modification is also considered a significant source modification, pursuant to 326 IAC 2-7-10.5(g)(4), because this modification has a potential to emit greater than 25 tons per year of the following pollutants: PM, PM10, PM2.5, and VOC. Lastly, this source modification is also considered a significant source modification, pursuant to 326 IAC 2-7-10.5(g)(7), because this modification has a potential to emit greater than 100 tons per year of CO.

(b) Significant Permit Modification

This permit modification is considered a significant permit modification, pursuant to 326 IAC 2-7-12(d)(1), because this modification does not qualify as a minor permit modification or administrative amendment and this modification includes significant changes in existing monitoring Part 70 permit terms and conditions and requires a case-by-case determination of an emission limitation or standard (e.g. PSD BACT).

Permit Level Determination – PSD

(a) PM, PM10, and PM2.5, Lead and Beryllium - ATPA

The Permittee has provided information as part of the application for this approval that based on Actual to Projected Actual (ATPA) test in 326 IAC 2-2-2, this modification at an existing major stationary source will not be major for Prevention of Significant Deterioration under 326 IAC 2-2-1 for PM, PM10, PM2.5, Lead, and Beryllium. IDEM, OAQ has not reviewed this information and will not be making any determination in this regard as part of this approval. The applicant will be required to keep records and report in accordance with Source obligation in 326 IAC 2-2-8. There are no netting determinations made for the last 5 years for this source. See Appendix A for the detailed ATPA analysis for PM, PM10, PM2.5, Lead, and Beryllium.

Baseline Actual Emissions (TPY)					
Emission Unit	**PM**	**PM10**	**PM2.5**	**Lead**	**Beryllium**
P16 - Line 4 Pouring/Mold Cooling	3.28	3.28	3.28	0.00328	0.00007
P17 - Line 4 Shakeout	2.30	2.30	2.30	0.00230	0.00005
P18 - Line 4 Cast Cooling	0.58	0.58	0.58	0.00058	0.00001
P19 - Line 4 Pick & Sort	2.30	2.30	2.30	0.00230	0.00005
P20 - Line 4 Cleaning/grinding	2.37	2.37	2.37	0.00237	0.00005
Baseline Actual for Project	10.82	10.82	10.82	0.01082	0.00022
Baseline years used are 2011 and 2012.					

Projected Actual Emissions (TPY)					
Emission Unit	**PM**	**PM10**	**PM2.5**	**Lead**	**Beryllium**
P16 - Line 4 Pouring/Mold Cooling	3.34	3.34	3.34	0.00334	0.00007
P17 - Line 4 Shakeout	2.35	2.35	2.35	0.00235	0.00005
P18 - Line 4 Cast Cooling	0.59	0.59	0.59	0.00059	0.00001
P19 - Line 4 Pick & Sort	2.35	2.35	2.35	0.00235	0.00005
P20 - Line 4 Cleaning/grinding	2.41	2.41	2.41	0.00241	0.00005
Projected Actual Emissions	11.04	11.04	11.04	0.01104	0.00022

Actual to Projected Actual Emissions for the Project (TPY)					
	PM	**PM10**	**PM2.5**	**Lead**	**Beryllium**
Baseline Emissions for Project	10.82	10.82	10.82	0.01082	0.00022
Projected Actual Emissions	11.04	11.04	11.04	0.01104	0.00022
Actual to Projected Actual	0.22	0.22	0.22	0.000220	0.000004
Significant Level	25	15	10	0.6	0.0004

Based on this analysis, this modification will not be major for Prevention of Significant Deterioration under 326 IAC 2-2-1 for the following pollutants: PM, PM10, PM2.5, Lead and Beryllium

(b) GHGs as CO2e

This modification to an existing major stationary source is not major for GHGs because the emissions increase is less than the PSD significant level. Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply for GHGs.

Process / Emission Unit	GHGs - Potential to Emit (ton/yr)
Total for Modification	569.40
PSD Significant Level	75,000 CO_2e

(c) SO2, NOx, VOC and CO – PSD BACT

The PSD requirements, including the use of Best Available Control Technology (BACT), apply to this modification for SO2, NOx, VOC and CO Pollutants because the existing PSD BACT Limits of SO2, NOx, VOC and CO associated with Line 4 are being revised as shown in the table below to include the additional increase in the capacity of Line 4. Even though it is only Line 4 that is being modified, since there are existing PSD BACT limits for the stack 01 (which Lines 1 to 4 are also exhausting), the total hourly limits for the stack is also being revised, in addition to specifying PSD BACT limit for Line 4 alone.

	SO2 Stack Limit (lb/hr) (total from Stack S01)	**NOx Stack Limit (lb/hr)** (total from Stack S01)	**VOC Stack Limit (lb/hr)** (total from Stacks S01 and S04)	**CO Stack Limit (lb/hr)** (total from Stack S01)
Existing PSD BACT	1.68	0.89	138.6	510
Proposed PSD BACT	1.98*	3.96*	157.2*	606.2*

* The 'lb/hr stack limit' is summation of 'lb/hr emission rates' of the emission units associated with these stacks as calculated in the table below. The calculation methodology is followed by this table. These 'lb/hr emission rates' (highlighted as grey in the table below) will be included in the permit as limits.

				SO2			Nox			VOC			CO		
Stack ID	Process	Process ID	Throughput (tons/yr)	SO2 Emission Limits for Individual Process (lb/ton)	SO2 Emission Limits for Individual Process (lb/hr)	SO2 Stack Limit (lb/hr)	NOx Emission Limits for Individual Process (lb/ton)	NOx Emission Limits for Individual Process (lb/hr)	NOx Stack Limit (lb/hr)	VOC Emission Limits for Individual Process (lb/ton)	VOC Emission Limit for Individual Processes (lb/hr)	VOC Stack Limit (lb/hr)	CO Emission Limits for Individual Process (lb/ton)	CO Emission Limits for Individual Process (lb/hr)	CO Stack Limit (lb/hr)
S01	Line 1 Pouring/Mold Cooling	P01	38	0.02	0.46	1.98	0.01	0.24	3.96	1.40	33.6	157.2	5	106	606.2
	Line 1 Shakeout	P02	38	-	-		-	-					1	38	
	Line 1 Cast Cooling	P03	38	-	-		-	-		-	-		-	-	
	Line 1 Pick and Sort	P04	38	-	-		-	-		-	-		-	-	
	Line 2 Pouring/Mold Cooling	P06	17	0.02	0.34		0.01	0.17		1.40	23.80		5	85	
	Line 2 Shakeout	P07	17	-	-		-	-					1	17	
	Line 2 Cast Cooling	P08	17	-	-		-	-		-	-		-	-	
	Line 3 Pouring/Mold Cooling	P11	17	0.02	0.34		0.01	0.17		1.40	23.80		5	85	
	Line 3 Shakeout	P12	17	-	-		-	-					1	17	
	Line 3 Cast Cooling	P13	17	-	-		-	-		-	-		-	-	
	Line 4 Pouring/Mold Cooling	P16	40	0.02	0.80		0.01	0.40		1.40	56		5	200	
	Line 4 Shakeout	P17	40	-	-		-	-					1	40	
	Line 4 Cast Cooling	P18	40	-	-		-	-		-	-		-	-	
	Line 4 Pick and Sort	P19	40	-	-		-	-		-	-		-	-	
	Return Sand Handling/ Screening	P21	522	-	-		-	-		-	-		-	-	
	Sand Cooling/Water Addition	P22	522	-	-		-	-		-	-		-	-	
	Sand Mulling/Handling	P23	522	-	-		-	-		-	-		-	-	
	Spent Sand Handling/Processing	P24	54	-	-		-	-		-	-		-	-	
	Air makeup units	P52	65.6	0.6	0.04		0.01	2.98		5.8	0.4		277	18.20	
S04	Line 1 Pouring/Mold Cooling	P01	38	0.02	0.3	0.3	0.01	0.1	0.1	1.40	19.6		5	84	84
	Line 1 Cast Cooling	P03	38	-	-		-	-		-	-		-	-	

Methodology:
Emission Limits for Individual Process (lb/hr) = Emission Limits for Individual Process (lb/ton) x Throughput (tons/yr)

Stack Limit (lb/hr) = Sum of Emission Limit in lb/hr of Individual Processes

The capacity and gaseous emissions from Line 1 – Pouring/Mold Cooling are split between Stack S01 and S04 using a ratio of 56:44 or 21.3 tons/hr:16.7 tons/hr.

The pounds per hour (lb/hr) limits of SO2, NOx, VOC and CO for Line 1 – Pouring/Mold Cooling have been adjusted accordingly.

Federal Rule Applicability Determination

New Source Performance Standards (NSPS):

(a) There are no new NSPS (326 IAC 12 and 40 CFR Part 60) included in the permit due to this proposed modification.

National Emission Standards for Hazardous Air Pollutants (NESHAP):

(a) There are no new NESHAPs included in the permit (326 IAC 14, 326 IAC 20 and 40 CFR Part 63) due to this proposed modification.

Compliance Assurance Monitoring (CAM)

(a) Pursuant to 40 CFR 64.2, CAM is applicable to each new or modified pollutant-specific emission unit that meets the following criteria:

(1) has a potential to emit before controls equal to or greater than the Part 70 major source threshold for the pollutant involved;

(2) is subject to an emission limitation or standard for that pollutant; and

(3) uses a control device, as defined in 40 CFR 64.1, to comply with that emission limitation or standard.

Emission Unit	Pollutant	Control Device Used	Emission Limitation (Y/N)	Uncontrolled PTE (ton/yr)	Controlled PTE (ton/yr)	Part 70 Major Source Threshold (ton/yr)	CAM Applicable (Y/N)	Large Unit (Y/N)
P16 - Line 4 Pouring/Mold Cooling	PM	Baghouse C01-C03	Y	>100	<100	100	Y	N
P17 - Line 4 Shakeout			Y	>100	<100	100	Y	N
P18 - Line 4 Cast Cooling			Y	>100	<100	100	Y	N
P19 - Line 4 Pick & Sort			Y	>100	<100	100	Y	N
P20 - Line 4 Cleaning/grinding		Baghouse C07	Y	>100	<100	100	Y	N
P16 - Line 4 Pouring/Mold Cooling	PM10	Baghouse C01-C03	Y	>100	<100	100	Y	N
P17 - Line 4 Shakeout			Y	>100	<100	100	Y	N
P18 - Line 4 Cast Cooling			Y	>100	<100	100	Y	N
P19 - Line 4 Pick & Sort			Y	>100	<100	100	Y	N
P20 - Line 4 Cleaning/grinding		Baghouse C07	Y	>100	<100	100	Y	N
P16 - Line 4 Pouring/Mold Cooling	PM2.5	Baghouse C01-C03	Y	>100	<100	100	Y	N
P17 - Line 4 Shakeout			Y	>100	<100	100	Y	N
P18 - Line 4 Cast Cooling			Y	>100	<100	100	Y	N
P19 - Line 4 Pick & Sort			Y	>100	<100	100	Y	N
P20 - Line 4 Cleaning/grinding		Baghouse C07	Y	>100	<100	100	Y	N
P16 - Line 4 Pouring/Mold Cooling	SO2	N	CAM is not applicable because Line 4 is not equipped with SO2 and NOx control.					
P17 - Line 4 Shakeout		N						
P18 - Line 4 Cast Cooling		N						
P19 - Line 4 Pick & Sort		N						
P20 - Line 4 Cleaning/grinding		N						
P16 - Line 4 P/MC	NOx	N						
P17 - Line 4 Shakeout		N						
P18 - Line 4 Cast Cooling		N						
P19 - Line 4 Pick & Sort		N						

Emission Unit	Pollutant	Control Device Used	Emission Limitation (Y/N)	Uncontrolled PTE (ton/yr)	Controlled PTE (ton/yr)	Part 70 Major Source Threshold (ton/yr)	CAM Applicable (Y/N)	Large Unit (Y/N)
P20 - Line 4 Cleaning/grinding		N						
16 - Line 4 Pouring/Mold Cooling	VOC	Mold Vent Ignition	Y	>100	>100	100	Y	Y
P17 - Line 4 Shakeout			Y	>100	>100	100	Y	Y
P18 - Line 4 Cast Cooling			Y	>100	>100	100	Y	Y
P19 - Line 4 Pick & Sort		N	Y	<100	<100	100	N	N
P20 - Line 4 Cleaning/grinding		N	Y	<100	<100	100	N	N
P16 - Line 4 Pouring/Mold Cooling	CO	Mold Vent Ignition	Y	>100	>100	100	Y	Y
P17 - Line 4 Shakeout			Y	>100	>100	100	Y	Y
P18 - Line 4 Cast Cooling			Y	>100	>100	100	Y	Y
P19 - Line 4 Pick & Sort		N	Y	<100	CAM is not applicable because Uncontrolled CO PTE is less than 100 ton/yr.			
P20 - Line 4 Cleaning/grinding		N	Y	<100				
P16 - Line 4 Pouring/Mold Cooling	Lead	Baghouse C01-C03	Y	<10	CAM is not applicable because the uncontrolled Lead and Beryllium emissions, each, are less than 10 ton/yr.			
P17 - Line 4 Shakeout			Y	<10				
P18 - Line 4 Cast Cooling			Y	<10				
P19 - Line 4 Pick & Sort			Y	<10				
P20 - Line 4 Cleaning/grinding		Baghouse C07	Y	<10				
P16 - Line 4 Pouring/Mold Cooling	Be	Baghouse C01-C03	Y	<10				
P17 - Line 4 Shakeout			Y	<10				
P18 - Line 4 Cast Cooling			Y	<10				
P19 - Line 4 Pick & Sort			Y	<10				
P20 - Line 4 Cleaning/grinding		Baghouse C07	Y	<10				

(a) Based on this evaluation, the requirements of 40 CFR Part 64, CAM are applicable to the following listed emission units at Line 4 for PM, PM10 and PM2.5.

P16 - Line 4 Pouring/Mold Cooling
P17 - Line 4 Shakeout
P18 - Line 4 Cast Cooling

P19 - Line 4 Pick & Sort
P20 - Line 4 Cleaning/grinding

The compliance monitoring requirements for Baghouses C01-C03 and Baghouse C07 equipped on Line 4 are already specified in the existing permit. These compliance monitoring requirements satisfies CAM for Baghouses C01-C03 and Baghouse C07. The Permittee shall continue to comply with these compliance monitoring requirements for CAM as well.

(b) Based on this evaluation, the requirements of 40 CFR Part 64, CAM are applicable to the following listed emission units for VOC and CO.

P16 - Line 4 Pouring/Mold Cooling
P17 - Line 4 Shakeout
P18 - Line 4 Cast Cooling

A CAM plan will be incorporated into this proposed modification. The Compliance Determination and Monitoring Requirements section includes a detailed description of the CAM requirements.

State Rule Applicability Determination

326 IAC 2-2 (Prevention of Significant Deterioration(PSD))
PSD applicability is discussed under the Permit Level Determination – PSD section.

326 IAC 2-2-4 (Air Quality Analysis Requirements)
326 IAC 2-2-4(a) of this rule, requires that the PSD application shall contain an analysis of ambient air quality in the area that the major stationary source would affect for pollutants that are emitted at major levels or significant amount. Waupaca Foundry, Inc. Plant 5 has submitted an air quality analysis, which has been evaluated by IDEM's Technical Support and Modeling Section. See details in Appendix C.

326 IAC 2-2-5 (Air Quality Impact Requirements)
326 IAC 2-2-5(e)(1) of this rule, requires that the air quality impact analysis required by this section shall be conducted in accordance with the following provisions:

(1) Any estimates of ambient air concentrations used in the demonstration processes required by this section shall be based upon the applicable air quality models, data bases, and other requirements specified in 40 CFR Part 51, Appendix W (Requirements for Preparation, Adoption, and Submittal of Implementation Plans, Guideline on Air Quality Models)*.

(2) Where an air quality impact model specified in the guidelines cited in subdivision (1) is inappropriate, a model may be modified or another model substituted provided that all applicable guidelines are satisfied.

(3) Modifications or substitution of any model may only be done in accordance with guideline documents and with written approval from U.S. EPA and shall be subject to public comment procedures set forth in 326 IAC 2-1.1-6.

Economic Growth
The purpose of the growth analysis is to quantify project associated growth and estimate the air quality impacts from this growth either quantitatively or qualitatively.

This project is not expected to require more than a few additional employees. Since the area is predominately rural, growth is not expected to cause a violation of the NAAQS or the PSD increment.

Soils and Vegetation Analysis
Soil types include a variety of loess over shale soils. Due to the agricultural nature of the land,

crops in the Perry County area consist mainly of corn and soybeans. (2007 Agricultural Census for Perry County). The maximum modeled concentrations for Waupaca are well below the threshold limits necessary to have adverse impacts on the surrounding vegetation. Livestock in Perry County consist mainly of hogs, cattle, and dairy (2007 Agricultural Census for Perry County) and will not be adversely impacted from the facility. Trees in the area are mainly hardwoods. These are hardy trees and no significant adverse impacts are expected due to modeled concentrations.

Federal and State Endangered Species Analysis
Federal and state endangered species are listed by the U.S. Fish and Wildlife Service; Division of Endangered Species for Indiana. For Perry County, this includes 4 birds, 1 amphibian, 2 fishes, 2 insects, 2 mammals, 15 plants, 2 mollusks, and 1 reptile which have a habitat within the county. The facility is not expected to have any additional adverse effects on the habitats of the species than what has already occurred from the industrial, farming, and residential activities in the area.

326 IAC 2-2-6 (Increment Consumption Requirements)
326 IAC 2-2-6(a) requires that any demonstration under section 5 of this rule shall demonstrate that increased emissions caused by the proposed major stationary source will not exceed eighty percent (80%) of the available maximum allowable increases (MAI) over the baseline concentration of sulfur dioxide, particulate matter, and nitrogen dioxide indicated in subsection (b)(1) of this rule.

Increments have been established for $PM_{2.5}$, PM_{10}, NO_2, and SO_2. This project does not increase emissions more than the Significant Emission Rate (SER) for any of these pollutants, so no increment analysis is required.

326 IAC 2-2-7 (Additional Analysis, Requirements)
326 IAC 2-2-7(a) requires an analysis of the impairment to visibility, soils and vegetation. An analysis of the air quality impact projected for the area as a result of general commercial, residential, industrial, and other growth associated with the source was performed. See detailed analysis in Appendix C.

326 IAC 2-2-8 (Source Obligation)
(1) Pursuant to 2-2-8(1), approval to construct shall become invalid if construction is not commenced within eighteen (18) months after receipt of the approval, if construction is discontinued for a period of eighteen (18) months or more, or if construction is not completed within a reasonable time.

(2) Approval for construction shall not relieve the Permittee of the responsibility to comply fully with applicable provisions of the state implementation plan and any other requirements under local, state, or federal law.

326IAC 2-2-10 (Source Information)
The Permittee has submitted all information necessary to perform an analysis or make the determination required under this rule.

326 IAC 2-2-12 (Permit Rescission)
The permit issued under this rule shall remain in effect unless and until it is rescinded, modified, revoked, or it expires in accordance with 326 IAC 2-1.1-9.5 or section 8 of this rule.

326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))
This source is not subject to the requirements of 326 IAC 2-4.1, since the unlimited potential to emit of HAPs from the modified Line 4 operations is less than ten (10) tons per year for any single HAP and less than twenty-five (25) tons per year of a combination of HAPs.

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)
Pursuant to 326 IAC 6-3-1(c)(1), the requirements of this rule do not apply if a particulate limitation is established in 326 IAC 2-2-3, concerning prevention of significant deterioration (PSD) best available

control technology (BACT) determinations. Since Line 4 has previously undergone PSD BACT review for PM, the requirements of 326 IAC 6-3-2 do not apply to the Line 4 operations.

326 IAC 8-1-6 (New facilities; general reduction requirements)
The existing 326 IAC 8-1-6 VOC BACT requirements for Line 4 are made the same to the VOC PSD BACT limits. These VOC PSD BACT and 326 IAC 8-1-6 VOC BACT requirements were established under Construction Permit No. 123-4593-00019, issued on January 19, 1996.

Since the VOC PSD BACT limits are being revised in this modification, it will also follow that the 326 IAC 8-1-6 BACT will be revised due this proposed modification. Please refer to Appendix A for the detailed BACT analysis.

The revised 326 IAC 8-1-6 BACT is determined as follows:

(1) The combined volatile organic compounds (VOCs) emissions from pouring/mold cooling and shakeout of Line 4 shall be controlled by a mold vent off gas ignition.

(2) The combined volatile organic compounds (VOCs) emissions from pouring/mold cooling and shakeout Line 4 shall not exceed 1.4 pounds per ton of iron.

(3) The VOC emissions from the pouring/mold cooling and shakeout of Line 4 shall not exceed 56 lb/hr.

(4) The combined volatile organic compounds (VOCs) emissions from Stacks S01 and S04 shall not exceed 156.8 pounds per hour.

Note: Condition D.2.4 in the existing permit specifies the VOC PSD BACT requirements for Line 4. These PSD BACT requirements for Line 4 are the same as the 326 IAC 8-1-6 VOC BACT requirements for Line 4. However 326 IAC 8-1-6 VOC BACT was not specified in this condition because the 326 IAC 8-1-6 BACT rule citation was inadvertently removed from the permit when SSM 123-26008-00019 was issued on April 7, 2009.

Compliance Determination, Monitoring and Testing Requirements

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

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

Testing Requirements

(1) The testing listed in the table below shall be performed no later than 180 days after the initial start up of the modification of Line 4 and shall be repeated at least once every five (5) years from the date of the last valid compliance demonstration. These tests are distinct and separate from the tests required for the same pollutants after the Phase 1 cupola (P30) achieves a melt rate greater than 80 tons per hour.

Stack/Process	Associated Emission Units	pollutant	Control
Line 4 Pouring/Mold Cooling	Line 4 Pouring/Mold Cooling	SO2	--
Line 4 Pouring/Mold Cooling	Line 4 Pouring/Mold Cooling	NOx	--
Line 4 Pouring/Mold Cooling	Line 4 Pouring/Mold Cooling	VOC	Mold Vent Ignition
Line 4 Shakeout	Line 4 Shakeout		
Line 4 Pouring/Mold Cooling	Line 4 Pouring/Mold Cooling	CO	Mold Vent Ignition
Line 4 Shakeout	Line 4 Shakeout	CO	Mold Vent Ignition

No additional testing is required for Line 4 Cleaning/Grinding due to this proposed modification of Line 4.

(2) PM, PM10, PM2.5 Lead and Beryllium testing requirements have not been included in the permit due to this proposed Line 4 modification. The reasons are specified below.

(a) PSD requirements do not apply for PM, PM10, PM2.5, Lead and Beryllium pollutants based on ATPA analysis submitted by the source (for details, please refer 'Permit Level Determination – PSD' section of this TSD).

(b) The emissions from Line 4 are vented to Stacks S01 and S07 and the existing permit already specify the testing requirements (Condition D.2.10(a)) for PM, Lead and Beryllium emission limits associated with these stacks.

(c) The existing limits in the permit for PM, Lead and Beryllium associated with Stacks S01 and S07 are not being changed due to this proposed modification.

(d) There are no PM10 and PM2.5 limits associated with the Stacks S01 and S07 in the permit and there are no PM10 and PM2.5 limits being included in the permit due to this proposed modification.

Compliance Determination and Monitoring Requirements

Baghouse C01-C03 and Baghouse C07
The compliance determination and monitoring requirements for Baghouses C01-C03 and Baghouse C07 are not changing as a result of this modification. The source shall continue to comply with existing compliance determination and monitoring requirements for Baghouse C01-C03 and Baghouse C07.

Mold Vent Ignition
In order to comply with the PSD VOC and CO BACT limits specified in 'Appendix B – BACT Analyses' for the Line 4 and 326 IAC 8-1-6 VOC BACT limit specified in 'Appendix B – BACT Analyses' for the Line 4, the Permittee shall comply with the following mold vent off gas ignition requirements for the Line 4:

(a) The Permittee shall operate the mold vent off gas ignition system for Line 4 according to the mold vent ignition operation and maintenance plan approved by IDEM, OAQ.

(b) The Permittee shall prepare and submit the mold vent ignition operation and maintenance plan to the IDEM, OAQ for approval.

The operation and maintenance plan must include procedures for igniting gases from mold vents in pouring areas and pouring stations that use a sand mold system. The plan must contain the elements below:

Procedures for providing an ignition source to mold vents of sand mold systems in each pouring area and pouring station unless the Permittee determine the mold vent gases either are not ignitable, ignite automatically, or cannot be ignited due to accessibility or safety issues. The Permittee shall document and maintain records of this determination. The determination of ignitability, accessibility, and safety may encompass multiple casting patterns provided the castings utilize similar sand-to-metal ratios, binder formulations, and coating materials. The determination of ignitability must be based on observations of the mold vents within 5 minutes of pouring, and the flame must be present for at least 15 seconds for the mold vent to be considered ignited. For the purpose of this determination:

(i) Mold vents that ignite more than 75 percent of the time without the presence of an auxiliary ignition source are considered to ignite automatically; and

(ii) Mold vents that do not ignite automatically and cannot be ignited in the presence of an auxiliary ignition source more than 25 percent of the time are considered to be not ignitable.

(c) The Permittee shall maintain a current copy of the mold vent ignition operation and maintenance plan onsite approved by IDEM, OAQ and make available for inspection upon request.

Above compliance monitoring requirements are necessary to ensure that the Baghouse C01-C03 and Baghouse C07 and Mold Vent Ignition system operate properly in order to comply with 326 IAC 2-2, 326 IAC 2-7 (Part 70), 326 IAC 8-1-6 and CAM.

Proposed Changes

The changes listed below have been made to Part 70 Operating Permit No. T123-27047-00019. Deleted language appears as ~~strikethroughs~~ and new language appears in **bold**:

Change 1: The proposed modification has been added in the permit.

Change 2: Condition D.2.4 is being revised to have the same format as the other conditions in Section D. In addition, this format makes it clear that VOC PSD BACT limits are specified, as applicable, for specific operations, in addition to the total hourly limits for the stacks.

Change 3: Condition D.2.5 has been revised to reflect the total CO emissions limit for Stack S01 to account for the emissions of existing air makeup units and increase due to the proposed Line 4 modification.

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:

Phase I

. . .

(4) Line 4 **(approved for modification in 2014)**
- (A) One (1) pouring/mold cooling operation, identified as P16, with a maximum throughput of ~~27~~**40** tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;
- (B) One (1) shakeout operation, identified as P17, with a maximum throughput of ~~27~~**40** tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;
- (C) One (1) cast cooling operation, identified as P18, with a maximum throughput of ~~27~~**40** tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;
- (D) One (1) pick & sort operation, identified as P19, with a maximum

throughput of ~~27~~**40** tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;

(E) One (1) cleaning & grinding operation, identified as P20, with a maximum throughput of ~~27~~**40** tons per hour, using a mechanical blaster, using one (1) baghouse (C07) for particulate control, exhausting to stack S07;

. . .

SECTION D.2 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

Facilities exhausting to stacks S01, S04, or S07

Phase I

. . .

(4) Line 4 **(approved for modification in 2014)**

(a) One (1) pouring/mold cooling operation, identified as P16, with a maximum throughput of ~~27~~**40** tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;

(b) One (1) shakeout operation, identified as P17, with a maximum throughput of ~~27~~**40** tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;

(c) One (1) cast cooling operation, identified as P18, with a maximum throughput of ~~27~~**40** tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;

(d) One (1) pick & sort operation, identified as P19, with a maximum throughput of ~~27~~**40** tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01; and

(e) One (1) cleaning & grinding operation, identified as P20, with a maximum throughput of ~~27~~**40** tons per hour, using a mechanical blaster, using one (1) baghouse (C07) for particulate control, exhausting to stack S07.

. . .

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

D.2.1 PSD BACT for Particulate Matter [326 IAC 2-2-3(a)(3)]

(a) Pursuant to CP-123-4593-00019, issued on January 19, 1996, CP-123-8451-00019, issued on February 4, 1998, Amendment 123-9740-00019, issued May 22, 1998, and 326 IAC 2-2-3(a)(3) (Prevention of Significant Deterioration (PSD) Rules), the particulate matter emissions from the following processes shall be limited as shown in the table below:

Stack ID	Process	Process ID	Emission Limitation for Individual Processes (lb/hr)	Particulate Emission Limitation for stack (gr/dscf)	Particulate Emission Limitation for stack (lb/hr)
	Line 1 Pouring/Mold Cooling	P01	-		
	Line 1 Shakeout	P02	-		

S01	Line 1 Cast Cooling	P03	-	0.005	32.01
	Line 1 Pick and Sort	P04	-		
	Line 2 Pouring/Mold Cooling	P06	1.50		
	Line 2 Shakeout	P07	1.71		
	Line 2 Cast Cooling	P08	1.93		
	Line 3 Pouring/Mold Cooling	P11	1.50		
	Line 3 Shakeout	P12	1.71		
	Line 3 Cast Cooling	P13	0.43		
	Line 4 Pouring/Mold Cooling *	P16	2.44		
	Line 4 Shakeout *	P17	1.71		
	Line 4 Cast Cooling *	P18	0.43		
	Line 4 Pick and Sort *	P19	1.71		
	Return Sand Handling/ Screening	P21	-		
	Sand Cooling/Water Addition	P22	-		
	Sand Mulling/Handling	P23	-		
	Spent Sand Handling/Processing	P24	2.74		
	Air makeup units	P52	-	0.90 lb/hr and 3.94 tons/yr	
S04	Line 1 Pouring/Mold Cooling	P01	-	0.005	1.72
	Line 1 Cast Cooling	P03			
S07	Line 1 Cleaning/Grinding	P05	-	0.005	7.8
	Line 2 Pick and Sort	P09	1.71		
	Line 2 Cleaning/Grinding	P10	0.69		
	Line 3 Pick and Sort	P14	2.10		
	Line 3 Cleaning/Grinding	P15	0.69		
	Metallic Returns Handling	P25	1.29		
	Line 4 Cleaning/Grinding *	P20	0.69		

*** In accordance with the actual to projected actual (ATPA) analysis made in PSD/SSM 123-33464-00019, there are no significant emissions increase for PM due to the 2014 modification (to increase the capacity of Line 4 from 27 tons/hour to 40 tons/hour).**

(b) Pursuant to CP123-4593-00019 issued on January 19, 1996 **and 326 IAC 2-2,** visible emissions from any baghouse stack shall not exceed ten percent (10%) opacity.

(c) Pursuant to PSD/SSM No. 123-33284-00019**, issued on October 15, 2013** and 326 IAC 2-2 (Prevention of Significant Deterioration):

. . .

D.2.2 PSD BACT for Lead [326 IAC 2-2-3(a)(3)]

Pursuant to CP-123-4593-00019, issued on January 19, 1996, CP-123-8451-00019, issued on February 4, 1998, Amendment 123-9740-00019, issued May 22, 1998, and 326 IAC 2-2-3(a)(3) (Prevention of Significant Deterioration (PSD) Rules) and revised by PSD/SSM 123-25303-00019, **issued on December 19, 2007,** the lead (Pb) emissions from the following processes shall be limited as shown in the table below:

Stack ID	Process	Process ID	Lead Emission Limit (lb/hr)
	Line 1 Pouring/Mold Cooling	P01	

Stack ID	Process	Process ID	Lead Emission Limit (lb/hr)
S01	Line 1 Shakeout	P02	0.032
	Line 1 Cast Cooling	P03	
	Line 1 Pick and Sort	P04	
	Line 2 Pouring/Mold Cooling	P06	
	Line 2 Shakeout	P07	
	Line 2 Cast Cooling	P08	
	Line 3 Pouring/Mold Cooling	P11	
	Line 3 Shakeout	P12	
	Line 3 Cast Cooling	P13	
	Line 4 Pouring/Mold Cooling *	P16	
	Line 4 Shakeout *	P17	
	Line 4 Cast Cooling *	P18	
	Line 4 Pick and Sort*	P19	
	Return Sand Handling/ Screening	P21	
	Sand Cooling/Water Addition	P22	
	Sand Mulling/Handling	P23	
	Spent Sand Handling/Processing	P24	
	Air makeup units	P52	
S04	Line 1 Pouring/Mold Cooling	P01	0.002
	Line 1 Cast Cooling	P03	
S07	Line 1 Cleaning/Grinding	P05	0.008
	Line 2 Pick and Sort	P09	
	Line 2 Cleaning/Grinding	P10	
	Line 3 Pick and Sort	P14	
	Line 3 Cleaning/Grinding	P15	
	Metallic Returns Handling	P25	
	Line 4 Cleaning/Grinding *	P20	

*** In accordance with the actual to projected actual (ATPA) analysis made in PSD/SSM 123-33464-00019, there are no significant emissions increase for Lead due to the 2014 modification (to increase the capacity of Line 4 from 27 tons/hour to 40 tons/hour).**

D.2.3 PSD BACT for Beryllium [326 IAC 2-2-3(a)(3)]

Pursuant to CP-123-4593-00019, issued on January 19, 1996, CP-123-8451-00019, issued on February 4, 1998, Amendment 123-9740-00019, issued May 22, 1998, and 326 IAC 2-2-3(a)(3) (Prevention of Significant Deterioration (PSD) Rules) and revised by PSD/SSM 123-25303-00019, **issued on December 19, 2007,** the beryllium (Be) emissions from the following processes shall be limited as shown in the table below:

Stack ID	Process	Process ID	Beryllium Emission Limit (lb/hr)
S01	Line 1 Pouring/Mold Cooling	P01	0.0006
	Line 1 Shakeout	P02	
	Line 1 Cast Cooling	P03	
	Line 1 Pick and Sort	P04	
	Line 2 Pouring/Mold Cooling	P06	
	Line 2 Shakeout	P07	
	Line 2 Cast Cooling	P08	
	Line 3 Pouring/Mold Cooling	P11	
	Line 3 Shakeout	P12	

Stack ID	Process	Process ID	Beryllium Emission Limit (lb/hr)
	Line 3 Cast Cooling	P13	
	Line 4 Pouring/Mold Cooling *	P16	
	Line 4 Shakeout *	P17	
	Line 4 Cast Cooling *	P18	
	Line 4 Pick and Sort *	P19	
	Return Sand Handling/ Screening	P21	
	Sand Cooling/Water Addition	P22	
	Sand Mulling/Handling	P23	
	Spent Sand Handling/Processing	P24	
	Line 1 Pouring/Mold Cooling	P01	
S04	Line 1 Cast Cooling	P03	0.00003
	Line 1 Cleaning/Grinding	P05	
	Line 2 Pick and Sort	P09	
	Line 2 Cleaning/Grinding	P10	0.00016
S07	Line 3 Pick and Sort	P14	
	Line 3 Cleaning/Grinding	P15	
	Metallic Returns Handling	P25	
	Line 4 Cleaning/Grinding *	P20	

*** In accordance with the actual to projected actual (ATPA) analysis made in PSD/SSM 123-33464-00019, there are no significant emissions increase for Beryllium (Be) due to the 2014 modification (to increase the capacity of Line 4 from 27 tons/hour to 40 tons/hour).**

D.2.4 PSD BACT for Volatile Organic Compound [326 IAC 2-2-3(a)(3)]

Pursuant to PSD/SSM 123-29490-00019**, issued on May 10, 2011, PSD/SSM 123-33464-00019,** and 326 IAC 2-2-3 (Prevention of Significant Deterioration (PSD)), the following **requirement and limits are**~~limit is~~ determined as Best Available Control Technology (BACT) for volatile organic compounds~~. (VOC) for the Pouring/Mold Cooling and shakeout Operation for Phase 1 Lines 1 to 4 exhausting through stack S01 and S04.~~

(a) The~~ combined~~ VOC emissions from the pouring/mold cooling and shakeout operation shall be controlled by mold vent off-gas ignition**.**

(b) **The VOC emissions from the following processes**~~ and~~ shall not exceed **the limits**~~1.4 pounds per ton of iron poured and 138.6 lbs/hour, combined for both stacks, identified~~ as **shown in the table below:** ~~S01 and S04.~~

Stack ID	**Process**	**Process ID**	**VOC Emission Limits for Individual Processes (lb/ton)**	**VOC Emission Limits for Individual Processes (lb/hr)**	**VOC Emission Limits for Stacks (lb/hr)**
	Line 1 Pouring/Mold Cooling	**P01**		**33.6**	
	Line 1 Shakeout	**P02**	**1.4**		**157.2**
	Line 1 Cast Cooling	**P03**	**-**	**-**	
	Line 1 Pick and Sort	**P04**	**-**	**-**	**(combined for S01 and S04)**
	Line 2 Pouring/Mold Cooling	**P06**		**23.8**	
	Line 2 Shakeout	**P07**	**1.4**		
	Line 2 Cast Cooling	**P08**	**-**	**-**	
	Line 3 Pouring/Mold Cooling	**P11**		**23.8**	
	Line 3 Shakeout	**P12**	**1.4**		

Stack ID	Process	Process ID	VOC Emission Limits for Individual Processes (lb/ton)	VOC Emission Limits for Individual Processes (lb/hr)	VOC Emission Limits for Stacks (lb/hr)
S01	**Line 3 Cast Cooling**	**P13**	**-**	**-**	
	Line 4 Pouring/Mold Cooling	**P16**	**1.4**	**56**	
	Line 4 Shakeout	**P17**			
	Line 4 Cast Cooling	**P18**	**-**	**-**	
	Line 4 Pick and Sort	**P19**	**-**	**-**	
	Return Sand Handling/ Screening	**P21**	**-**	**-**	
	Sand Cooling/Water Addition	**P22**	**-**	**-**	
	Sand Mulling/Handling	**P23**	**-**	**-**	
	Spent Sand Handling/Processing	**P24**	**-**	**-**	
	Air makeup units	**P52**	**5.8**	**0.4**	
S04	**Line 1 Pouring/Mold Cooling**	**P01**	**1.4**	**19.6**	
	Line 1 Cast Cooling	**P03**	**-**	**-**	

D.2.5 PSD BACT for Carbon Monoxide [326 IAC 2-2-3(a)(3)]

(a) Pursuant to PSD/SSM 123-29490-00019**, issued on May 10, 2011, PSD/SSM 123-33464-00019,** and 326 IAC 2-2-3(a)(3), the carbon monoxide (CO) emissions from the following processes shall be limited as shown in the table below:

Stack ID	Process	Process ID	CO Emission Limits for Individual Processes (lb/ton)	**CO Emission Limits for Individual Processes (lb/hr)**	CO Emission Limits for Stacks (lb/hr)
S01	Line 1 Pouring/Mold Cooling	P01	5.0	**106**	**606.2** ~~510.0~~
	Line 1 Shakeout	P02	1.0	**38**	
	Line 1 Cast Cooling	P03	**-**	**-**	
	Line 1 Pick and Sort	P04	**-**	-	
	Line 2 Pouring/Mold Cooling	P06	5.0	**85**	
	Line 2 Shakeout	P07	1.0	**17**	
	Line 2 Cast Cooling	P08	**-**	**-**	
	Line 3 Pouring/Mold Cooling	P11	5.0	**85**	
	Line 3 Shakeout	P12	1.0	**17**	
	Line 3 Cast Cooling	P13	**-**	**-**	
	Line 4 Pouring/Mold Cooling	P16	5.0	**200**	
	Line 4 Shakeout	P17	1.0	**40**	
	Line 4 Cast Cooling	P18	**-**	**-**	
	Line 4 Pick and Sort	P19	**-**	**-**	
	Return Sand Handling/ Screening	P21	**-**	**-**	
	Sand Cooling/Water Addition	P22	**-**	**-**	
	Sand Mulling/Handling	P23	**-**	**-**	
	Spent Sand Handling/Processing	P24	**-**	**-**	
	Air makeup units	P52	~~18.2 lbs/hr~~	**18.2**	
S04	Line 1 Pouring/Mold Cooling	P01	5.0	**84**	84.0
	Line 1 Cast Cooling	P03	**-**	-	

(b) Pursuant to PSD/SSM 123-33464-00019, and 326 IAC 2-2-3(a)(3), the CO emissions from the pouring/mold cooling and shakeout of Line 4 shall be controlled by a mold vent off gas ignition.

D.2.6 PSD BACT for Sulfur Dioxide [326 IAC 2-2-3(a)(3)]

Pursuant to PSD/SSM 123-29490-00019**, issued on May 10, 2011, PSD/SSM 123-33464-00019,** and 326 IAC 2-2-3(a)(3), the sulfur dioxide (SO2) emissions from the following processes shall be limited as shown in the table below:

Stack ID	Process	Process ID	**SO_2 Emission Limits (lb/ton)**	~~SO_2 Emission Limits (lb/ton)~~	**SO_2 Emission Limits for Individual Processes (lb/hr)**	SO_2 Emission Limits for Stacks (lb/hr)
S01	Line 1 Pouring/Mold Cooling	P01	**0.02**	~~0.02~~	**0.46**	**1.98** ~~1.68~~
	Line 1 Shakeout	P02	**-**		**-**	
	Line 1 Cast Cooling	P03	**-**		**-**	
	Line 1 Pick and Sort	P04	**-**		**-**	
	Line 2 Pouring/Mold Cooling	P06	**0.02**		**0.34**	
	Line 2 Shakeout	P07	**-**		**-**	
	Line 2 Cast Cooling	P08	**-**		**-**	
	Line 3 Pouring/Mold Cooling	P11	**0.02**		**0.34**	
	Line 3 Shakeout	P12	**-**		**-**	
	Line 3 Cast Cooling	P13	**-**		**-**	
	Line 4 Pouring/Mold Cooling	P16	**0.02**		**0.8**	
	Line 4 Shakeout	P17	**-**		**-**	
	Line 4 Cast Cooling	P18	**-**		**-**	
	Line 4 Pick and Sort	P19	**-**		**-**	
	Return Sand Handling/ Screening	P21	**-**		**-**	
	Sand Cooling/Water Addition	P22	**-**		**-**	
	Sand Mulling/Handling	P23	**-**		**-**	
	Spent Sand Handling/Processing	P24	**-**		**-**	
	Air Makeup Units	P52	**-**		**0.04**	
S04	Line 1 Pouring/Mold Cooling	P01	**0.02**	~~0.02~~	**0.3**	0.3
	Line 1 Cast Cooling	P03	**-**		**-**	

D.2.7 PSD BACT for Nitrogen Oxide [326 IAC 2-2-3(a)(3)]

Pursuant to PSD/SSM 123-29490-00019**, issued on May 10, 2011, PSD/SSM 123-33464-00019,** and 326 IAC 2-2-3(a)(3), the (NOX) emissions from the following processes shall be limited as shown in the table below:

Stack ID	Process	Process ID	**NOx Emission Limits (lb/ton)**	~~NOx Emission Limits (lb/ton)~~	**NOx Emission Limits for Individual Processes (lb/hr)**	NOx Emission Limits for Stacks (lb/hr)
	Line 1 Pouring/Mold Cooling	P01	**0.01**		**0.24**	
	Line 1 Shakeout	P02	**-**		**-**	
	Line 1 Cast Cooling	P03	**-**		**-**	
	Line 1 Pick and Sort	P04	**-**		**-**	
	Line 2 Pouring/Mold Cooling	P06	**0.01**		**0.17**	
	Line 2 Shakeout	P07	**-**		**-**	
	Line 2 Cast Cooling	P08	**-**		**-**	
	Line 3 Pouring/Mold Cooling	P11	**0.01**		**0.17**	
	Line 3 Shakeout	P12	**-**		**-**	

Stack ID	Process	Process ID	**NOx Emission Limits (lb/ton)**	~~NOx Emission Limits (lb/ton)~~	**NOx Emission Limits for Individual Processes (lb/hr)**	NOx Emission Limits for Stacks (lb/hr)
S01	Line 3 Cast Cooling	P13	**-**	~~0.01~~	**-**	**3.96** ~~**0.**89~~
	Line 4 Pouring/Mold Cooling	P16	**0.01**		**0.4**	
	Line 4 Shakeout	P17	**-**		**-**	
	Line 4 Cast Cooling	P18	**-**		**-**	
	Line 4 Pick and Sort	P19	**-**		**-**	
	Return Sand Handling/ Screening	P21	**-**		**-**	
	Sand Cooling/Water Addition	P22	**-**		**-**	
	Sand Mulling/Handling	P23	**-**		**-**	
	Spent Sand Handling/Processing	P24	**-**		**-**	
	Air Makeup Units	P52	**0.01**		**2.98**	
S04	Line 1 Pouring/Mold Cooling	P01	**0.01**	~~0.01~~	**0.1**	0.1
	Line 1 Cast Cooling	P03	**-**		**-**	

D.2.8 Operating Conditions [326 IAC 2-2-3)]

Pursuant to PSD/SSM 123-29490-00019**, issued on May 10, 2011,** and 326 IAC 2-2-3(a)(3), the following limitations shall apply:

. . .

D.2.9 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

. . .

Compliance Determination Requirements

D.2.10 Testing Requirements [326 IAC 2-7-6(1),(6)] [326 IAC 2-1.1-11]

(a) . . .

For the stack S01 PM testing, PM includes filterable and condensable PM.

(b) . . .

(c) In order to show compliance with the Individual Process pounds per hour limits specified for Line 4 in Conditions D.2.4, D.2.5, D.2.6, and D.2.7, the Permittee shall perform VOC, CO, SO2 and NOx testing, respectively, for Line 4, no later than 180 days after the initial start up of the modification of Line 4. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C - Performance Testing contains the Permittee's obligations with regard to the performance testing required by this condition. These tests shall be repeated at least once every five (5) years from the date of the last valid compliance demonstration.

D.2.11 Particulate Matter (PM/PM-10) Control [326 IAC 2-7-6(6)]

. . .

D.2.12 Mold Vent Ignition

In order to comply with Conditions D.2.4 and D.2.5, the Permittee shall comply with the following mold vent off gas ignition requirements for Line 4:

(a) The Permittee shall operate the mold vent off gas ignition system for Line 4 according to the mold vent ignition operation and maintenance plan approved by IDEM, OAQ.

(b) The Permittee shall prepare and submit the mold vent ignition operation and maintenance plan to the IDEM, OAQ for approval.

The operation and maintenance plan must include procedures for igniting gases from mold vents in pouring areas and pouring stations that use a sand mold system. The plan must contain the elements below:

Procedures for providing an ignition source to mold vents of sand mold systems in each pouring area and pouring station unless the Permittee determine the mold vent gases either are not ignitable, ignite automatically, or cannot be ignited due to accessibility or safety issues. The Permittee shall document and maintain records of this determination. The determination of ignitability, accessibility, and safety may encompass multiple casting patterns provided the castings utilize similar sand-to-metal ratios, binder formulations, and coating materials. The determination of ignitability must be based on observations of the mold vents within 5 minutes of pouring, and the flame must be present for at least 15 seconds for the mold vent to be considered ignited. For the purpose of this determination:

(i) Mold vents that ignite more than 75 percent of the time without the presence of an auxiliary ignition source are considered to ignite automatically; and

(ii) Mold vents that do not ignite automatically and cannot be ignited in the presence of an auxiliary ignition source more than 25 percent of the time are considered to be not ignitable.

(c) The Permittee shall maintain a current copy of the mold vent ignition operation and maintenance plan onsite approved by IDEM, OAQ and make available for inspection upon request.

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

D.2.**13**~~12~~ Visible Emission Notations **[40 CFR 64]**

. . .

The above monitoring conditions satisfy the Compliance Assurance Monitoring (CAM) for Baghouses C01-C03 and Baghouse C07 equipped on Line 4 for PM, PM10 and PM2.5.

D.2.**14**~~13~~ Baghouse Parametric Monitoring **[40 CFR 64]**

. . .

The above monitoring conditions satisfy the Compliance Assurance Monitoring (CAM) for Baghouses C01-C03 and Baghouse C07 equipped on Line 4 for PM, PM10 and PM2.5.

D.2.**15**~~14~~ Broken or Failed Bag Detection

. . .

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

D.2.**16**~~15~~ Record Keeping Requirements

(a) To document compliance with Condition D.2.**13**~~12~~ the Permittee shall maintain records of visible emission notations of each baghouse stack exhaust once per day. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g. the process did not operate that day).

(b) To document compliance with Condition D.2.**14**~~13~~, the Permittee shall keep a log of the calibration test results for baghouse CO7 leak detector.

. . .

SECTION E.1 EMISSIONS UNIT OPERATION CONDITIONS

Emission Unit Description:

Under the Iron and Steel Foundry NESHAP (40 CFR 63, Subpart EEEEE), the following emission units are considered as part of an existing affected source.

. . .

(4) Line 4

(A) One (1) pouring/mold cooling operation, identified as P16, with a maximum throughput of ~~27~~**40** tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;

(B) One (1) shakeout operation, identified as P17, with a maximum throughput of ~~27~~**40**tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;

(C) One (1) cast cooling operation, identified as P18, with a maximum throughput of ~~27~~**40**tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;

(D) One (1) pick & sort operation, identified as P19, with a maximum throughput of ~~27~~**40**tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;

(E) One (1) cleaning & grinding operation, identified as P20, with a maximum throughput of ~~27~~**40**tons per hour, using a mechanical blaster, using one (1) baghouse (C07) for particulate control, exhausting to stack S07;

. . .

TSD Appendices

The following are the appendices of this TSD:

(1) Appendix A – Emission calculations

(2) Appendix B – BACT Analyses

(3) Appendix C – BACT Cost Analysis

(4) Appendix D – Air Quality Analysis

Conclusion and Recommendation

The construction and operation of this proposed modification shall be subject to the conditions of the attached proposed PSD/Part 70 Significant Source Modification No. 123-33464-00019 and Part 70 Significant Permit Modification No. 123-33469-00019. The staff recommends to the Commissioner that this PSD/Part 70 Significant Source and Part 70 Significant Permit Modification be approved.

IDEM Contact

(a) Questions regarding this proposed permit can be directed to Mehul Sura at the Indiana Department Environmental Management, Office of Air Quality, Permits Branch, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana 46204-2251 or by telephone at (317) 233-6868 or toll free at 1-800-451-6027 extension 3-6868.

(b) A copy of the findings is available on the Internet at: http://www.in.gov/ai/appfiles/idem-caats/

(c) For additional information about air permits and how the public and interested parties can participate, refer to the IDEM's Guide for Citizen Participation and Permit Guide on the Internet at: www.in.gov/idem

Appendix A
ATPA - PSD Permit Level Determination

Company Name: **Waupaca Foundry, Inc. - Plant 5**
Source Address: **9856 State Highway 66, Tell City, Indiana 47586**
Significant Source Modification No.: **123-33464-00019**
Significant Permit Modification No. : **123-33469-00019**
Reviewer: **Sarah Street and Mehul Sura**

				Past Actual Emission Factors				Past Actual Emission (tpy)				
Stack ID	Control Device	Process Description	Air Flow Rate (acfm)	Past Actual Emission Factors PM (gr/acf)	weight fraction of Pb in ppm (parts of Pb per million parts of PM by weight)	weight fraction of Be in ppm (parts of Be per million parts of PM by weight)	Past Schedule (hrs/yr)	PM	PM10	PM2.5	Pb	Be
S01	C01-C03	P16 - Line 4 pouring/mold cooling	57,000	0.00175	1000	20	7,668	3.28	3.28	3.28	0.00328	0.00007
		P17 - Line 4 Shakeout	40,000	0.00175	1000	20	7,668	2.30	2.30	2.30	0.00230	0.00005
		P18 - Line 4 Cast Cooling	10,000	0.00175	1000	20	7,668	0.58	0.58	0.58	0.00058	0.00001
		P19 - Line 4 Pick & Sort	40,000	0.00175	1000	20	7,668	2.30	2.30	2.30	0.00230	0.00005
S07	C07	P20 - Line 4 Cleaning/grinding	30,000	0.0024	1000	20	7,668	2.37	2.37	2.37	0.00237	0.00005
								10.82	**10.82**	**10.82**	0.01082	0.00022

Methodology;
Stack S01 PM emission factor is from March 14, 2004 stack test result for Stack 01.
Stack S07 PM emission factor is from March 10, 2009 stack test result for Stack 07.
Assume PM = PM10 = PM2.5
Weight fraction of Pb and Be in ppm (parts of Pb per million parts of PM by weight) are derived from PSD Significant Source Modification No.123-25303-00019, issued for this source on December 19, 2007. These emission factors were used to establish Pb and Be PSD BACT under this Significant Source Modification No.123-25303-00019.
Past actual emissions are based on the annual operating hours for the highest 2-year average during the previous 10 years (the average of 2011 and 2012 which is 7668 hrs /yr).
Past Actual Emissions PM (tpy) = Past Actual Emission Factors PM (gr/acf) x Air Flow Rate (acfm) x 60 (min/hr) x Past Schedule (hrs/yr) / [7000 (grain/lb) x 2000 (lbs/ton)]
Past Actual Emissions Pb (tpy) = Past Actual Emissions PM (tpy) x weight fraction of Pb in ppm (parts of Pb per million parts of PM by weight)
Past Actual Emissions Pb (tpy) = Past Actual Emissions PM (tpy) x weight fraction of Be in ppm (parts of Be per million parts of PM by weight)

				Projected Actual Emission Factors				Projected Actual Emission (tpy)				
Stack ID	Control Device	Process Description	Air Flow Rate (acfm)	Projected Actual Emission Factors PM (gr/acf)	weight fraction of Pb in ppm (parts of Pb per million parts of PM by weight)	weight fraction of Be in ppm (parts of Be per million parts of PM by weight)	Projected Schedule (hrs/yr)	PM	PM10	PM2.5	Pb	Be
S01	C01-C03	P16 - Line 4 P/MC	57,000	0.00175	1000	20	7,824	3.34	3.34	3.34	0.00334	0.00007
		P17 - Line 4 Shakeout	40,000	0.00175	1000	20	7,824	2.35	2.35	2.35	0.00235	0.00005
		P18 - Line 4 Cast Cooling	10,000	0.00175	1000	20	7,824	0.59	0.59	0.59	0.00059	0.00001
		P19 - Line 4 Pick & Sort	40,000	0.00175	1000	20	7,824	2.35	2.35	2.35	0.00235	0.00005
S07	C07	P20 - Line 4 Cleaning/grinding	30,000	0.0024	1000	20	7,824	2.41	2.41	2.41	0.00241	0.00005
					11.04	**1.10E-02**	**2.21E-04**	11.04	11.04	11.04	0.01104	0.00022

Methodology;
Stack S01 PM emission factor is from March 14, 2004 stack test result for Stack 01.
Stack S07 PM emission factor is from March 10, 2009 stack test result for Stack 07.
Assume PM = PM10 = PM2.5
Weight fraction of Pb and Be in ppm (parts of Pb per million parts of PM by weight) are derived from PSD Significant Source Modification No.123-25303-00019, issued for this source on December 19, 2007. These emission factors were used to establish Pb and Be PSD BACT under this modification.
Projected actual emissions are based on the annual operating hours for the highest single year during the previous 10 years (7824 hrs/yr from 2011).
Projected Actual Emissions PM (tpy) = Projected Actual Emission Factors PM (gr/acf) x Air Flow Rate (acfm) x 60 (min/hr) x Projected Schedule (hrs/yr) / [7000 (grain/lb) x 2000 (lbs/ton)]
Projected Actual Emissions Pb (tpy) = Projected Actual Emissions PM (tpy) x weight fraction of Pb in ppm (parts of Pb per million parts of PM by weight)
Projected Actual Emissions Pb (tpy) = Projected Actual Emissions PM (tpy) x weight fraction of Be in ppm (parts of Be per million parts of PM by weight)

			ATPA Change in Actual Emissions (tpy)				
Stack ID	**Control Device**	**Process Description**	**PM**	**PM10**	**PM2.5**	**Pb**	**Be**
S01	C01-C03	P16 - Line 4 P/MC	0.07	0.07	0.07	0.000067	0.000001
		P17 - Line 4 Shakeout	0.05	0.05	0.05	0.000047	0.000001
		P18 - Line 4 Cast Cooling	0.01	0.01	0.01	0.000012	0.000000
		P19 - Line 4 Pick & Sort	0.05	0.05	0.05	0.000047	0.000001
S07	C07	P20 - Line 4 Cleaning/grinding	0.05	0.05	0.05	0.000048	0.000001
Projected Actual - Past Actual			0.22	0.22	0.22	0.000220	0.000004
Significant Emissions Rate (SER)			25	15	10	0.600000	0.000400
PSD Applicable?			No	No	No	No	No

There are no netting determinations made for the last 5 years for this source.

Operating Schedule		
Year	1-yr Avg (hrs/yr)	2-yr Avg (hrs/yr)
2003	6,672	
2004	6,936	6,804
2005	7,272	7,104
2006	6,912	7,092
2007	6,936	6,924
2008	6,360	6,648
2009	5,952	6,156
2010	7,152	6,552
2011	7,824	7,488
2012	7,512	7,668

Appendix A
PTE Calculations - Part 70 Permit Level Determination

Company Name: Waupaca Foundry, Inc. - Plant 5
Source Address: 9856 State Highway 66, Tell City, Indiana 47586
Significant Source Modification No.: 123-33464-00019
Significant Permit Modification No. : 123-33469-00019
Reviewer: Sarah Street and Mehul Sura

					Emission Factor									
Process	**Stack**	**Baghouse**	**Existing Throughput (tons/hr)**	**Proposed Throughput (tons/hr)**	**PM (lb/ton)**	**PM10 (lb/ton)**	**PM2.5 (lb/ton)**	**SO2 (lb/ton)**	**NOx (lb/ton)**	**VOC (lb/ton)**	**CO (lb/ton)**	**GHGs as CO2e (lb/ton)**	**weight fraction of Pb in ppm (parts of Pb per million parts of PM by weight)**	**weight fraction of Be in ppm (parts of Be per million parts of PM by weight)**
P16 - Line 4 pouring/mold cooling operation	S01	C01-C03	27	40	4.20	2.06	2.06	0.02	0.01	1.40	6.00	10	1000	20
P18 - Line 4 cast cooling operation			27	40	1.40	1.40	1.40	-	-				1000	20
P17 - Line 4 shakeout operation			27	40	3.20	2.24	2.24	-	-				1000	20
P19 - Line 4 pick & sort operation			27	40	1.4	1.4	1.4	-	-	-	-	-	313	-
P20 - Line 4 cleaning/grinding	S07	C07	27	40	17.00	1.70	1.70	-	-	-	-	-	1000	20

					Source of Emission Factors									
Process	**Stack**	**Baghouse**	**Existing Throughput (tons/hr)**	**Proposed Throughput (tons/hr)**	**PM (lb/ton)**	**PM10 (lb/ton)**	**PM2.5 (lb/ton)**	**SO2 (lb/ton)**	**NOx (lb/ton)**	**VOC (lb/ton)**	**CO (lb/ton)**	**GHGs as CO2e (lb/ton)**	**weight fraction of Pb in ppm (parts of Pb per million parts of PM by weight)**	**weight fraction of Be in ppm (parts of Be per million parts of PM by weight)**
P16 - Line 4 pouring/mold cooling operation	S01	C01-C03	27	40	AP 42 12.10	AP 42 12.10	AP 42 12.10	SCC# 30400320	SCC# 30400320	current BACT limit	current BACT limit	American Foundry Society (AFS) Data	SSM No.123-25303-00019	SSM No.123-25303-00019
P18 - Line 4 cast cooling operation			27	40	AP 42 12.10	AP 42 12.10	AP 42 12.10	SCC# 30400320	SCC# 30400320				SSM No.123-25303-00019	SSM No.123-25303-00019
P17 - Line 4 shakeout operation			27	40	AP 42 12.10	AP 42 12.10	AP 42 12.10	-	-				SSM No.123-25303-00019	SSM No.123-25303-00019
P19 - Line 4 pick & sort operation			27	40	CP 123-8451-00019	PM10=PM	PM2.5=PM	-	-	-	-	-	CP 123-8451-00019	-
P20 - Line 4 cleaning/grinding	S07	C07	27	40	AP 42 12.10	SCC# 30400340	SCC# 30400340	-	-	-	-	-	1000	20

					Potential Emissions Before Modification (tons/yr) [1]								**Potential Emissions Before Modification (tons/yr) [2]**	
Process	**Stack**	**Baghouse**	**Existing Throughput (tons/hr)**	**Existing Capacity (tons/yr)**	**PM**	**PM10**	**PM2.5**	**SO_2**	**NOx**	**VOC**	**CO**	**GHGs as CO2e**	**Lead**	**Beryllium**
P16 - Line 4 pouring/mold cooling operation	S01	C01-C03	27.00	236,520	496.69	243.62	243.62	2.37	1.18	165.56	709.56	1,182.60	0.496692	0.00993384
P18 - Line 4 cast cooling operation			27.00	236,520	165.56	165.56	165.56	-					0.165564	0.00331128
P17 - Line 4 shakeout operation			27.00	236,520	378.43	264.90	264.90	-					0.378432	0.00756864
P19 - Line 4 pick & sort operation			27.00	236,520	165.56	165.56	165.56	-	-	-	-	-	0.051821532	-
P20 - Line 4 cleaning/grinding	S07	C07	27.00	236,520	2,010.42	201.04	201.04	-	-	-	-	-	2.01042	0.0402084
					3,216.67	**1,040.69**	**1,040.69**	**2.37**	**1.18**	**165.56**	**709.56**	**1,182.60**	**3.10**	**0.06**

Methodology:
[1] Potential Emissions Before Modification (tons/yr) = Emission Factor (lb/ton) x Existing Throughput (tons/hr) x 8760 (hrs/yr) / 2000 (lbs/ton)
[2] Potential Emissions Before Modification (tons/yr) = weight fraction in ppm (parts per million parts of PM by weight) x Potential PM Emissions Before Modification (tons/yr)

					Potential Emissions After Modification (tons/yr) [3]								**Potential Emissions After Modification (tons/yr) [4]**	
Process	**Stack**	**Baghouse**	**Proposed Throughput (tons/hr)**	**Proposed Throughput (tons/yr)**	**PM**	**PM10**	**PM2.5**	**SO_2**	**NOx**	**VOC**	**CO**	**GHGs as CO2e**	**Lead**	**Beryllium**
P16 - Line 4 pouring/mold cooling operation	S01	C01-C03	40.00	350,400	735.84	360.91	360.91	3.50	1.75	245.28	1,051.20	1,752.00	0.73584	0.0147168
P18 - Line 4 cast cooling operation			40.00	350,400	245.28	245.28	245.28	-					0.24528	0.0049056
P17 - Line 4 shakeout operation			40.00	350,400	560.64	392.45	392.45	-					0.56064	0.0112128
P19 - Line 4 pick & sort operation			40.00	350,400	245.28	245.28	245.28	-	-	-	-	-	0.07677264	-
P20 - Line 4 cleaning/grinding	S07	C07	40.00	350,400	2,978.40	297.84	297.84	-	-	-	-	-	2.9784	0.059568
				Total After Mod	**4,765.44**	**1,541.76**	**1,541.76**	**3.50**	**1.75**	**245.28**	**1,051.20**	**1,752.00**	**4.60**	**0.09**

Methodology:
[3] Potential Emissions After Modification (tons/yr) = Emission Factor (lb/ton) x Proposed Throughput (tons/hr) x 8760 (hrs/yr) / 2000 (lbs/ton)
[4] Potential Emissions After Modification (tons/yr) = weight fraction of Pb in ppm (parts of Pb per million parts of PM by weight) x Potential PM Emissions Before Modification (tons/yr)

PTE of Modification (tons/yr)									
PM	**PM10**	**PM2.5**	**SO_2**	**NOx**	**VOC**	**CO**	**GHGs as CO2e**	**Lead**	**Beryllium**
1,548.77	**501.07**	**501.07**	**1.14**	**0.57**	**79.72**	**341.64**	**569.40**	**1.49**	**0.03**

Methodology:
PTE of Modification = Potential Emissions After Modification (tons/yr) - Potential Emissions Before Modification (tons/yr)

Indiana Department of Environmental Management
Office of Air Quality

Appendix B
Best Available Control Technology (BACT) Determination
Prevention of Significant Deterioration (PSD)

Technical Support Document (TSD) for a
PSD/Part 70 Significant Source Modification and
Part 70 Significant Permit Modification

Source Description and Location

Source Name:	**Waupaca Foundry, Inc Plant 5**
Source Location:	**9856 State Highway 66, Tell City, Indiana 47586**
County:	**Perry**
SIC Code:	**3321 (Gray and Ductile Iron Foundries)**
Significant Source Modification No.:	**123-33464-00019**
Significant Permit Modification No.:	**123-33469-00019**
Permit Reviewer:	**Sarah Street and Mehul Sura**

Background Information

The Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) has performed the following Best Available Control Technology (BACT) review for Waupaca Foundry, Inc Plant 5's major PSD modification to its existing stationary gray and ductile iron foundry.

Waupaca Foundry, Inc. operates its Plant 5 stationary gray and ductile iron foundry in Tell City, Perry County, Indiana. The foundry was built in two phases, with Phase 1 approved in 1996 and Phase 2 approved in 1998.

The Office of Air Quality (OAQ) has reviewed a modification application, submitted by Waupaca Foundry, Inc. Plant 5 on July 24, 2013, relating to the increase the production capacity of the Line 4 operations.

The following table summarizes the current and proposed production capacities of all processes affected by this project.

Stack	Baghouse	Process	Current Capacity (tph)	Proposed Capacity (tph)
S01	C01-C03	P16 - Line 4 Pouring/Mold Cooling	27	40
		P17 - Line 4 Shakeout	27	40
		P18 - Line 4 Cast Cooling	27	40
		P19 - Line 4 Pick & Sort	27	40
S07	C07	P20 - Line 4 Cleaning/grinding	27	40

Requirement for Best Available Control Technology (BACT)

Waupaca Foundry, Inc. is proposing to increase the peak production capacity of Line 4 e operations from 27 to 40 tons per hour.

PSD BACT Requirement

The existing SO_2, NOx, VOC and CO PSD BACT limitations are revised to accommodate this additional production capacity for Line 4. Therefore, the requirements of the Prevention of Significant Deterioration regulations, including the use of Best Available Control Technology (BACT), apply to this project for SO2, NOx, VOC and CO pollutants.

The emission units listed below at Line 4 have the potential to emit of SO_2, NOx, VOC nd CO; therefore, BACT analyses for SO2, NOx, VOC and CO were performed for these units:

(a) Line 4 (constructed in 1996, modified in 2010, approved for modification in 2014)

(1) One (1) pouring/mold cooling operation, identified as P16, with a maximum throughput of 40 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;

(2) One (1) shakeout operation, identified as P17, with a maximum throughput of 40 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;

(3) One (1) cast cooling operation, identified as P18, with a maximum throughput of 40 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;

(4) One (1) pick & sort operation, identified as P19, with a maximum throughput of 40 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;

(5) One (1) cleaning & grinding operation, identified as P20, with a maximum throughput of 40 tons per hour, using a mechanical blaster, using one (1) baghouse (C07) for particulate control, exhausting to stack S07;

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

The existing 326 IAC 8-1-6 VOC BACT requirements for Line 4 were made the same to the existing VOC PSD BACT limits. These VOC PSD BACT and 326 IAC 8-1-6 VOC BACT requirements were established under Construction Permit No. 123-4593-00019, issued on January 19, 1996.

Since the VOC PSD BACT limits are being revised in this modification, it will also follow that the 326 IAC 8-1-6 BACT will be revised due this proposed modification.

Note: Condition D.2.4 in the existing permit specifies the VOC PSD BACT requirements for Line 4. These PSD BACT requirements for Line 4 are the same as the 326 IAC 8-1-6 VOC BACT requirements for Line 4. However, 326 IAC 8-1-6 VOC BACT was not specified in this condition because the 326 IAC 8-1-6 BACT rule citation was inadvertently removed from the permit when SSM 123-26008-00019 was issued on April 7, 2009.

Summary of the Best Available Control Technology (BACT) Process

BACT is a mass emission limitation based on the maximum degree of pollution reduction of emissions, which is achievable on a case-by-case basis. BACT analysis takes into account the energy, environmental, and economic impacts on the source. These reductions may be determined through the application of available control techniques, process design, work practices, and operational limitations. Such reductions are necessary to demonstrate that the emissions remaining after application of BACT will not cause or contribute to air pollution, thereby protecting public health and the environment.

Federal guidance on BACT requires an evaluation that follows a "top down" process. In this approach, the applicant identifies the best-controlled similar source on the basis of controls required by regulation or permit, or controls achieved in practice. The highest level of control is then evaluated for technical feasibility.

The five (5) basic steps of a top-down BACT analysis are listed below:

Step 1: Identify Potential Control Technologies

The first step is to identify potentially "available" control options for each emission unit and for each pollutant under review. Available options should consist of a comprehensive list of those technologies with a potentially practical application to the emissions unit in question. The list should include lowest achievable emission rate (LAER) technologies and controls applied to similar source categories. There is no requirement in the State or Federal regulations to require innovative control to be used as BACT.

Step 2: Eliminate Technically Infeasible Options

The second step is to eliminate technically infeasible options from further consideration. To be considered feasible, a technology must be both available and applicable. It is important in this step that any presentation of a technical argument for eliminating a technology from further consideration be clearly documented based on physical, chemical, engineering, and source-specific factors related to safe and successful use of the controls. Innovative control means a control that has not been demonstrated in a commercial application on similar units. Innovative controls are normally given a waiver from the BACT requirements due to the uncertainty of actual control efficiency. Based on this, the OAQ will not evaluate or require any innovative controls for this BACT analysis. Only available and proven control technologies are evaluated. A control technology is considered available when there are sufficient data indicating that the technology results in a reduction in emissions of regulated pollutants.

Step 3: Rank the Remaining Control Technologies by Control Effectiveness

The third step is to rank the technologies not eliminated in Step 2 in order of descending control effectiveness for each pollutant of concern. The ranked alternatives are reviewed in terms of environmental, energy, and economic impacts specific to the proposed modification. If the analysis determines that the evaluated alternative is not appropriate as BACT due to any of the impacts, then the next most effective is evaluated. This process is repeated until a control alternative is chosen as BACT. If the highest ranked technology is proposed as BACT, it is not necessary to perform any further technical or economic evaluation, except for the environmental analyses.

Step 4: Evaluate the Most Effective Controls and Document the Results

The fourth step entails an evaluation of energy, environmental, and economic impacts for determining a final level of control. The evaluation begins with the most stringent control option and continues until a technology under consideration cannot be eliminated based on adverse energy, environmental, or economic impacts.

Step 5: Select BACT

> The fifth and final step is to select as BACT the most effective of the remaining technologies under consideration for each pollutant of concern. For the technologies determined to be feasible, there may be several different limits that have been set as BACT for the same control technology. The permitting agency has to choose the most stringent limit as BACT unless the applicant demonstrates in a convincing manner why that limit is not feasible. The final BACT determination would be the technology with the most stringent corresponding limit that is economically feasible. BACT must, at a minimum, be no less stringent than the level of control required by any applicable New Source Performance Standard (NSPS) and National Emissions Standard for Hazardous Air Pollutants (NESHAP) or state regulatory standards applicable to the emission units included in the permits.

The Office of Air Quality (OAQ) makes BACT determinations by following the five steps identified above.

Sulfur Dioxide (SO_2) BACT - Line 4

The SO_2 emissions from the casting lines are generated by oxidation of sulfur in the molds and cores as molten iron comes in contact with the mold and core raw materials. This sulfur is not an added raw material, but is present in trace quantities in traditional foundry raw materials.

SO_2 emissions are generated in the Pouring/Mold Cooling only portion of Line 4. There are no SO2 emissions from the Shakeout, Cast Cooling, Pick & Sort and Cleaning/grinding of Line 4.

Step 1 − Identify All Potentially Available Control Options

Based on the information reviewed for this BACT determination, the following potentially available control technologies were identified for controlling SO_2 emissions from the Line 4 Pouring/Mold Cooling.

(1) Reductions in the Sulfur content of raw materials

(2) Flue Gas Desulfurization (Dry and Wet Scrubbers)

Add-on control measures are generally based upon exposure of sulfur dioxide molecules to reagents that react with sulfur dioxide to form a sulfate molecule that can then be captured as a particulate. Sulfur dioxide control systems vary in reagent utilized to react with sulfur dioxide, the manner in which the reagent is exposed to sulfur dioxide, and the manner in which sulfate molecules are captured.

Step 2 − Eliminate Technically Infeasible Control Options

(1) Reductions in the Sulfur content of raw materials

The SO_2 emissions from the Line 4 Pouring/Mold Cooling are generated by oxidation of sulfur in the molds and cores as molten iron comes in contact with the mold and core raw materials. This sulfur is not a raw material but is present in trace quantities in traditional foundry raw materials.

For the casting lines, reduction in the sulfur content of raw materials is eliminated from consideration as BACT because this measure is considered technically infeasible. The sulfur in the foundry raw materials is not added but is present in trace quantities. Reductions in the sulfur content of the raw materials are not feasible.

Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the use of reduction in the sulfur content of raw materials is not a technically feasible option for the Line 4 Pouring/Mold Cooling at this source.

(2) Flue Gas Desulfurization (FGD) System (Wet or Dry Scrubber)

A flue gas desulfurization system (FGD) is comprised of a spray dryer that uses lime as a reagent followed by particulate control or wet scrubber that uses limestone as a reagent. FGD is an established technology. FGD typically operates at an inlet temperature of approximately 4000°F to 5000°F. The concentration of SO_2 in the exhaust gas is the driving force for the reaction between SO_2 and the reagent. Therefore, removal efficiencies are significantly reduced with lower inlet concentrations of SO_2. FGD systems are listed in the RBLC as BACT for sources high in SO_2 emissions.

It has been previously concluded in prior BACT determinations for SO_2 for the casting lines at this source that the stack concentration is too low for practical application of add-on control equipment as an option for controlling SO_2 emissions from the casting lines.

Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the use of a flue gas desulfurization system (FGD) is not a technically feasible option for the Line 4 Pouring/Mold Cooling at this source.

Step 3 – Rank Remaining Control Technologies by Control Effectiveness

None of the control options are considered technically feasible for control of Sulfur Dioxide (SO_2) emissions for the Line 4 Casting Line. Therefore, there is no need to rank the alternatives.

Step 4 – Evaluate the Most Effective Controls and Document Results

The U.S. EPA RACT/BACT/LAER Clearinghouse (RBLC) database was reviewed to identify control requirements and limitations for facilities that are similar to the Line 4 Pouring/Mold Cooling at this source. Below is a brief summary of search results obtained from the U.S. EPA RACT/BACT/LAER Clearinghouse (RBLC) database for processes similar to the Line 4 Pouring/Mold Cooling at this source.

(1) The U.S. EPA RACT/BACT/LAER Clearinghouse (RBLC) database search results are based on the following criteria:

(A) SIC Code 3321 (Gray and Ductile Iron Foundries);
(B) SIC Codes beginning with 332 (Iron and Steel Foundries).
(C) Process Code 81.400 – Iron Foundry Processes
(D) Process Code 81.450 – Casting & Pouring Processes

(2) Indiana Department of Environmental Management (IDEM) air quality permits under SIC Code 3321 (Gray and Ductile Iron Foundries).

The identified sources are presented below. There were no determinations which required add-on control options:

Plant	PBLD ID or Permit #	Date Issued and State	Facility	Control Device	SO2 BACT Determination
Waupaca Foundry, Inc. Plant 5, Tell City, IN	*PSD 123-33464-0019*	*IN Proposed**	*Line 4* (Pouring/Mold Cooling)	*None*	*0.02 lbs/ton; 0.8 lb/hr for Line 4 and 1.98 lbs/hr (combined Lines 1 to 4 and Air makeup units) (PSD BACT)*
Waupaca Foundry, Inc. Plant 5, Tell City, IN	IN-0136	IN-0136 (5/10/2011)	Lines 1 to 4 (Pouring/Mold Cooling)	*None*	0.02 lbs/ton; 1.68 lbs/hr (combined Lines 1 to 4) (PSD BACT)
Waupaca Foundry, Inc. Plant 5, Tell City, IN	IN-0136	IN-0136 (5/10/2011)	Lines 5 to 8 (Pouring/Mold Cooling)	*None*	0.02 lbs/ton; 2.02 lbs/hr (combined Lines 5-8) (PSD BACT)
Waupaca Foundry, Inc. Plant 1, Waupaca, WI	WI-0238	WI-0238 (1/12/2006)	Lines 1, 3 - 6 (Pouring/Mold Cooling)	*None*	0.02 lbs/ton (PSD BACT)

* The SO2 PSD BACT being proposed by Waupaca Foundry, Inc. Plant 5 is to maintain the 0.02 lb/ton rate, but increase the total emissions in terms of lb/hr to accommodate the increase in the maximum capacity. IDEM did not find other SO2 PSD BACT limit more stringent than what is being proposed.

SO_2 emissions are generated in the Pouring/Mold Cooling only portion of Line 4. There are no SO2 emissions from the Shakeout, Cast Cooling, Pick & Sort and Cleaning/grinding of Line 4.

(a) Comparison with other BACT Limitations

To determine if there are any new SO_2 emission control alternatives, a search was conducted on the USEPA RACT/BACT/LAER Clearinghouse database for control determinations made during the past 10 years for the process code 81.400 – Iron Foundry Processes.

There were no determinations which required control options besides those which are already under consideration for this application. No emission limits have been approved which were more stringent than those proposed for this application.

(b) Comparison with NSPS and NESHAP Requirements

BACT must be no less stringent than the level of control required by any applicable New Source Performance Standard (NSPS) and National Emissions Standard for Hazardous Air Pollutants (NESHAP) or state regulatory standards applicable to the emission units included in the permits. There currently is no NSPS for iron foundries. There is a NESHAP for steel and iron foundries under 40 CFR Part 60 Subpart EEEEE but this has no SO_2 emission limitations. There are no known NSPS, NESHAP, or State regulations which limit SO_2 emissions from the Line 4 Pouring/Mold Cooling.

Step 5 – Select BACT

Pursuant to 326 IAC 2-2, IDEM, OAQ has established the Sulfur Dioxide (SO_2) BACT for Line 4 as follows:

(1) The sulfur dioxide (SO_2) emissions from the pouring/mold cooling of Line 4 shall not exceed 0.02 pounds per ton.

(2) The sulfur dioxide (SO_2) emissions from the pouring/mold cooling of Line 4 shall not exceed 0.8 lb/hr.

(3) The combined sulfur dioxide (SO_2) emissions from Stack S01 shall not exceed 1.98 lb/hr.

The total hourly SO_2 emission limit of Stack S01 is sum of the SO_2 emissions contributed by all the emission units venting to the Stack S01. Please refer 'Permit Level Determination – PSD' section of the TSD for details of Stack S01 limit.

Nitrogen Oxide (NO_x) BACT - Line 4

The NO_x emissions from casting lines are generated by oxidation of nitrogen in the molds and cores as molten iron comes in contact with the mold and core raw materials. This nitrogen is not an added raw material, but is present in trace quantities in traditional foundry raw materials.

NOx emissions are generated in the Pouring/Mold Cooling only portion of Line 4. There are no NOx emissions from the Shakeout, Cast Cooling, Pick & Sort and Cleaning/grinding of Line 4.

Step 1 − Identify All Potentially Available Control Options

Based on the information reviewed for this BACT determination, the following potentially available control technologies were identified for controlling NO_x emissions from the Line 4 Pouring/Mold Cooling.

(1) Reduction in the nitrogen content of the raw materials

(2) Selective Catalytic Reduction (SCR)

(3) Selective Non- Catalytic Reduction (SNCR)

Add-on control technology approaches are discussed below.

Step 2 − Eliminate Technically Infeasible Control Options

(1) Reduction in the nitrogen content of the raw materials

NO_x emissions from pouring/mold cooling operations have not been extensively studied. The common USEPA air pollution control reference, *Compilation of Air Pollutant Emission Factors*, does not discuss NO_x emissions from pouring/mold cooling or provide any emission factors. The formation of NOx during the pouring and cooling of molten iron into a mold is likely due to the presence of nitrogen in the mold and core raw materials.

The nitrogen in the foundry raw materials is not added but is present in trace quantities. Reductions in the nitrogen content of the raw materials are not feasible. Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the use of a reduction in the nitrogen content of the raw materials is not a technically feasible option for the reduction of NO_x in the Line 4 Pouring/Mold Cooling at this source.

(2) Selective Catalytic Reduction

Selective Catalytic Reduction (SCR) process involves the mixing of anhydrous or aqueous ammonia vapor with flue gas and passing the mixture through a catalytic reactor to reduce NO_X to N_2. Under optimal conditions, SCR can have a removal efficiency up to 90% when used on steady state processes. The efficiency of removal will be reduced for processes that are not stable or require frequent changes in the mode of operation.

The most important factor affecting SCR efficiency is temperature. SCR can operate in a flue gas window ranging from 500°F to 1100°F, although the optimum range for SCR to be effective is 625°F to 700°F.

Add-on SCR control systems have been applied to boilers where the combustion gases are mixed with ammonia or a comparable reagent such as urea to convert NO_x emissions into nitrogen. Each of these methods requires a specified operating temperature range for the NO_x to N_2 reaction to be effective.

The incineration system used at this source to combust cupola CO emissions operates at a minimum temperature specified by IDEM to assure efficient reduction of these emissions. Further reductions in its operating temperature in order to potentially reduce NO_x emissions are not a feasible option.

The casting line outlet concentration of NO_x is extremely low. The Line 4 pouring/mold cooling operations exhausts to Stack S01 with a flow rate of 57,000 acfm at 100°F. Based on the proposed throughput of 40 tph, the NO_x emissions will be 0.4 lbs/hr so the outlet concentration will be 1 ppm. This concentration is lower than the minimum of 20 ppm necessary for use of add-on control technology such as selective catalytic reduction or SCR. It is concluded the stack concentration is too low for practical application of add-on control equipment as an option for controlling NO_x emissions from the casting lines.

Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the use of a Selective Catalytic Reduction (SCR) is not a technically feasible option for the reduction of NO_x in Line 4 Pouring/Mold Cooling at this source.

(3) Selective Non-Catalytic Reduction

With selective non-catalytic reduction (SNCR), NO_x is selectively removed by the injection of ammonia or urea into the flue gas at an appropriate temperature window of 1600°F to 2000°F and without employing a catalyst. Similar to SCR without a catalyst bed, the injected chemicals selectively reduce the NO_x to molecular nitrogen and water.

This approach avoids the problem related to catalyst fouling but the temperature window and reagent mixing residence time is critical for conducting the necessary chemical reaction. At the proper temperature, urea decomposes to produce ammonia which is responsible for NO_x reduction. At a lower temperature, the rates of NO_x reduction reactions become too slow resulting in urea slip (i.e., emissions of unreacted urea).

Add-on SCR control system has been applied to boilers where the combustion gases are mixed with ammonia or a comparable reagent such as urea to convert NO_x emissions into nitrogen. Each of these methods requires a specified operating temperature range for the NO_x to N_2 reaction to be effective.

The incineration system used at this source to combust cupola CO emissions operates at a minimum temperature assure efficient reduction of these emissions. Further reductions in its operating temperature in order to potentially reduce NO_x emissions are not a feasible option.

The casting line outlet concentration of NO_x is extremely low. The Line 4 pouring/mold cooling operations exhausts to Stack S01 with a flow rate of 57,000 acfm at 100°F. Based on the proposed throughput of 40 tph, the NO_x emissions will be 0.4 lbs/hr so the outlet concentration will be 1 ppm. This concentration is lower than the minimum of 200 to 400 ppm necessary for use of selective non-catalyst reduction or SNCR. It is concluded the stack concentration is too low for practical application of add-on control equipment as an option for controlling NO_x emissions from the casting lines.

Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the use of Selective Non-Catalytic Reduction (SNCR) is not a technically feasible option for the reduction of NO_x in Line 4 Pouring/Mold Cooling at this source.

Step 3 – Rank Remaining Control Technologies by Control Effectiveness

None of the control options are considered technically feasible for control of Nitrogen Oxide (NO_x) emissions for the Line 4 Casting Line. Therefore, there is no need to rank the alternatives.

Step 4 – Evaluate the Most Effective Controls and Document Results

The U.S. EPA RACT/BACT/LAER Clearinghouse (RBLC) database was reviewed to identify control requirements and limitations for facilities that are similar to the Line 4 Pouring/Mold Cooling at this source. Below is a brief summary of search results obtained from the U.S. EPA RACT/BACT/LAER Clearinghouse (RBLC) database for processes similar to the Line 4 Pouring/Mold Cooling at this source.

(1) The U.S. EPA RACT/BACT/LAER Clearinghouse (RBLC) database search results are based on the following criteria:

(A) SIC Code 3321 (Gray and Ductile Iron Foundries);
(B) SIC Codes beginning with 332 (Iron and Steel Foundries).
(C) Process Code 81.400 – Iron Foundry Processes
(D) Process Code 81.450 – Casting & Pouring Processes

(2) Indiana Department of Environmental Management (IDEM) air quality permits under SIC Code 3321 (Gray and Ductile Iron Foundries).

The identified sources are presented below. There were no determinations which required control options:

Plant	PBLD ID or Permit #	Date Issued and State	Facility	Control Device	NOx BACT Determination
Waupaca Foundry, Inc. Plant 5, Tell City, IN	*PSD 123-33464-00019*	*IN Proposed**	*Line 4 (Pouring/Mold Cooling)*	*None*	*0.01 lbs/ton; 0.4 lb/hr for Line 4 and 3.96 lbs/hr (combined Lines 1 to 4 and Air makeup units)*
Waupaca Foundry, Inc. Plant 5, Tell City, IN	IN-0136	IN-0136 (5/10/2011)	Lines 1 to 4 (Pouring/Mold Cooling)	*None*	0.01 lbs/ton; 0.99 lbs/hr (combined Lines 1 to 4) (PSD BACT)
Waupaca Foundry, Inc. Plant 5, Tell City, IN	IN-0136	IN-0136 (5/10/2011)	Lines 5 to 8 (Pouring/Mold Cooling)	*None*	0.01 lbs/ton; 1.01 lbs/hr (combined Lines 5 to 8) (PSD BACT)
Waupaca Foundry, Inc. Plant 1, Waupaca, WI	WI-0238	WI-0238 (1/12/2006)	Lines 1, 3 – 6 (Pouring/Mold Cooling)	*None*	0.01 lbs/ton (PSD BACT)

* The NOx PSD BACT being proposed by Waupaca Foundry, Inc. Plant 5 is to maintain the 0.01 lb/ton rate, but increase the total emissions in terms of lb/hr to accommodate the increase in maximum capacity. IDEM did not find other NOx PSD BACT limit more stringent than what is being proposed.

NOx emissions are generated in the Pouring/Mold Cooling only portion of Line 4. There are no NOx emissions from the Shakeout, Cast Cooling, Pick & Sort and Cleaning/grinding of Line 4.

(a) Comparison with other BACT Limitations

To determine if there are any new NO_x emission control alternatives, a search was conducted on the USEPA RACT/BACT/LAER Clearinghouse database for control determinations made during the past 10 years for the process code 81.400 – Iron Foundry Processes.

There were no determinations which required control options besides those which are already

under consideration for this application. No emission limits have been approved which were more stringent than those proposed for this application.

(b) Comparison with NSPS and NESHAP Requirements

BACT must be no less stringent than the level of control required by any applicable New Source Performance Standard (NSPS) and National Emissions Standard for Hazardous Air Pollutants (NESHAP) or state regulatory standards applicable to the emission units included in the permits. There currently is no NSPS for iron foundries. There is a NESHAP for steel and iron foundries under 40 CFR Part 60 Subpart EEEEE but this has no NO_x emission limitations. There are no known NSPS, NESHAP, or State regulations which limit NO_x emissions from the Line 4 Pouring/Mold Cooling.

Step 5 – Select BACT

Pursuant to 326 IAC 2-2, IDEM, OAQ has established Nitrogen Oxide (NO_x) BACT for Line 4 as follows:

(1) The Nitrogen Oxide (NO_x) emissions from the pouring/mold cooling of Line 4 shall not exceed 0.01 pounds per ton.

(2) The NOx emissions from the pouring/mold cooling of Line 4 shall not exceed 0.4 lb/hr.

(3) The combined NOx emissions from Stack S01 shall not exceed 3.96 lb/hr.

The total hourly NOx emission limit of Stack S01 is sum of the NOx emissions contributed by all the emission units venting to the Stack S01. Please refer 'Permit Level Determination – PSD' section of the TSD for details of Stack S01 limit.

Volatile Organic Compounds (VOC) BACT - Line 4

VOC emissions are generated in the Pouring/Mold Cooling and Shakeout portion of Line 4. There are no VOC emissions from the Cast Cooling, Pick & Sort and Cleaning/grinding of Line 4.

Step 1 − Identify All Potentially Available Control Options

There are two categories of controls for volatile organic compounds (VOCs); destruction processes and reclamation processes. Destruction technologies reduce the VOC concentration by high temperature oxidation into carbon dioxide and water vapor. Reclamation is the capture of VOCs for reuse or disposal. There are also commercially available combinations of reclamation and destruction technologies.

(1) Alternative casting production methods

(2) Incineration

(3) Flares

(4) Advance Oxidation

(5) Mold vent off gas ignition

(6) Absorption

(7) Adsorption

(8) Biodegradation

(9) Condensation

Step 2 − Eliminate Technically Infeasible Control Options

(1) Alternative casting production methods

Casting line VOC emissions are generated by the pouring/mold cooling and shakeout operations when molten iron contacts the mold and core materials, burning the organic constituents. These organic constituents are an essential part of the casting process and are required to maintain casting quality. During the 1990's, the Wisconsin Department of Natural Resources established requirements for organic hazardous air pollutants under Chapter NR 445, Wis. Adm. Code. Waupaca Foundry, Inc. and other state foundries conducted extensive investigations of alternative production methods with a potential to reduce emissions of these pollutants. To date, no alternative casting production methods are available to the foundry industry which would provide predictable reductions in VOC emissions.

Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the use of alternative casting production methods is not a technically feasible option for the reduction of VOC from the Line 4 Casting Line at this source.

(2) Incineration

Add-on incineration control equipment has been applied to operations generating high concentrations of VOC in the flue gas such as printing presses. In these cases, incineration equipment is used to raise the exhaust gas temperature to the combustion temperature of VOC.

An incineration system could conceivably operate if located after the baghouse control system has removed dust in the exhaust gases. This system could consist of either a recuperative, regenerative, or catalytic design.

(a) A recuperative thermal incinerator controls VOC in a gas stream pre-heated by exiting flue gas from the same system in a heat exchanger or recuperator. For the casting line operations, baghouses would be required to pre-clean the exhaust gases in advance of the incineration control equipment.

(b) A regenerative thermal oxidizer uses a direct contact heat exchanger consisting of a bed of porous ceramic packing or other structured, high heat capacity media.

(c) A catalytic oxidizer is an add-on control device to control VOC emissions by using a bed of catalyst that facilitates the oxidation of combustible gases. The catalyst increases the reaction rate and allows the conversion of VOC at lower temperature than a thermal incinerator. Typical problems encountered when using a catalytic incinerator is that the contaminants in the exhaust stream can poison or foul the catalyst bed. Given the nature of foundry operations, this is a serious problem.

A recuperative design has been evaluated for recent Waupaca Foundry, Inc. BACT determinations for projects in Wisconsin, Indiana, and Tennessee. The recuperative incinerator design is expected to be less sensitive to the residual contaminants leaving the baghouse system than regenerative or catalytic incinerator designs.

Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the use of Recuperative and Regenerative thermal incinerators are technically feasible option and use of catalytic oxidizer system is not a technically feasible option for the reduction of VOC from the Line 4 Casting Line at this source.

(3) Flares

A flare is feasible when the flue gas concentration of the combustible gas such as VOC is high enough to sustain combustion without the support of an auxiliary fuel like natural gas. Unlike incineration, the gas is burned with no heat recovery and direct venting to the atmosphere. In this case, the VOC concentrations from the casting lines are too low to sustain combustion.

A flare is not technically feasible because the exhaust stream concentration must be high enough to sustain combustion, requiring a VOC inlet concentration of greater than 13,000 ppm, which is not feasible with the foundry's casting line operations. They require a high heating value waste gas (in excess of 300 BTU/scf) or supplemental fuel.

Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the use of a flare is not a technically feasible option for the reduction of VOC from the Line 4 Casting Line at this source.

(4) Advanced oxidation

Advanced oxidation is an approach for reducing VOC emissions at the mold line by reducing the VOC emissions generated by the green sand molds. An advanced oxidation system works by treating the water used in the sand mixing, mulling, and the cooling operations with the goal of reducing VOC emissions when oxidants react with the green sand. The amount of reduction is dependent upon several factors, including core loading, coal/clay composition, and binder systems.

IDEM, OAQ has determined that the use of Advanced oxidation is a technically feasible option for the Line 4 Casting Line at this source.

(5) Mold Vent Off Gas Ignition

After the molten iron is poured into the sand molds, the mold vent off gas spontaneously ignites, reducing the VOC generated during this operation. This practice is an organic HAP control requirement specified in the final MACT rule for iron and steel foundries. Mold vent off-gas ignition already occurs on the casting lines at Plant 5. Therefore, this option is technically feasible.

Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the use of mold vent off gas ignition is a technically feasible option for the reduction of VOC from the Line 4 Casting Line at this source.

(6) Absorption

This control method uses contact between a gas mixture and a liquid so the gas is dissolved in the liquid. Factors controlling the effectiveness of this method include: gas solubility, gas-to-liquid ratio, contact time, and contact mechanism. It is not expected to be technically feasible for this application because the VOC released from foundry operations is not expected to be soluble in water, and the uncontrolled concentrations will be very dilute. No prior BACT determination for a foundry has required this control method.

Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the use of absorption is not a technically feasible option for the reduction of VOC from the Line 4 Casting Line at this source.

(7) Adsorption

This control method captures gaseous pollutants on the surface of an adsorbent solid. The adsorbent is typically activated carbon which has a large surface area. It is not expected to be technically feasible for this application because: (1) the VOC released from foundry operations will contain a complex mixture of contaminants with varying abilities to be collected, (2) the uncontrolled concentrations will be very dilute, and (3) solid and liquid particles will coat the surface of the carbon. No prior BACT determination for a foundry has required this control method.

Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the use of adsorption is not a technically feasible option for the reduction of VOC from the Line 4 Casting Line at this source.

(8) Biodegradation

This control method destroys gaseous pollutants by passing them over a filter of biologically active material. It is not expected to be technically feasible for this application because: (1) the VOC released from foundry operations will contain a complex mixture of contaminants with varying abilities to be destroyed, (2) the uncontrolled concentrations will be very dilute, and (3) the presence of solid and liquid particles will plug the active material. No prior BACT determination for a foundry has required this control method.

Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the use of biodegradation is not a technically feasible option for the reduction of VOC from the Line 4 Casting Line at this source.

(9) Condensation

This control method uses refrigeration to cool the exhaust stream and convert the VOC from a gaseous phase to liquid phase. It is not expected to be technically feasible for this application

because the uncontrolled VOC concentrations will be too dilute. No prior BACT determination for a foundry has required this control method.

Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the use of condensation is not a technically feasible option for the reduction of VOC from the Line 4 Casting Line at this source.

Step 3 – Rank Remaining Control Technologies by Control Effectiveness

Based on the technical feasibility analysis in Step 2, the remaining control technologies may be ranked as follows:

Rank	Control Technology	VOC Reduction
1	Recuperative thermal incinerator	96 to 99 %
2	Advanced oxidation	20 to 70%
3	Mold Vent-Off Gas Ignition	50 %

The following table lists the proposed VOC BACT determination along with the existing VOC BACT determinations for casting lines. All data in the table is based on the information obtained from the permit application submitted by INTAT Precision, Inc., the U.S. EPA RACT/BACT/LAER Clearinghouse (RBLC), and electronic versions of permits available at the websites of other permitting agencies.

These VOC PSD BACT determinations are arranged in descending order in terms of the lb/ton limit.

Plant	PBLD ID or Permit #	Date Issued and State	Facility	Control Device	VOC BACT Determination
Waupaca Foundry, Inc. Plant 2/3, Waupaca, WI	WI-0239 (a)	1/12/2006 (WI)	Shakeout	None	0.1 lbs/ton (PSD BACT)
Waupaca Foundry, Inc. Plant 1, Waupaca, WI	WI-0238 (a)	1/12/2006 (WI)	Shakeout (Lines 1, 3 - 6)	None	0.1 lbs/ton (PSD BACT)
			Pouring/MC (Lines 1, 3 - 6)	None	0.5 lbs/ton (PSD BACT) (total = 0.6 lb/ton)
Waupaca Foundry, Inc. Plant 2/3, Waupaca, WI	WI-0237 (a)	12/5/2005 (WI)	Shakeout 3 to 7	None	0.1 lbs/ton (PSD BACT)
			Pouring/MC 3 to 7	None	0.5 lbs/ton (PSD BACT) (total = 0.6 lb/ton)
Waupaca Foundry, Inc. Plant 2/3, Waupaca, WI	#12-POY-127 (a)	2012	Casting Line 7	Mold vent off gas ignition	0.6 lbs/ton (PSD BACT)
Waupaca Foundry, Inc. Plant 6, Etowah, TN	#960724P	2007	Phase I and II Lines 1 – 8	None	0.6 lbs/ton (PSD BACT)
			Phase II Line 1	None	0.6 lbs/ton (PSD BACT)
Waupaca Foundry, Inc. Plant 4, Marinette, WI	WI-0236 (a)	12/17/2006 (WI)	DISA LINES #4 & #5 - Pouring, mold cooling, shakeout and autopour start-up (Two lines)	None	0.6 lbs/ton (PSD BACT)
Dalton Corporation, Warsaw, IN	085-18009-00003 (b)	12/9/2003 (IN)	Herman 3 Pouring Station and Castings Cooling Process	Sonoperoxone Sand Optimization, Low VOC Core Binder, Mold Vent Off Gas Ignition	0.36 lbs/ton – Cooling; 0.163 lbs/ton – Pouring (PSD BACT)

Plant	PBLD ID or Permit #	Date Issued and State	Facility	Control Device	VOC BACT Determination
INTAT Precision, Inc., Rushville, IN	139-25610-00011 (b)	11/19/2009 (IN)	Pouring, cooling, shakeout and bad heat shakeout	Advanced Oxidation (AO) System	1.3 lbs/ton (PSD BACT)
Waupaca Foundry, Inc. Plant 5, Tell City, IN	IN-0136	05/10/2011 (IN)	Casting Lines 1 to 8 (Pouring, Cooling, Shakeout)	Mold vent off gas ignition	1.4 lbs/ton; 138.6 lbs/hr (PSD BACT)
Waupaca Foundry, Inc. Plant 5, Tell City, IN	*PSD 123-33464-0019*	*IN Proposed**	*Line 4 (Pouring, Mold cooling, and Shakeout*	*Mold vent off gas ignition*	*1.4 lbs/ton; 157.2 lbs/hour, combined for both stacks, identified as S01 and S04 (PSD BACT)*
Waupaca Foundry, Inc. Plant 5, Tell City, IN	123-26008-00019	4/17/2009 (IN)	Derating Project Pouring/cooling/ shakeout - 35 tph	Mold vent off gas ignition	1.9 lbs/ton; 112 lbs/hr (PSD BACT)
John Deere Foundry, Waterloo, IA	IA-0104	7/4/2012 (IA)	New Casting Line (Pouring, Shakeout, and Sand Handling)	None	2.5 lbs/ton; 8 ppmv (PSD BACT)
Asama Coldwater Manufacturing, Inc.	MI-0385	4/8/2008 (MI)	Melting and Pouring	None	5.28 lbs/hr (PSD BACT)
			Mold Machine and Sand Handling	None	4 lbs/hr (PSD BACT)
			Automated mold cooling conveyor system and shakeout lines	None	15.49 lbs/hr; 20 ppmv (PSD BACT)
McWane Gray and Ductile Iron Foundry	TX-0517	12/21/2005 (TX)	Impact Flexkleens Molding	None	9.56 lbs/hr (PSD BACT)
			Impact Molding	None	21.25 lbs/hr (PSD BACT)

* The VOC PSD BACT being proposed by Waupaca is to maintain the 1.4 lb/ton rate, but increase the total emissions in terms of lb/hr to accommodate the increase in maximum capacity. There are several sources that appear to have more stringent VOC PSD BACT limits than what is being proposed. See below for explanation why these are not being considered as PSD VOC BACT for Line 4.

VOC emissions are generated in the Pouring/Mold Cooling and Shakeout portion of Line 4. There are no VOC emissions from the Cast Cooling, Pick & Sort and Cleaning/grinding of Line 4.

(a) Comparison with Prior BACT Determinations in Wisconsin

The determinations for Waupaca Foundry, Inc. foundries in Wisconsin incorporate the same use of mold vent-off gas ignition as proposed for Plant 5 in Tell City, Indiana. The VOC limitation for pouring/mold cooling and shakeout operations in Wisconsin is 0.6 lbs/ton, which is lower than the 1.4 lbs/ton proposed for this project. The difference in limitations is due to differences in the VOC compliance test method. Compliance with the VOC limitations in Wisconsin is based on US EPA Method 18 while the compliance with VOC limitations in Indiana is based on US EPA Method 25.

Method 18 is used to determine the Volatile Organic Hazardous Pollutant (VOHAP) concentration while Method 25 is used to determine concentration of total gaseous nonmethane organics (TGNMO).

In addition, the 0.1 lb/ton limit is not to be considered as BACT for Line 4 because this limit is specified for the shakeout portion of the line only. This is not comparable with the VOC BACT limit being proposed which is supposed to be include the pouring, mold cooling and shakeout of Line 4.

(b) Comparison with Prior BACT Determinations in Indiana

The VOC limitations established for Dalton and INTAT foundries in Indiana are lower than the 1.4 lbs/ton proposed for this project. These two determinations were previously evaluated by IDEM for approval of the cupola modification project at Waupaca Foundry, Inc. Plant 5 in Tell City, Indiana on June 1, 2011, with Significant Permit Modification No.123-29490-00019. In its BACT analysis, IDEM concluded that the Dalton and INTAT determinations were not applicable to Waupaca Foundry, Inc. Plant 5 (referred to below as ThyssenKrupp Waupaca) and stated:

> INTAT Precision, Inc in Rushville, Indiana, requires a lower amount of organic sea coal in its molding sand compared to the molding sand used to produce grey iron, such as Phase 1. This is based on natural surface finish of ductile iron as compared to grey iron. Lower organic material concentrations in the molding sand provide less combustible matter to generate the VOC emissions. ThyssenKrupp Waupaca (TKW) uses longer cooling lines than at INTAT. Longer cooling times allows more time for contact between the hot iron and combustible matter in the molds. There may be other differences in raw materials and production variables between INTAT and TKW that accounts for differences in VOC test results and emission limitations.
>
> The proposed VOC limitation for INTAT is 1.3 lbs/ton. However, it is not clear if this is attainable. Tests at INTAT in 2005 showed emissions of 2.3 lbs/ton, well above their permit limit of 0.8 lbs/ton as well as all the tests at TKW Plant 5.
>
> Dalton Foundry manufactures grey iron, but uses a cope and drag method where each casting has its own horizontal mold. At TKW, the molds are continuous, vertical and stack adjacent to each other providing more contact between the hot castings and the organic constituents of the mold. The sand to metal ratio at Dalton would be higher than that of TKW. Capturing emissions from a horizontal flask molding system may be more difficult than the vertical molding operation at TKW. A reduction in capture efficiency would reduce the quantity of measurable VOC emissions. There may be other differences in the raw materials and production variables between Dalton and TKW that accounts for the difference in VOC test results and emissions limitations. In 2003, the approved BACT determination for Dalton was 0.1627 lb/ton of iron for pouring, 0.36 lbs/ton of iron for cooling, 0.115 lbs/ton of iron and sand for shakeout and 0.115 lbs/ton of iron and sand for sand handling. The equivalent emission limitation for all operations based only on iron throughput is 1.42 lbs/ton of VOC per ton of iron. (This factor is based on annual VOC emissions and iron production approved by IDEM for Herman 3 Mold Line). Compliance tests in 2005 showed Dalton could not comply with the limit for the cooling operation. New tests are required every 2.5 years after issuance of the Title V permit. Both INTAT and Dalton have permit conditions that allow the VOC limitations to be increased if compliance tests are higher than specified in the permit.
>
> The proposed BACT determination for TKW is based on several stack tests conducted under varying production conditions from October 2006 to November 2007. The proposed BACT limitation for TKW is supported by more test results than those for either INTAT or Dalton.

(c) Comparison with NSPS and NESHAP Requirements

BACT must be no less stringent than the level of control required by any applicable New Source Performance Standard (NSPS) and National Emissions Standard for Hazardous Air Pollutants

(NESHAP) or state regulatory standards applicable to the emission units included in the permits. There currently is no NSPS for iron foundries. There is a NESHAP for steel and iron foundries under 40 CFR Part 60 Subpart EEEEE. These regulations require that:

> "for one or more automated conveyor and pallet cooling lines that use a sand mold system or automated shakeout lines that use a sand mold system at a new iron and steel foundry, you must not discharge emissions of VOHAP through a conveyance to the atmosphere that exceed a flow-weighted average of 20 ppmv."

This limitation is based on the use of an incineration or carbon adsorption system to control Volatile Organic Hazardous Air Pollutants (VOHAP) which exceed 20ppmv. The VOC emissions are expected to contain both hazardous air pollutants (HAP) and non-HAP constituents. The BACT analysis presented here evaluates the feasibility of using incineration for controlling the VOC emissions from the pouring/mold cooling and shakeout operations.

There are no known state regulations which limit VOC emissions specifically from the casting lines.

Step 4 – Evaluate the Most Effective Controls and Document Results

Incinerator

Process	Control Alternative	Rank	Control Efficiency (%)	Expected Emission Rate after control (tons per year)	Emission Reduced (tons per year)	Cost Effectiveness ($/ton)*
Line 4 Pouring, Cooling, Shakeout	Recuperative thermal incinerator	1	99%	8.3	237	26,161
	Regenerative thermal incinerator	1	99%	8.3	237	13,260

* Please refer Appendix C for the detailed analysis of Total Cost Effectiveness.

The estimated cost effectiveness for the Recuperative and Regenerative thermal incinerators as shown above are considered economically infeasible, therefore, the use of the Recuperative and Regenerative thermal incinerators are not being considered as BACT for Line 4.

Thermal oxidizer requires use of natural gas for combustion. The combustion of the natural gas will result in emissions of nitrogen oxides and other air pollutants.

Advanced oxidation (AO)
Advanced oxidation (AO) is an approach for reducing VOC emissions at the mold line by reducing the VOC emissions generated by the green sand molds. An advanced oxidation system works by treating the water used in the sand mixing, mulling, and the cooling operations with the goal of reducing VOC emissions when oxidants react with the green sand. Advanced oxidation systems have been installed at several foundries and these foundries (following sand system stabilization) have reported reductions in VOCs ranging from 20 to 75 percent. The amount of reduction is dependent upon several factors, including core loading, coal/clay composition, and binder systems.

While IDEM has previously identified AO as a VOC alternative, the tests conducted at Plant 5 did not confirm that AO reduces VOC emissions. The AO system treats the water used in the green sand cooling and mulling operations. The primary benefit of AO is a reduction in bond consumption, lowering raw material costs. A secondary, unpredictable benefits, is a reduction in VOC emissions. Some foundries have modified their mold sand preparation systems to use AO.

Examples include ThyssenKrupp Waupaca, Inc Plant 4, Grede Foundries, Inc. in Wisconsin, Dalton Foundry INTAT Precision, Inc., and ThyssenKrupp Waupaca Pant 5 in Indiana. While there are potential emission reduction benefits due to the use of AO, these are not predictable with any precision. VOC emissions vary from foundry to foundry and with many variables involved in the casting process (including casting size and shape, mold sand size and composition and core to metal ratio to name a few).

The variability of VOC emissions and unpredictability for the reduction of VOC emissions is shown by the testing program at Plant 5. In some instances VOC emissions prior to the use of AO were lower than emissions measured during tests after installation of AO.

IDEM confirmed the variability and unpredictability of the benefits of AO in its 2003 BACT Analysis for Dalton Foundry:

> "Dalton Foundry has submitted information demonstrating that VOC reductions from the use of advance oxidation system are highly variable and difficult to predict. As a result, IDEM included language in the permit that allows the VOC limit on Herman 3 cooling process to be adjusted up or down after the initial stack test results have been reviewed and approved by IDEM".

Mold Vent-Off Gas Ignition

Mold vent-off gas ignition is the remaining control alternative for the casting lines. This control method is already used by the casting lines at Plant 5 so its benefit is included in the emission estimates.

Mold gases automatically ignite in Mold vent-off gas ignition system if they are combustible; therefore, no auxiliary fuel is needed. If mold gases are not self ignitable, then the use of natural gas pilot flames is necessary for ignition purpose. However, the amount of the natural gas used for pilot flames is minimal.

Step 5 – Select BACT

Pursuant to 326 IAC 2-2 and 326 IAC 8-1-6, IDEM, OAQ has established the VOC BACT for Line 4 as follows:

(1) The combined volatile organic compounds (VOCs) emissions from pouring/mold cooling and shakeout of Line 4 shall be controlled by a mold vent off gas ignition.

(2) The combined volatile organic compounds (VOCs) emissions from pouring/mold cooling and shakeout Line 4 shall not exceed 1.4 pounds per ton of iron.

(3) The VOC emissions from the pouring/mold cooling and shakeout of Line 4 shall not exceed 56 lb/hr.

(4) The combined volatile organic compounds (VOCs) emissions from Stacks S01 and S04 shall not exceed 157.2 pounds per hour.

The total hourly VOC emission limit of Stack S01 and S04 is sum of the VOC emissions contributed by all the emission units venting to the Stack S01 and S04. Please refer 'Permit Level Determination – PSD' section of the TSD for details of Stack S01 limit.

Carbon Monoxide (CO) BACT – Line 4

CO emissions are generated in the Pouring/Mold Cooling and Shakeout portion of Line 4. There are no CO emissions from the Cast Cooling, Pick & Sort and Cleaning/grinding of Line 4.

Step 1 − Identify All Potentially Available Control Options

Emissions of carbon monoxide (CO) are generally controlled by oxidation. Combustion control technologies include

(1) Alternative casting production methods

(2) Incineration

(3) Flares

(4) Advance Oxidation

(5) Mold vent off gas ignition

Step 2 − Eliminate Technically Infeasible Control Options

(1) Alternative casting production methods

Casting line CO emissions are generated by the pouring/mold cooling and shakeout operations when molten iron contacts the mold and core materials, burning the organic constituents. These organic constituents are an essential part of the casting process and are required to maintain casting quality. During the 1990's, the Wisconsin Department of Natural Resources established requirements for organic hazardous air pollutants under Chapter NR 445, Wis. Adm. Code. Waupaca Foundry, Inc. and other state foundries conducted extensive investigations of alternative production methods with a potential to reduce emissions of these pollutants. To date, no alternative casting production methods have become available to the foundry industry which would provide predictable reductions in CO emissions.

(2) Incineration

Add-on incineration control equipment has been applied to operations generating high concentrations of CO in the flue gas such as printing presses. In these cases, incineration equipment is used to raise the exhaust gas temperature to the combustion temperature of CO. An incineration system could conceivably operate if located after the baghouse control system has removed dust in the exhaust gases. This system could consist of either a recuperative, regenerative, or catalytic design.

(a) A recuperative thermal incinerator controls CO in a gas stream pre-heated by exiting flue gas from the same system in a heat exchanger or recuperator. For the casting line operations, baghouses would be required to pre-clean the exhaust gases in advance of the incineration control equipment.

(b) A regenerative thermal oxidizer uses a direct contact heat exchanger consisting of a bed of porous ceramic packing or other structured, high heat capacity media.

(c) A catalytic oxidizer is an add-on control device to control CO emissions by using a bed of catalyst that facilitates the oxidation of combustible gases. The catalyst increases the

> reaction rate and allows the conversion of CO at lower temperature than a thermal incinerator. Typical problems encountered when using a catalytic incinerator is that the contaminants in the exhaust stream can poison or foul the catalyst bed. Given the nature of foundry operations, this is a serious problem.

A recuperative design has been evaluated for recent Waupaca Foundry, Inc. BACT determinations for projects in Wisconsin, Indiana, and Tennessee. The recuperative incinerator design is expected to be less sensitive to the residual contaminants leaving the baghouse system than regenerative or catalytic incinerator designs.

Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the use of incineration system is a technically feasible option for the reduction of CO from the Line 4 Casting Line at this source.

(3) Flares

A flare is feasible when the flue gas concentration of the combustible gas such as CO is high enough to sustain combustion without the support of an auxiliary fuel like natural gas. Unlike incineration, the gas is burned with no heat recovery and directly vented to the atmosphere. In this case, the CO concentrations from the casting lines are too low to sustain combustion. Use of a flare is not a technically feasible option.

Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the use of a flare is not a technically feasible option for the reduction of VOC from the Line 4 Casting Line at this source.

(4) Advanced oxidation

This method treats the water used in the green sand cooling and mulling operations by the addition of ozone. While the primary benefit of AO is a reduction in bond consumption and lower raw material costs, a secondary benefit is a potential reduction in VOC emissions. With a reduction in VOC, there is also likely to be a reduction in CO emissions, though this has not been confirmed. VOC and CO emissions vary from foundry to foundry, and with the many variables of the casting process including casting size and shape, mold sand size and composition, and core to metal ratio. The variability of VOC emission and unpredictability for the reduction of VOC emission was shown during an AO testing program at Waupaca Foundry, Inc. Plant 5. Indiana Department of Environmental Management confirmed the variability and unpredictability of the benefits of AO in its 2003 BACT Analysis for Dalton Foundry:

> "Dalton Foundry has submitted information demonstrating that VOC reductions from the use of advance oxidation system are highly variable and difficult to predict. As a result, IDEM (has) included language in the permit that allows the VOC limit on Herman 3 cooling process to be adjusted up or down after the initial stack test results have been reviewed and approved by IDEM".

Due to the unpredictability of the emission reduction benefits of AO, it is considered to be a technically infeasible option.

Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the use of an Advanced Oxidation is not a technically feasible option for the reduction of VOC from the Line 4 Casting Line at this source.

(5) Mold vent-off gas ignition

After the molten iron is poured into the sand molds, the mold vent off gas spontaneously ignites, reducing the VOC and CO generated during this operation. This practice is an organic hazardous

air pollutant control requirement specified in the final MACT rule for iron and steel foundries. Mold vent off-gas ignition already occurs on the casting lines at Plant 5. Therefore, this option is technically feasible.

Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the use of mold vent off gas ignition is a technically feasible option for the reduction of VOC from the Line 4 Casting Line at this source.

Step 3 – Rank Remaining Control Technologies by Control Effectiveness

IDEM, OAQ has ranked the technically feasible control technologies as follows:

Rank	Control Technology	VOC Reduction
1	Recuperative thermal incinerator	90 to 99 %
2	Advanced oxidation	20 to 70%
3	Mold Vent-Off Gas Ignition	50 %

The following table lists the proposed CO BACT determination along with the existing CO BACT determinations for casting lines. All data in the table is based on the information obtained from the permit application submitted by INTAT Precision, Inc., the U.S. EPA RACT/BACT/LAER Clearinghouse (RBLC), and electronic versions of permits available at the websites of other permitting agencies.

These CO PSD BACT determinations are arranged in descending order in terms of the lb/ton limit.

Plant	PBLD ID or Permit #	Date Issued and State	Facility	Control Device	CO BACT Determination
John Deere Foundry, Waterloo, IA	IA-0104	7/4/2012 (IA) [(a)]	New Casting Line (Pouring, Shakeout, and Sand Handling)	None	5.3 lbs/ton; 520 lb/hr 58 ppmv (PSD BACT)
Waupaca Foundry, Inc. Plant 5, Tell City, IN	*PSD 123-33464-00019*	*IN Proposed**	*Line 4 (pouring/mold cooling and Shakeout)*	*Mold vent off gas ignition*	*6 lbs/ton (PSD BACT)*
Waupaca Foundry, Inc. Plant 2/3, Waupaca, WI	--	WI Pending	Casting Line 5	Mold vent off gas ignition	6 lbs/ton (PSD BACT)
Waupaca Foundry, Inc. Plant 2/3, Waupaca, WI	#12-POY-127	*2012*	Casting Line 7	Mold vent off gas ignition	6 lbs/ton (PSD BACT)
Waupaca Foundry, Inc. Plant 5, Tell City, IN	IN-0136	05/10/2011 (IN)	Casting Lines 1 to 8 (Pouring, Cooling, Shakeout)	Mold vent off gas ignition	6 lbs/ton (PSD BACT)
Rochester Metal Products Corp., Fulton County, IN	IN-0147	2010	Disa 1 Casting Line Disa 2 Casting Line	None	6.0 lbs/ton (PSD BACT)
Asama Coldwater Manufacturing, Inc.	MI-0385	4/8/2008 (MI)	Melting and Pouring	None	44.55 lbs/hr; 2.7 lbs/ton (PSD BACT)
			Automated mold cooling conveyor system and shakeout lines	None	62.7 lbs/hr; 3.8 lbs/ton (PSD BACT)
Waupaca Foundry, Inc. Plant 6, Etowah, TN	#960724 P	2007	Phase I and II Lines 1 – 8	None	6 lbs/ton (PSD BACT)

Plant	PBLD ID or Permit #	Date Issued and State	Facility	Control Device	CO BACT Determination
			Phase II Line 1	None	6 lbs/ton (PSD BACT)
Waupaca Foundry, Inc. Plant 1, Waupaca, WI	WI-0238	1/12/2006 (WI)	Shakeout (Lines 1, 3 - 6)	None	1 lbs/ton (PSD BACT)
			Pouring/MC (Lines 1, 3 - 6)	None	5 lbs/ton (PSD BACT) (total = 6 lb/ton)
Waupaca Foundry, Inc. Plant 2/3, Waupaca, WI	WI-0237	12/5/2005 (WI)	Shakeout 3 to 7	None	1 lbs/ton (PSD BACT)
			Pouring/MC 3 to 7	None	5 lbs/ton (PSD BACT) (total = 6 lb/ton)
Waupaca Foundry, Inc. Plant 4, Marinette, Wi	WI-0236	12/17/2006 (WI)	Pouring, mold cooling, shakeout and autopour start-up (Two lines)	None	6 lbs/ton (PSD BACT)
McWane Gray and Ductile Iron Foundry	TX-0517	12/21/2005 (TX)	Impact Flexkleens	None	45.79 lbs/hr (PSD BACT)
			Impact Molding	None	101.75 lbs/hr (PSD BACT)

* The CO PSD BACT being proposed by Waupaca Foundry, Inc. Plant 5 is to maintain the 6 lb/ton rate, but increase the total emissions in terms of lb/hr to accomodate the increase in maximum capacity. There is a source that appear to have more stringent CO PSD BACT limit than what is being proposed. See below for explanation why this is not being considered as PSD CO BACT for Line 4.

CO emissions are generated in the Pouring/Mold Cooling and Shakeout portion of Line 4. There are no CO emissions from the Cast Cooling, Pick & Sort and Cleaning/grinding of Line 4.

(a) Comparison with Prior BACT Determinations

There were no BACT determinations which required control options besides those which are already under consideration for this application.

There was a determination made for John Deere Foundry, Waterloo, IA with an emission limit of 5.3 lbs/ton, which is more stringent than the 6.0 lbs/ton proposed for this project. However, further review of the permit for the Iowa project shows that the 5.3 lbs/ton limit applies to a larger casting line with a capacity of 61 tons per hour, which is equivalent to 323.3 lb/hr. However, the hourly emission limitation specified in the permit for all casting line operations is 520 lbs/hr, which is equivalent to 8.5 lbs/ton when all operations are included. Based on this, 5.3 lbs/ton will not be considered as CO PSD BACT for Line 4.

CO = 5.3 lb/hr*61 ton/hr = 323.3 lb/hr

CO = 520 lb/hr/61 ton/hr = 8.5 lb/ton

(b) Comparison with NSPS and NESHAP Requirements

BACT must be no less stringent than the level of control required by any applicable New Source Performance Standard (NSPS) and National Emissions Standard for Hazardous Air Pollutants (NESHAP), or by state regulatory standards applicable to the emission units included in the permits. There currently is no NSPS for iron foundries. There is a NESHAP for steel and iron foundries under 40 CFR Part 60 Subpart EEEEE, but these regulations have no CO emission

limitations.

There are no known state regulations which limit CO emissions from the casting lines.

Step 4 – Evaluate the Most Effective Controls and Document Results

Incinerator

Process	Control Alternative	Rank	Control Efficiency	Expected Emission Rate (tons per year)	Emission Reduction (tons per year)	Cost Effectiveness ($/ton)*
Line 4 Pouring, Cooling, Shakeout	Recuperative thermal incinerator	1	87.8%	127.8	923.4	6,715
	Regenerative thermal incinerator	1	87.8%	8.3	237	3,403

* Please refer Appendix C for the detailed analysis of Total Cost Effectiveness.

CO concentrations from the modified operations while operating at full capacity are expected to be 601 ppm. These concentrations are much lower than other processes which use incineration to control their CO emissions. These include the iron melting cupolas used at Waupaca Foundry, Inc. which have inlet CO concentrations exceeding 150,000 ppm. Secondly, the inlet gases will contain a complex mixture of solid and condensable particulates, VOC and CO. This may require pre-cleaning to avoid problems with incinerator operation. Lastly, the cost effectiveness is based on the maximum allowable CO emissions, while actual emissions are expected to vary. The lack of long term CO emissions data for casting lines makes it difficult to quantify the benefits of add-on control equipment.

Mold Vent-Off Gas Ignition
Mold vent-off gas ignition is the remaining control alternative for the casting lines. This control method is already used by the casting lines at Plant 5 so its benefit is included in the emission estimates.

Mold gases automatically ignite in Mold vent-off gas ignition system if they are combustible; therefore, no auxiliary fuel is needed. If mold gases are not self ignitable, then the use of natural gas pilot flames is necessary for ignition purpose. However, the amount of the natural gas used for pilot flames is minimal.

Step 5 – Select BACT

Pursuant to 326 IAC 2-2, IDEM, OAQ has established Carbon Monoxide (CO) BACT for Line 4 as follows:

(1) The combined carbon monoxide (CO) emissions from the pouring/mold cooling and shakeout of Line 4 shall be controlled by a mold vent off gas ignition.

(2) The combined carbon monoxide (CO) emissions from the pouring/mold cooling and shakeout of Line 4 shall not exceed 6.0 pounds per ton of iron.

(3) The CO emissions from the pouring/mold cooling and shakeout of Line 4 shall not exceed 240 lb/hr.

(4) The combined carbon monoxide (CO) emissions from Stack S01 shall not exceed 606.2 pounds per hour.

The total hourly CO emission limit of Stack S01 is sum of the CO emissions contributed by all the emission units venting to the Stack S01. Please refer 'Permit Level Determination – PSD' section of the TSD for details of Stack S01 limit.

IDEM Contact

(a) Questions regarding this BACT Analysis can be directed to Sarah Street at the Indiana Department Environmental Management, Office of Air Quality, 100 North Senate Avenue, MC 61-53, Room 1003, Indianapolis, Indiana 46204-2251 or by telephone at (317) 232-8427 or toll free at 1-800-451-6027 extension 2-8427.

(b) A copy of the findings is available on the Internet at: http://www.in.gov/ai/appfiles/idem-caats/

(c) For additional information about air permits and how the public and interested parties can participate, refer to the IDEM's Guide for Citizen Participation and Permit Guide on the Internet at: www.idem.in.gov

Appendix C
BACT Cost Analysis

Company Name: **Waupaca Foundry, Inc. - Plant 5**
Source Address: **9856 State Highway 66, Tell City, Indiana 47586**
Significant Source Modification No.: **123-33464-00019**
Significant Permit Modification No. : **123-33469-00019**
Reviewer: **Sarah Street and Mehul Sura**

Flow and Emissions Based on Process P16 and P17

CO

Stack	Process	Control Alternative	Potential Emissions after control (tpy)	Emissions Reduction (tpy)	Control Efficiency (%)	Economic Impacts		Environmental Impacts	Energy Impacts	
						Annualized Cost ($/yr)	Cost Effectiveness ($/ton)	Toxics Residues Air Quality	Fuel Usage (cf6/yr)	Electrical Usage (mw-hrs/yr)
S01	Line 4 P/MC/S	Recuperative thermal incinerator	127.8	923.4	87.8%	$6,200,123	$6,715	a, b, c	408	2,968
		Regenerative thermal incinerator	127.8	923.4	87.8%	$3,142,660	$3,403	a, b, c	51	2,968

VOC

Stack	Process	Control Alternative	Potential Emissions after control (tpy)	Emissions Reduction (tpy)	Control Efficiency (%)	Economic Impacts		Environmental Impacts	Energy Impacts	
						Annualized Cost ($/yr)	Cost Effectiveness ($/ton)	Toxics Residues Air Quality	Fuel Usage (cf6/yr)	Electrical Usage (mw-hrs/yr)
S01	Line 4 P/MC/S	Recuperative thermal incinerator	8.3	237.0	96.6%	$6,200,123	$26,161	a, b, c	408	2,968
		Regenerative thermal incinerator	8.3	237.0	96.6%	$3,142,660	$13,260	a, b, c	51	2,968

a - This control option generates no unacceptable residues or wastes.
b - This control options does not affect facility compliance with National Ambient Air Quality Standards.
c - This control option will also control CO emissions from the casting lines, but will generate GHG, NOx, CO and VOC emissions from natural gas combustion.

Appendix C
BACT Cost Analysis

Company Name: Waupaca Foundry, Inc. - Plant 5
Source Address: 9856 State Highway 66, Tell City, Indiana 47586
Significant Source Modification No.: 123-33464-00019
Significant Permit Modification No. : 123-33469-00019
Reviewer: Sarah Street and Mehul Sura

INCINERATION COST ESTIMATE	Stack	S01	S01	S01	S01
	Process	Line 4	Line 4	Line 4	Line 4
	Description	P/MC/S	P/MC/S	P/MC/S	P/MC/S
Basis for Flow Rate		P16 & P17	P16 & P17	P16 & P17	P16 & P17
Basis for Emissions		P16 & P17	P16 & P17	P16 & P17	P16 & P17
Incinerator Type		**Recuperative**	**Regenerative**	**Catalytic**	**Oxidation Catalyst**
ASSUMPTIONS					
Flow Rate (ACFM)		97000	97000	97000	97000
Process Flue Gas Temperature = T inlet (F)		100	100	100	100
Flow Rate (SCFM)		91457	91457	91457	91457
Heat Exchanger Efficiency (%)		70	95	70	0
Incinerator Combustion Temperature (F)		1500	1500	600	600
Heat Exchanger Outlet Temp = T outlet (F)		520	170	250	600
Energy Contribution from CO and VOC (BTU/min)		39681	39681	39681	39681
Incinerator Pressure Drop ("wc)		4	4	6	6
Heat Exchanger Pressure Drop ("wc)		15	15	15	0
Total Incineration System Pressure Drop ("wc)		19	19	21	6
Operating Shifts per Year		1095	1095	1095	1095
Labor Cost ($ per hour)		$50	$50	$50	$50
Heat Capacity @ Combustion Temperature (BTU/scf F)		0.0193	0.0193	0.0193	0.0193
Operating Hours per Year		8760	8760	8760	8760
Natural Gas Cost ($/Therm)		$0.90	$0.90	$0.90	$0.90
Electrical Cost ($/kw-hr)		$0.07	$0.07	$0.07	$0.07
Fan and Motor Efficiency (%)		60	60	60	60
Equipment Life (Years)		10	10	10	10
Interest Rate (%)		10	10	10	10
Capital Recovery Factor for 10 Year Period		0.1627	0.1627	0.1627	0.1627
Capital Recovery Factor for 5 Year Period		0.2638	0.2638	0.2638	0.2638
Historical Vatavuk Air Pollution Control Index for 1988		96.3	96.3	96.3	96.3
Historical Vatavuk Air Pollution Control Index for 1994		120.5	120.5	120.5	120.5
Consumer Price Index for 1994		148.2	148.2	148.2	148.2
Consumer Price Index for September 2013		234.15	234.15	234.15	234.15
Hourly Capacity (tph)		40.0	40.0	40.0	40.0
Annual Production (tpy)		350,400	350,400	350,400	350,400
CO Emission Factor (lbs/ton)		6.00	6.00	6.00	6.00
DIRECT COSTS FOR EQUIPMENT AND INSTALLATION					
Purchased Equipment Costs					
Equipment Cost (Adjusted USEPA 1988 Incinerator Cost) & RTO Quote		$733,744	$1,174,307	$1,575,202	$1,575,202
Subtotal	(A)	$733,744	$1,174,307	$1,575,202	$1,575,202
Instrumentation	(0.10A)				
Sales Tax (Not applicable in Wisconsin)					
Freight	(0.05A)				
Subtotal	(0.15A)	$110,062	$176,146	$236,280	$236,280
Purchased Equipment Costs	(1.15A=B)	$843,805	$1,350,454	$1,811,482	$1,811,482
Direct Installation Costs					
Foundation & Supports	(0.08B)				
Handling & Erection	(0.14B)				
Electrical	(0.04B)				
Piping	(0.02B)				
Insulation for Ductwork	(0.01B)				
Painting	(0.01B)				
Subtotal	(0.30B)	$253,142	$405,136	$543,445	$543,445
Site Preparation		$0	$0	$0	$0
Buildings		$0	$0	$0	$0
INDIRECT COSTS FOR EQUIPMENT AND INSTALLATION					
Engineering	(0.10B)				
Construction & Field Expenses	(0.05B)				
Contractor Fees	(0.10B)				
Start-up	(0.02B)				
Performance Tests	(0.01B)				
Contingencies	(0.03B)				
TOTAL INDIRECT COSTS	(0.31B)	$261,580	$418,641	$561,559	$561,559
TOTAL CAPITAL INVESTMENT, TCI	(1.61B)	$1,358,526	$2,174,230	$2,916,486	$2,916,486
DIRECT OPERATING COSTS					
Operating Labor					
Operator (0.5 hrs/shift)(shifts/yr)($/hr)		$27,375	$27,375	$27,375	$27,375
Supervisor (15% x operating labor)		$4,106	$4,106	$4,106	$4,106
Maintenance Labor and Materials					
Labor (0.5 hrs/shift x shifts/yr x $/hr)		$27,375	$27,375	$27,375	$27,375
Material (Same as labor)		$27,375	$27,375	$27,375	$27,375
Subtotal (Direct Cost O & M)		$86,231	$86,231	$86,231	$86,231
Utilities					
Fuel [(1.1)(Flow Rate)(Heat Capacity)					
x (T outlet - T inlet)					
- Process Flue Gas VOC Energy Contribution]					
x (60 min/hr)(operating hours/yr)					
x (Therm/100,000BTU)(Fuel Cost)		$3,669,870	$455,221	$1,189,998	$4,404,647
Fuel usage (cf6/yr) =		408	51	132	489
Electricity for Incinerator = (1.17xE-04)(Flow Rate)(Delta P)					
x (hrs/yr)(Electrical Cost)					
/ (Fan-Motor Efficiency)		$207,782	$207,782	$229,654	$65,615
Electrical usage (mw-hrs/yr) =		2,968	2,968	3,281	937
TOTAL DIRECT OPERATING COSTS		$3,963,883	$749,234	$1,505,883	$4,556,493
INDIRECT OPERATING COSTS INCLUDING TCI					
Overhead (60% x Direct Cost O & M)		$51,739	$51,739	$51,739	$51,739
Adminstrative (2% x TCI)		$27,171	$43,485	$58,330	$58,330
Insurance (1% x TCI)		$13,585	$21,742	$29,165	$29,165
Capital Recovery (Recovery Factor x TCI)		$221,032	$353,747	$474,512	$474,512
TOTAL INDIRECT OPERATING COSTS INCLUDING TCI		$313,527	$470,713	$613,746	$613,746
Total Annualized Cost for Incineration		$4,277,410	$1,219,947	$2,119,629	$5,170,239
Total Annualized Cost for Baghouse		$1,922,713	$1,922,713	$1,922,713	$1,922,713
Total Annualized Cost for Incineration and Baghouse		**$6,200,123**	**$3,142,660**	**$4,042,341**	**$7,092,952**
Carbon Monoxide Capture Efficiency (%)		97.6	97.6	97.6	97.6
Carbon Monoxide Destruction Efficiency (%)		90.0	90.0	90.0	90.0
Carbon Monoxide Combined Capture and Destruction Efficiency (%)		87.8	87.8	87.8	87.8
Process Production Rate (tph)		40.0	40.0	40.0	40.0
CO Emission Factor (lbs/ton)		6.0	6.0	6.0	6.0
Uncontrolled Carbon Monoxide Emissions (lbs/hr)		240.0	240.0	240.0	240.0
Uncontrolled Carbon Monoxide Emissions (TPY)		1051.2	1051.2	1051.2	1051.2
Uncontrolled Carbon Monoxide Emissions (ppm)		601	601	601	601
Controlled Emissions (lbs/hr)		29.2	29.2	29.2	29.2
Controlled Emissions (TPY)		127.8	127.8	127.8	127.8
Emissions Removed (TPY)		923.4	923.4	923.4	923.4
Estimated Cost Effectiveness ($/ton of CO Removed)		**$6,715**	**$3,403**	**$4,378**	**$7,682**
VOC Capture Efficiency (%)		97.6	97.6	97.6	97.6
VOC Destruction Efficiency (%)		99.0	99.0	99.0	99.0
VOC Combined Capture and Destruction Efficiency (%)		96.6	96.6	96.6	96.6
Process Production Rate (tph)		40.0	40.0	40.0	40.0
VOC Emission Factor (lbs/ton)		1.40	1.40	1.40	1.40
Uncontrolled VOC Emissions (lbs/hr)		56.0	56.0	56.0	56.0
Uncontrolled VOC Emissions (TPY)		245.3	245.3	245.3	245.3
Uncontrolled VOC Emissions (ppm)		46	46	46	46
Controlled VOC Emissions (lbs/hr)		1.89	1.89	1.89	1.89
Controlled VOC Emissions (TPY)		8.3	8.3	8.3	8.3
Emissions Removed (TPY)		237.0	237.0	237.0	237.0
Estimated Cost Effectiveness ($/ton of VOC Removed)		**$26,161**	**$13,260**	**$17,056**	**$29,928**

REFERENCES:

U.S. Environmental Protection Agency, OAQPS Control Cost Manual, Chapter 3, Research Triangle Park, NC, December 1995.

W. Vatavuk, Estimating Costs of Air Pollution Control, Lewis Publishers, Chelsea, MI, 1990.

Capture and destruction efficiencies taken from discussions with vendors documented in 8/17/92 and 9/25/92 letters to Wis. Dept. of Natural Resources on WF Plant 1 expansion project.

Consumer Price Index
ftp://ftp.bls.gov/pub/special.requests/cpi/cpiai.txt

Current energy and labor costs from Waupaca, Inc.
Natural Gas Cost ($ per therm) 2007
2008
2009
2010
Average

Regenerative incinerator equipment cost based on October 10, 2012 Megtec proposal to Wingra Engineering, S.C.

Proposal Cost ($)	Proposed Flow (acfm)	New Project Flow (acfm)	New Project Cost ($)
$714,100	39,919	91,457	$1,174,307

This spreadsheet was developed by Wingra Engineering, S.C.and verified by IDEM.

Company Name: Waupaca Foundry, Inc. - Plant 5
Source Address: 9856 State Highway 66, Tell City, Indiana 47586
Significant Source Modification No.: 123-33464-00019
Significant Permit Modification No. : 123-33469-00019
Reviewer: Sarah Street and Mehul Sura

BAGHOUSE COST ESTIMATE	**Stack**	**S01**
	Process	**Line 4**
	Description	**P/MC/S**
Basis for Flow Rate		P16 & P17
Basis for Emissions		P16 & P17
ASSUMPTIONS		
Flow Rate (acfm)		97,000
Pressure Drop (inches wc)		7.0
Operating hours per year		8,760
Operating Shifts per Year		1095
Operating Labor Cost ($ per hour)		$50.00
Maintenance Labor Cost ($ per hour)		$50.00
Electrical Cost ($/kw-hr)		$0.070
Compressed Air Cost ($ per 1000 scf)		0.25
Inlet PM Loading (gr/acf)		4.00
Outlet PM Loading (gr/acf)		0.005
Waste Generation (tpy)		14,548
Waste Disposal Cost ($ per ton)		$40.00
Equipment Life (years)		20.00
Interest Rate (%)		7
Capital Recovery Factor (CRF)		0.09439
DIRECT COSTS FOR EQUIPMENT AND INSTALLATION		
Purchased equipment costs		
Fabric filter (with insulation)(EC)		
Bags and cages		
Auxiliary equipment		
Sum = A	A	2,328,000
Instrumentation, 0.1A	0.1A	232,800
Sales taxes, 0.03A	0.03A	69,840
Freight, 0.05A	0.05A	116,400
Purchased equipment cost, B	B	2,747,040
Direct installation costs		
Foundation and supports, 0.04B	0.04B	109,882
Handling and erection, 0.50B	0.50B	1,373,520
Electrical, 0.08B	0.08B	219,763
Piping, 0.01B	0.01B	27,470
Insulation for ductwork, 0.07B	0.07B	192,293
Painting, 0.04B	0.04B	109,882
Direct installation cost		2,032,810
Site preparation -		
Facilities and buildings -		
Total Direct Cost		$4,779,850
INDIRECT COSTS FOR EQUIPMENT AND INSTALLATION		
Engineering, 0.10B	0.10B	274704
Construction and field expenses, 0.20B	0.20B	549408
Contractor fees, 0.10B	0.10B	274704
Start-up, 0.01B	0.01B	27470
Performance test, 0.01B	0.01B	27470
Contingencies, 0.03B	0.03B	82411
Total Indirect Cost		1236168
TOTAL CAPITAL INVESTMENT, TCI		**$6,016,018**
DIRECT OPERATING COSTS		
Operating Labor		
Operator (2 hrs/shift)(shifts/yr)($/hr)		$109,500
Supervisor (15% x operating labor)		$16,425
Maintenance Labor and Materials		
Labor (1 hrs/shift x shifts/yr x $/hr)		$54,750
Material (Same as labor)		$54,750
Replacement parts, bags (Use material)		$54,750
Utilities		
Electricity for fan		$75,362
Compressed air at 2 scfm per 1000 acfm		$25,492
Waste Disposal		$581,937
Total Direct Annual Costs ($ per year)		$972,965
INDIRECT OPERATING COSTS INCLUDING TCI		
Overhead (60% x Direct Cost O & M)		$141,255
Adminstrative (2% x TCI)		$120,320
Property Tax (1% x TCI)		$60,160
Insurance (1% x TCI)		$60,160
Capital Recovery (Recovery Factor x TCI)		$567,852
Total Indirect Annual Costs ($ per year)		$949,748
Total Annualized Cost for Baghouse ($ per year)		$1,922,713

REFERENCES:

U.S. Environmental Protection Agency, OAQPS Control Cost Manual,
Chapter 6, Research Triangle Park, NC, December 1995.

W. Vatavuk, Estimating Costs of Air Pollution Control,
Lewis Publishers, Chelsea, MI, 1990.

Equipment cost for baghouse based on $24 per acfm for a complex installation.
Based on estimate from Industrial Ventilation Inc. on October 10, 2012.

This spreadsheet was developed by Wingra Engineering, S.C.

Indiana Department of Environmental Management
Office of Air Quality

Appendix D
Air Quality Analysis

Source Description and Location

Source Name:	**Waupaca Foundry, Inc Plant 5**
Source Location:	**9856 State Highway 66, Tell City Indiana 47586**
County:	**Perry**
SIC Code:	**3321 (Gray and Ductile Iron Foundries)**
PSD/Significant Source Modification No.:	**123-33464-00019**
Significant Permit Modification No.:	**123-33469-00019**
Air Modeler:	**Steve Sherman**

Proposed Project

Waupaca Foundry, (Waupaca) proposes to modify one of their lines at their foundry located in Tell City, Perry County, Indiana.

Wingra Engineering submitted the Prevention of Significant Deterioration (PSD) permit application on behalf of Waupaca in July 2013.

This technical support document provides the air quality analysis review of Waupaca's impact performed by the Indiana Department of Environmental Management (IDEM).

Analysis Summary

Based on the potential emissions after controls, a PSD air quality analysis was triggered for CO. The significant impact analysis for CO determined that modeling concentrations did not exceed the significant impact levels.

A secondary ozone formation analysis was conducted and showed no significant impact.

Air Quality Impact Objectives

The purpose of the air quality impact analysis in the permit application is to accomplish the following objectives. Each objective is individually addressed in each section outlined below.

A. Establish which pollutants require an air quality analysis based on PSD significant emission rates,

B. Provide analyses of actual stack heights with respect to Good Engineering Practice (GEP), the meteorological data used, a description of the model used in the analysis, and the receptor grid utilized for the analyses,

C. Determine the significant impact level, the area impacted by the source's emissions, and background air quality levels,

D. Perform a qualitative analysis of the source's impact on general growth, soils, vegetation, and visibility in the impact area with emphasis on any Class I areas. The nearest Class I area is Kentucky's Mammoth Cave National Park, and

E. Analysis of Secondary Ozone formation

F. Summarize the Air Quality Analysis.

Section A - Pollutants Analyzed for Air Quality Impact

Applicability

The PSD requirements, 326 IAC 2-2, apply in attainment and unclassifiable areas and require an air quality impact analysis of each regulated pollutant emitted in significant amounts by a major stationary source or modification.

Significant emission levels for each pollutant are defined in 326 IAC 2-2-1 and in the Code of Federal Regulations (CFR) 52.21(b) (23) (i).

Proposed Project Emissions

PM_{10}, $PM_{2.5,}$ NO_x, SO_2, CO, beryllium, lead and VOCs are the pollutants that will be emitted from Waupaca, which are summarized below in Table 1. CO potential emissions after controls exceed the PSD significant emission rates (SERs) and therefore require an air quality analysis.

TABLE 1
Facility Emission Rates

POLLUTANT	SOURCE EMISSION RATE (Facility totals in tons/year)	EMISSION RATE THRESHOLD (tons/year)	PRELIMINARY AQ ANALYSIS REQUIRED
PM_{10}	0.23	15	No
$PM_{2.5}$	0.23	10	No
NO_x	0.57	40	No
SO_2	1.13	40	No
CO	341.6	100	Yes
VOCs[1]	79.7	40	Yes
Be	0.0000045	0.0004	No
Lead	0.000225	0.6	No

[1] VOC emissions are only included in a secondary pollutant analysis if NO_x or VOC emissions > 40 TPY.

NO_x and SO_2 emissions are less than the SERs, so no analysis is required for the formation of secondary PM2.5.

Section B – Good Engineering Practice (GEP), Met Data, Model Used, Receptor Grid and Terrain

Stack Height Compliance with Good Engineering Practice (GEP)

Stacks should comply with GEP requirements established in 326 IAC 1-7-4. If stacks are lower than GEP, excessive ambient concentrations due to aerodynamic downwash may occur.

Dispersion modeling credit for stacks taller than 65 meters (213 feet) is limited to GEP for the purpose of establishing emission limitations.

The GEP stack height takes into account the distance and dimensions of nearby structures,

which affects the downwind wake of the stack. The downwind wake is considered to extend five times the lesser of the structure's height or width.

A GEP stack height is determined for each nearby structure by the following formula:

$$Hg = H + 1.5L$$

Where: Hg is the GEP stack height
H is the structure height
L is the structure's lesser dimension (height or width)

Meteorological Data

The National Weather Service (NWS) 1-minute Automated Surface Observation Station (ASOS) meteorological data used in the air quality analysis consisted of 2008 through 2012 surface data from Evansville, Indiana and upper air measurements taken at Lincoln, Illinois.

The meteorological data was preprocessed using the latest versions of AERMINUTE, AERSURFACE, and AERMET.

Model Description

The Office of Air Quality (OAQ) used AERMOD version 12345 in the air quality analysis review to determine maximum off-property concentrations or impacts for each pollutant.

All regulatory default options were utilized in the U.S. EPA approved model, as listed in the 40 Code of Federal Regulations Part 51, Appendix W “Guideline on Air Quality Models”.

Receptor Grid

OAQ modeling used the same receptor grids generated by the consultant. The receptor grid is outlined below:

- 25 meter spacing from a central point out to 700 meters,
- 100 meters spacing from 700 meters to 2000 meters,
- 500 meters spacing from 2000 meters to 10000 meters.

Treatment of Terrain

Receptor terrain elevation inputs were interpolated from NED (National Elevation Dataset) data obtained from the USGS. NED terrain data was preprocessed using AERMAP.

Section C - Significant Impact Level/Area and Background Air Quality Levels

A significant impact analysis was conducted to determine if the source would exceed the PSD significant impact level (SIL) concentrations. If the source's concentrations exceed these SILs, further air quality analysis is required.

Refined modeling for CO was not required because the results did not exceed significant impact levels.

Significant impact levels are defined by the following time periods in Table 2 below, with all maximum-modeled concentrations from the worst case operating scenarios.

TABLE 2
Significant Impact Analysis[2]

POLLUTANT	TIME AVERAGING PERIOD	MAXIMUM MODELED IMPACTS (µg/m^3)	SIGNIFICANT IMPACT LEVEL (µg/m^3)	REFINED AQ ANALYSIS REQUIRED
CO	1-hour[1]	376.2	2000	No
CO	8-hour[1]	47.5	500	No

[1] First highest values per EPA NSR manual October 1990.

[2] Impacts are from Waupaca only.

Pre-construction Monitoring Analysis

The PSD rule, 326 IAC 2-2-4, requires an air quality analysis of the new source or the major modification to determine if the pre-construction monitoring threshold is triggered. In most cases, monitoring data taken from a similar geographic location can satisfy this requirement if the pre-construction monitoring threshold has been exceeded. Also, post construction monitoring could be required if the air quality in that area could be adversely impacted by applicant's emissions.

Modeling Results

The modeling results were compared to the PSD preconstruction monitoring thresholds. The results are shown in the table below.

TABLE 3
Preconstruction Monitoring Analysis

POLLUTANT	TIME AVERAGING PERIOD	MAXIMUM MODELED IMPACTS (µg/m^3)	DEMINIMIS LEVEL (µg/m^3)	ABOVE DE MINIMIS LEVEL
CO	8-hour	47.5	575	No

[1] First highest values per EPA NSR manual October 1990. Maximum modeled impacts are from Waupaca only.

Part D – Qualitative Analysis

Additional Impact Analysis

All PSD permit applicants must prepare an additional impact analysis for each pollutant subject to regulation under the Act. This analysis assesses the impacts on growth, soils and vegetation, endangered species, and visibility caused by any increase in emissions of any regulated pollutant from the source.

The Waupaca modeling submittal provided an additional impact analysis performed by the consultant.

Economic Growth

The purpose of the growth analysis is to quantify project associated growth and estimate the air quality impacts from this growth either quantitatively or qualitatively.

This project is not expected to require more than a few additional employees. Since the area is predominately rural, growth is not expected to cause a violation of the NAAQS or the PSD increment.

Soils and Vegetation Analysis

Soil types include a variety of loess over shale soils. Due to the agricultural nature of the land, crops in the Perry County area consist mainly of corn and soybeans (2007 Agricultural Census for Perry County).

The maximum modeled concentrations for Waupaca are well below the threshold limits necessary to have adverse impacts on the surrounding vegetation.

Livestock in Perry County consist mainly of hogs, cattle, and dairy (2007 Agricultural Census for Perry County) and will not be adversely impacted from the facility.

Trees in the area are mainly hardwoods. These are hardy trees and no significant adverse impacts are expected due to modeled concentrations.

Federal and State Endangered Species Analysis

Federal and state endangered species are listed by the U.S. Fish and Wildlife Service; Division of Endangered Species for Indiana.

For Perry County, this includes 4 birds, 1 amphibian, 2 fishes, 2 insects, 2 mammals, 15 plants, 2 mollusks, and 1 reptile which have a habitat within the county. The facility is not expected to have any additional adverse effects on the habitats of the species than what has already occurred from the industrial, farming, and residential activities in the area.

Visibility Analysis

A visibility analysis was performed for impacts on local visibility. The VISCREEN model is designed as a screening model to determine the visual impact using parameters from a single source's plume. It is used basically to determine whether or not a plume is visible as an object itself. The visibility impairment analysis considers the impacts that occur within the impact area of the source as defined by the user distances. The user distances are determined by the nearest interstate or airport. EPA has defined these locations in guidance to the state.

The PM_{10}, $SO_{2,}$ and NO_x emissions limits were used to run a local visibility Level 1 analysis. VISCREEN Version 1.01 was used to determine if the color difference parameter (Delta-E) or the plume (green) contrast limits were exceeded. The Delta-E was developed to specify the perceived magnitude of color and brightness changes and is used as the primary basis for determining the perceptibility of plume visual impacts. The plume constant can be defined at any wavelength as the relative difference in the intensity (called spectral radiance) between the viewed object and its background. This is used to determine how the human eye responds differently to different wavelengths of light. The Delta-E of 2.0 and the plume contrast of 0.05 were not exceeded at the nearest airport.

TABLE 4
Level 1 Local Visibility Analysis

Background	Theta (degrees)	Azimuth (degrees)	Distance (km)	Alpha (degrees)	Delta E Critical	Delta E Plume	Contrast Critical	Contrast Plume
Sky	10	1	33.7	168	2.00	0.003	0.05	0.000
Sky	140	1	33.7	168	2.00	0.003	0.05	0.000
Terrain	10	1	33.9	168	2.00	0.001	0.05	0.000
Terrain	140	1	33.9	168	2.00	0.001	0.05	0.000

* This Class II location is above suggested critical value for Class I areas

Thus, it is concluded that there will be no visibility impacts at the closest location from the facility.

The Federal Class I areas include national parks and national wilderness areas and are considered environments for which minimal air quality degradation is allowed. The nearest Class 1 area to Waupaca is Mammoth Cave National Park which is at least 92 km from the plant. Pursuant to a new federal guidance document (Federal Land Managers' Air Quality Related Values Work Group (FLAG) Phase 1 Report – Revised November 2010), the Waupaca facility would not be required to conduct a Class 1 area analysis since the combined emissions of visibility impairing pollutants are less than the screening threshold.

The visual impact is equal to Q / D, the total emissions divided by distance, for sources more than 50 km from a Class 1 area. If the number is less than 10, then a visibility analysis is not required.

The primary visibility impairment pollutants are PM_{10}, SO_2, H_2SO_4, and NO_x.

The proposed potential emissions of these pollutants from Waupaca are
Q = 0.2 + 1.1 + 0 + 0.6 TPY = 1.9 TPY.

The distance to the nearest Class 1 area is D = 92 km.

The source impact is Q / D = 1.9 / 92 = 0.02.

Since 0.02 is less than 10, this project will not affect visibility in the nearest Class 1 area.

Additional Analysis Conclusions

Finally, the results of the additional impact analysis conclude the operation of the facility will have no significant impact on economic growth, soils, vegetation, or visibility in the immediate vicinity or on any Class I area.

Part E - Secondary Ozone Formation Analysis

Because of the well established relationship between nitrogen oxides (NO_x), volatile organic compounds (VOCs), and the regional transport formation of ozone, U.S. EPA developed the Cross State Air Pollution Rule (CSAPR) to assist states to meet the ozone NAAQS. This rule included extensive modeling to support the emissions reductions necessary in each state to achieve the ozone NAAQS in the eastern U.S. The source category responsible for these reductions is Electric Generating Units (EGUs). While the U.S. Court of Appeals for the D.C. Circuit issued a decision vacating CSAPR on August 21, 2012, the modeling analysis conducted by U.S. EPA is considered valid and will be used for this ozone analysis.

U.S. EPA used a regional model, Comprehensive Air Quality Model with extensions (CAMx), and

the Air Quality Assessment Tool (AQAT) to determine levels of emissions reduction from EGUs necessary to achieve the NAAQS at every site. The documentation includes extensive tables showing impacts at all ozone monitors in the eastern U.S. and emission reduction levels necessary to achieve those results. To examine the possible impact of Waupaca results from the modeling U.S. EPA conducted to establish the 2012 and 2014 base case emissions in CSAPR were used for this analysis. The CSAPR website is located at http://www.epa.gov/crossstaterule/techinfo.html.

Information regarding the NO_x emissions modeled for CSAPR can be found in the "EmissionsSummaries.xlsx" spreadsheet under the Emissions Inventory Final Rule TSD section at EPA's CSAPR website for technical information http://www.epa.gov/crossstaterule/techinfo.html.

The spreadsheet shows the base case annual NO_x emissions for Indiana in 2012 at 455,325 tons and base case annual NO_x emissions by 2014 at 431,342 tons. Indiana's total NO_x emission reduction between these scenarios totals 23,983 tons. All surrounding states make similar significant reductions.

Waupaca's proposed emissions would be 0.6 tons per year of NO_x and 79.7 tons per year of VOCs for a total of 80.3 tons per year of NO_x and VOCs from Waupaca.

8-Hour Ozone Modeling Results

The nearest ozone monitor to Waupaca is the Leopold ozone monitor in Perry County. The current design value for 2010-2012 at the Leopold monitor is 75 parts per billion (ppb), below the 8-hour ozone NAAQS. The U.S. EPA CSAPR modeling results show the maximum modeled 8-hour ozone concentration for Perry County is 75.1 ppb for the 2012 base case and 73.1 ppb for the 2014 base case. This is a decrease of 2.0 ppb as a result of NO_x emission adjustments between 2012 and 2014 base case emission calculations, based on emission growth factors. In order for this modeled 8-hour ozone concentration reduction to occur, Indiana's 2014 NO_x emissions were reduced from the 2012 base case emissions by 23,983 tons. The Perry County monitoring site is not necessarily impacted by every EGU in Indiana, but in the surrounding states, thousands of tons of annual NO_x emission reductions are projected to occur by 2014, many of which would impact this site. Therefore, to estimate the impact of Waupaca on modeled concentrations, the ratio of Waupaca's NO_x and VOC emissions to Indiana's 2012 to 2014 base case NO_x emission reduction was calculated. This ratio was then compared to the modeled ozone impact from the difference between the CSAPR 2012 and 2014 base case modeling results.

(1) **80.3 tons** Waupaca's NO_x and VOC emissions / **23,983 tons** of Indiana's NO_x base case emissions reduced from 2012 to 2014 = **0.335%** ratio of Waupaca's NO_x and VOC emissions compared to Indiana's NO_x emissions

(2) **0.335%** Waupaca's emission ratio *** 2.0 ppb** maximum 8-hour 2012 to 2014 Base Case modeled results on Perry County monitor = **0.007 ppb** of Waupaca's 8-hour ozone impact

(3) **0.007 ppb** of Waupaca's 8-hour ozone impact / **73.1 ppb** at the Perry County ozone monitor from 2014 base case maximum modeled results = **0.0092%** Waupaca's impact on the 2014 base case modeled concentration.

Tables are located in CSAPR_AQModeling.pdf, Appendix B, pages B-10 and B-12, for 8-hour

ozone design values that show the base case 2012 ozone concentrations at surrounding monitoring sites versus projected base case 2014 ozone concentrations. 2012 Base Case represents modeled results taken from the 2012 and 2014 Base Case emissions, represents the 2014 Base emissions with emission adjustments from growth factors factored into the modeling. Table 5 below shows the CSAPR modeling results for the Perry, Warrick and Floyd County ozone monitors and the potential impact from Waupaca on those ozone monitors.

Table 5
EPA's Cross-State Air Pollution Rule - 8-Hour Ozone Modeling Results

Monitor ID	Site	2012 Base (ppb)	2014 Base (ppb)	2012-2014 Base (ppb)	Anticipated Source Impact (ppb)	Source Impact on 2014 Base Results (%)
181230009	Leopold	75.1	73.1	2.0	0.007	0.0092%
181730008	Boonville	73.4	71.6	1.8	0.006	0.0084%
181730009	Lynnville	67.4	65.7	1.7	0.006	0.0087%
181730011	Dayville	70.8	69.0	1.8	0.006	0.0087%
180431004	New Albany	71.6	69.9	1.7	0.006	0.0081%

Summary of Ozone Results

Waupaca's NO_x and VOC emissions were compared with the U.S. EPA CSAPR modeling for 8-hour ozone to determine what impacts may occur as a result of ozone formation. Waupaca's emissions were compared with the amount of NO_x emission reductions realized from emission estimates associated with base case emissions for CSAPR. When these results were compared with CSAPR modeling results for 8-hour ozone, the impacts from Waupaca on the Leopold ozone monitor in Perry County and surrounding ozone monitors in southern Indiana are anticipated to be minimal and not have a significant impact on the attainment status of Perry County and any surrounding counties.

Part F - Summary of Air Quality Analysis

Perry County is designated as attainment for all criteria pollutants.

Only CO emission rates associated with the proposed facility exceeded the respective significant emission rates. Modeling results taken from AERMOD model showed that CO impacts were less than significance levels.

Emission rate thresholds secondary $PM_{2.5}$ formation were not exceeded.

A secondary analysis for ozone showed minimal impact.

The nearest Class I area is Mammoth Cave National Park in Kentucky 92 kilometers away from the source and will not be affected by the project.

The operation of the proposed facility will have no significant impact on air quality.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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Michael R. Pence
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TO: Bryant Esch
Waupaca Foundry
PO Box 249
Waupaca, WI 54981

DATE: March 12, 2014

FROM: Matt Stuckey, Branch Chief
Permits Branch
Office of Air Quality

SUBJECT: Final Decision
Title V – Significant Permit Modification
123-33469-00019

Enclosed is the final decision and supporting materials for the air permit application referenced above. Please note that this packet contains the original, signed, permit documents.

The final decision is being sent to you because our records indicate that you are the contact person for this application. However, if you are not the appropriate person within your company to receive this document, please forward it to the correct person.

A copy of the final decision and supporting materials has also been sent via standard mail to:
Bruce Tesch, Plant Manager / Waupaca Foundry
Steven Klafka / Wingra Engineering
OAQ Permits Branch Interested Parties List

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178, or toll-free at 1-800-451-6027 (ext. 3-0178), and ask to speak to the permit reviewer who prepared the permit. If you think you have received this document in error, please contact Joanne Smiddie-Brush of my staff at 1-800-451-6027 (ext 3-0185), or via e-mail at jbrush@idem.IN.gov.

Mail Code 61-53

IDEM Staff	AWELLS 3/12/2014 Waupaca Foundry Inc 123-33469-00019 Final		AFFIX STAMP HERE IF USED AS CERTIFICATE OF MAILING
Name and address of Sender	▶	Indiana Department of Environmental Management Office of Air Quality – Permits Branch 100 N. Senate Indianapolis, IN 46204	Type of Mail: **CERTIFICATE OF MAILING ONLY**

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1		Bryant Esch Waupaca Foundry Inc PO Box 249 Waupaca WI 54981 (Source CAATS) confirmed delivery									
2		Bruce Tesch Plant Mgr Waupaca Foundry Inc 9856 St Hwy 66 Tell City IN 47586 *(RO CAATS)*									
3		Perry County Health Department Courthouse Annex Cannelton IN 47520-1251 *(Health Department)*									
4		Mr. Ron Hendrich Schwab Corporation 4630 E St Rd 66 Cannelton IN 47520 *(Affected Party)*									
5		Mr. Bobby Carson P.O. Box 7 Mammoth Cave KY 42259 *(Affected Party)*									
6		Mrs. Tina M. Kunkler-Laake News Publishing Company 537 Main Street PO Box 309 Tell City IN 47586 *(Affected Party)*									
7		Tell City - City Council and Mayors Office PO Box 515 Tell City IN 47586 *(Local Official)*									
8		Perry County Commissioners Court House, 2219 Payne Street Tell City IN 47586 *(Local Official)*									
9		Mr. Mark Wilson Evansville Courier & Press P.O. Box 268 Evansville IN 47702-0268 *(Affected Party)*									
10		John Blair 800 Adams Ave Evansville IN 47713 *(Affected Party)*									
11		Steven Klafka Wingra Engineering, S.C. 303 South Paterson Street Madison WI 53703 *(Consultant)*									
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