INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
*We Protect Hoosiers and Our Environment.*
100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

**Michael R. Pence**
*Governor*

**Thomas W. Easterly**
*Commissioner*

## NOTICE OF 30-DAY PERIOD FOR PUBLIC COMMENT

Preliminary Findings Regarding a
Signficant Modification to a
Part 70 Operating Permit

for Waupaca Foundry, Inc. Plant 5 in Perry County

Significant Source Modification No.: 123-35760-00019
Significant Permit Modification No.: 123-35799-00019

The Indiana Department of Environmental Management (IDEM) has received an application from Waupaca Foundry, Inc. Plant 5, located at 9856 State Highway 66, Tell City, Indiana 47586, for a significant modification of its Part 70 Operating Permit issued on July 17, 2014. If approved by IDEM's Office of Air Quality (OAQ), this proposed modification would allow Waupaca Foundry, Inc. Plant 5 to make certain changes at its existing source. Waupaca Foundry, Inc. Plant 5 has applied to install and operate a new sand reclamation system (P27).

The applicant intends to construct and operate new equipment that will emit air pollutants; therefore, the permit contains new or different permit conditions. In addition, some conditions from previously issued permits/approvals have been corrected, changed, or removed. These corrections, changes, and removals may include Title I changes (e.g. changes that add or modify synthetic minor emission limits). IDEM has reviewed this application and has developed preliminary findings, consisting of a draft permit and several supporting documents, which would allow the applicant to make this change.

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

Perry County Public Libraray
2328 Tell Street
Tell City, IN 47586

and

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

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

**How can you participate in this process?**

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

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

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

Comments and supporting documentation, or a request for a public hearing should be sent in writing to IDEM at the address below. If you comment via e-mail, please include your full U.S. mailing address so that you can be added to IDEM's mailing list to receive notice of future action related to this permit. If you do not want to comment at this time, but would like to receive notice of future action related to this permit application, please contact IDEM at the address below. Please refer to permit number SSM 123-35760-00019 and **SPM 123-35799-00019** in all correspondence.

**Comments should be sent to:**

Mehul Sura
IDEM, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251
(800) 451-6027, ask for extension 3-6868
Or dial directly: (317) 233-6868
Fax: (317) 232-6749 attn: Mehul Sura
E-mail: msura@idem.IN.gov

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

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

**What will happen after IDEM makes a decision?**

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

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

Iryn Calilung, Section Chief
Permits Branch
Office of Air Quality

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*Commissioner*

**DRAFT**

Bryant Esch
Waupaca Foundry, Inc.
PO Box 249
Waupaca, IN 54981

Re: 123-35799-00019
Significant Permit Modification to
Part 70 Renewal No.: T123-33768-00019

Dear Mr. Esch

Waupaca Foundry, Inc. Plant 5 was issued Part 70 Operating Permit Renewal No. T123-33768-00019 on July 17, 2014 for a stationary gray and ductile iron foundry located at 9856 State Highway 66, Tell City, Indiana 47586. An application to modify the source was received on April 27, 2015. 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.

Please find attached the entire Part 70 Operating Permit as modified, including the following new attachment:

Attachment D: NSPS Subpart UUU (New Source Performance Standard for Calciners and Dryers in Mineral Industries Requirements)

The permit references the below listed attachments. Since these attachments have been provided in previously issued approvals for this source, IDEM OAQ has not included copies of these attachments with this modification:

Attachment A: Fugitive Dust Control Plan
Attachment B: NESHAP Subpart EEEEE (National Emission Standard for Hazardous Air Pollutants for Iron and Steel Foundries)
Attachment C: NESHAP Subpart ZZZZ (National Emission Standard for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines)

Previously issued approvals for this source containing these attachments are available on the Internet at: http://www.in.gov/ai/appfiles/idem-caats/.

Federal rules under Title 40 of United States Code of Federal Regulations may also be found on the U.S. Government Printing Office's Electronic Code of Federal Regulations (eCFR) website, located on the Internet at: http://www.ecfr.gov/cgi-bin/text-idx?tpl=/ecfrbrowse/Title40/40tab_02.tpl.

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 Permit Guide on the Internet at: http://www.in.gov/idem/5881.htm; and the Citizens' Guide to IDEM on the Internet at: http://www.in.gov/idem/6900.htm.

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, OAQ, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana, 46204-2251 at (317) 233-6868 or 1-800-451-6027, and ask for extension 3-6868.

Sincerely,

Iryn Calilung, Section Chief
Permits Branch
Office of Air Quality

Attachments: Modified Permit and Technical Support Document

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

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**DRAFT**

# 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.: T123-33768-00019 | |
|---|---|
| Issued by: Original Signed<br><br>Iryn Calilung, Section Chief<br>Permits Branch<br>Office of Air Quality | <br><br>Issuance Date:July 17, 2014<br><br>Expiration Date: July 17, 2019 |

| First Significant Modification No.: 123-35799-00019 | |
|---|---|
| Issued by:<br><br><br>Iryn Calilung, Section Chief<br>Permits Branch<br>Office of Air Quality | <br><br>Issuance Date:<br><br>Expiration Date: July 17, 2019 |

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Attachment A: Fugitive Dust Control Plan
Attachment B: NESHAP Subpart EEEEE (National Emission Standard for Hazardous Air Pollutants for Iron and Steel Foundries)
Attachment C: NESHAP Subpart ZZZZ (National Emission Standard for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines)
Attachment D: NSPS Subpart UUU (New Source Performance Standard for Calciners and Dryers in Mineral Industries Requirements)

## SECTION A SOURCE SUMMARY

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

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

The Permittee owns and operates a stationary 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 (Gray and Ductile Iron Foundries) |
| County Location: | Perry |
| Source Location Status: | Attainment for all criteria pollutants |
| Source Status: | Part 70 Operating Permit Program<br>Major Source, under PSD Rules<br>With GHG Emissions greater than one hundred thousand (>100,000) tons of $CO_2$ equivalent ($CO_2e$) emissions per year<br>Major Source, Section 112 of the Clean Air Act<br>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(14)]

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

Phase I

Phase I Metal Melting

(a) One (1) Phase I gray iron cupola, identified as P30, constructed in 1996 and modified in 2011, 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;

Under 40 CFR 63, Subpart EEEEE (NESHAP for Iron and Steel Foundries) the Phase I gray iron cupola is an affected facility.

Phase I Casting & Finishing

(b) Four (4) Phase I production lines, consisting of the following:

(1) Line 1 (constructed in 1996, modified in 1998, modified in 2007, and modified in 2011)

(A) One (1) Line 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) Line 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) Line 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;

Under 40 CFR 63, Subpart EEEEE (NESHAP for Iron and Steel Foundries) the Phase I Line 1 pouring/mold cooling, shakeout, and cast cooling operations are affected facilities.

The shakeout and cast cooling operations do not have specific applicable requirements under this NESHAP for existing affected facilities.

(D) One (1) Line 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) Line 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 (constructed in 1996, and modified in 2011)

(A) One (1) Line 2 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) Line 2 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) Line 2 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;

Under 40 CFR 63, Subpart EEEEE (NESHAP for Iron and Steel Foundries) the Phase I Line 2 pouring/mold cooling, shakeout, and cast cooling operations are affected facilities.

The shakeout and cast cooling operations do not have specific applicable requirements under this NESHAP for existing affected facilities.

(D) One (1) Line 2 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) Line 2 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 (constructed in 1996, and modified in 2011)

(A) One (1) Line 3 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) Line 3 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) Line 3 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;

Under 40 CFR 63, Subpart EEEEE (NESHAP for Iron and Steel Foundries) the Phase I Line 3 pouring/mold cooling, shakeout, and cast cooling operations are affected facilities.

The shakeout and cast cooling operations do not have specific applicable requirements under this NESHAP for existing affected facilities.

(D) One (1) Line 3 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) Line 3 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 (constructed in 1996, modified in 2011, and approved in 2014 for modification)

(A) One (1) Line 4 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) Line 4 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) Line 4 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;

Under 40 CFR 63, Subpart EEEEE (NESHAP for Iron and Steel Foundries) the Phase I Line 4 pouring/mold cooling, shakeout, and cast cooling operations are affected facilities.

The shakeout and cast cooling operations do not have specific applicable requirements under this NESHAP for existing affected facilities.

(D) One (1) Line 4 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) Line 4 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;

Phase I Sand Handling & Ancillary Operations

(c) Sand handling operations and ancillary operations, consisting of the following:

Phase I Sand Handling

(1) One (1) Phase I return sand handling & screen operation, identified as P21, constructed in 1996 and modified in 2011, 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) Phase I sand cooling & water addition operation, identified as P22, constructed in 1996 and modified in 2011, 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) Phase I sand mulling & handling operation, identified as P23, constructed in 1996 and modified in 2011, 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) Phase I spent sand handling & processing operation, identified as P24, constructed in 1996 and modified in 2011, with a maximum throughput of 54 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;

Phase I Furnace Material Handling

(5) One (1) Phase I metallic returns handling operation, identified as P25, constructed in 1996 and modified in 2011, with a maximum throughput of 33 tons per hour, using one(1) baghouse (C07) for particulate control, exhausting to stack S07;

(6) One (1) Phase I charge and make-up operation, identified as P32, constructed in 1996, with a maximum throughput of 100 tons per hour, using one (1) baghouse (C44) for particulate control, exhausting to stack S44;

Phase I Core Making Operations

(7) One (1) Phase I core sand handling operation, identified as P40, constructed in 1996, with a maximum throughput of 16 tons per hour, using one (1) baghouse (C08) for particulate control, exhausting to stack S08;

(8) One (1) Phase I core manufacturing operation, identified as P41, constructed in 1996, with a maximum throughput of 16 tons per hour, exhausting to stack S11;

(9) One (1) Phase I core machine & oven operation, identified as P51, constructed in 1996, with a maximum heat input capacity of 16.8 MMBtu per hour, combusting natural gas, exhausting to stack S11;

Under 40 CFR 63, Subpart EEEEE (NESHAP for Iron and Steel Foundries) the Phase I

Core Making Operations are affected facilities.

The coremaking operations do not have specific applicable requirements under this NESHAP, because the requirements under this NESHAP only apply to triethylamine (TEA) cold box or core making lines at iron and steel foundries.

Phase I Ladle Operations

(10) One (1) Phase I ladle preheating operation, identified as P53, constructed in 1996, with a maximum heat input capacity of 11.5 MMBtu per hour, combusting natural gas, utilizing no control, and exhausting to stack S12;

(11) One (1) Phase I ladle preheating operation, identified as P53B, constructed in 1996, with a maximum heat input capacity of 11.5 MMBtu per hour, combusting natural gas, utilizing no control, and exhausting to stack S15;

(12) One (1) Phase I ladle filling & iron transport operation, identified as P85, constructed in 1996 and modified in 2011, with a maximum throughput of 100 tons per hour, using one (1) baghouse (C44) for particulate control, exhausting to stack S44;

A portion of the ladle filling & iron transport operation, identified as P85, is released inside the building and not ventilated to baghouse C44.

(13) One (1) Phase I Melt Area Ladle Cleaning, identified as P86, constructed in 1996, 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, constructed in 1996, 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, constructed in 1996, 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, constructed in 1996, 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, constructed in 1996, 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;

Phase I Ancillary Operations

(18) Phase I air make-up units, identified as P52, constructed in 1996, with a maximum combined heat input capacity of 65.6 million British thermal units (MMBtu) per hour, combusting natural gas, using no control, exhausting to stack S01;

(19) One (1) Phase I 16 ton iron bath desulfurization ladle operation, approved in 2011 for construction, 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;

(20) One (1) Phase I autogrinder operation, 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;

(21) Two (2) Phase I autogrinder machines, 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;

Phase II

Phase II Metal Melting

(d) One (1) Phase II cupola iron melting system, identified as P33, constructed in 1998 and modified in 2011, 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;

Under 40 CFR 63, Subpart EEEEE (NESHAP for Iron and Steel Foundries) the Phase II cupola iron melting system is an affected facility.

Phase II Casting & Finishing

(e) Four (4) Phase II production lines, consisting of the following:

(1) Line 5 (constructed in 1998, and modified in 2011)

(A) One (1) Line 5 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) Line 5 shakeout operation, identified as P61, with a maximum throughput 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) Line 5 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;

Under 40 CFR 63, Subpart EEEEE (NESHAP for Iron and Steel Foundries) the Phase II Line 5 pouring/mold cooling, shakeout, and cast cooling operations are affected facilities.

The shakeout and cast cooling operations do not have specific applicable requirements under this NESHAP for existing affected facilities.

(D) One (1) Line 5 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) Line 5 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 (constructed in 1998, and modified in 2011)

(A) One (1) Line 6 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) Line 6 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) Line 6 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;

Under 40 CFR 63, Subpart EEEEE (NESHAP for Iron and Steel Foundries) the Phase II Line 6 pouring/mold cooling, shakeout, and cast cooling operations are affected facilities.

The shakeout and cast cooling operations do not have specific applicable requirements under this NESHAP for existing affected facilities.

(D) One (1) Line 6 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) Line 6 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 (constructed in 1998, and modified in 2011)

(A) One (1) Line 7 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) Line 7 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) Line 7 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;

Under 40 CFR 63, Subpart EEEEE (NESHAP for Iron and Steel Foundries) the Phase II Line 7 pouring/mold cooling, shakeout, and cast cooling operations are affected facilities.

The shakeout and cast cooling operations do not have specific applicable requirements under this NESHAP for existing affected facilities.

(D) One (1) Line 7 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) Line 7 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 (constructed in 1998, and modified in 2011)

(A) One (1) Line 8 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) Line 8 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) Line 8 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;

Under 40 CFR 63, Subpart EEEEE (NESHAP for Iron and Steel Foundries) the Phase II Line 8 pouring/mold cooling, shakeout, and cast cooling operations are affected facilities.

The shakeout and cast cooling operations do not have specific applicable requirements under this NESHAP for existing affected facilities.

(D) One (1) Line 8 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;

(E) One (1) Line 8 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 & Ancillary Operations

(f) Sand handling operations and ancillary operations, consisting of the following:

Phase II Sand Handling

(1) One (1) return sand handling and screening operation, identified as P80, constructed in 1998 and modified in 2011, 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, constructed in 1998 and modified in 2011, 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, constructed in 1998 and modified in 2011, 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, constructed in 1998 and modified in 2011, 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;

Phase II Furnace Material Handling

(5) One (1) metal returns handling operation, identified as P84, constructed in 1998 and modified in 2011, 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, identified as constructed in 1998 and modified in 2011, with a maximum charge of 114.0 tons per hour, using one (1) baghouse (C44) for particulate control, exhausting to stack S44;

(7) Raw material handling, constructed in 1998, including the following:

(A) Iron handling at a maximum rate of 187.5 tons per hour,

(B) Alloys handling at a maximum rate of 1.875 tons per hour,

(C) Coke handling at a maximum rate of 18.875 tons per hour, and

(D) Limestone handling at a maximum rate of 4.5 tons per hour;

Phase II Ladle Operations

(8) One (1) ladle filling and iron transport operation, constructed in 1998 and modified in 2011, with a maximum capacity of 188 tons of iron per hour, using

one (1) baghouse (C44) for particulate control, exhausting to stack S44;

(9) One (1) Phase II Melt Area Ladle Cleaning, constructed in 1998, 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;

(10) One (1) Line 5 ladle cleaning operation, constructed in 1998, 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 6 ladle cleaning operation, constructed in 1998, 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 7 ladle cleaning operation, constructed in 1998, 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) Line 8 ladle cleaning operation, constructed in 1998, 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;

Phase II Ductile Iron Treatment

(14) One (1) Phase II Ductile Iron Treatment Ladle Cleaning, constructed in 1998, 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;

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.

(15) Two (2) ductile iron treatment stations, both identified as P35, constructed in 1998 and modified in 2011, 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;

Phase II Core Making

(16) 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;

(17) One (1) phenolic-urethane core making process, identified as P43, constructed in 1998 and modified in 2001 and 2003, 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;

(18) One (1) phenolic-urethane core making process, identified as P44, constructed in 1998 and modified in 2001 and 2003, consisting of 2 mixers and 2 core machines, each with a maximum capacity of 3 tons of cores per hour (with a

combined maximum capacity of 12 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;

Under 40 CFR 63, Subpart EEEEE (NESHAP for Iron and Steel Foundries) the Phase II Core Making Operations are affected facilities.

The coremaking operations do not have specific applicable requirements under this NESHAP, because the requirements under this NESHAP only apply to triethylamine (TEA) cold box or core making lines at iron and steel foundries.

Phase II Ancillary Operations

(19) Natural gas fired air make-up units, constructed in 1998, 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) Tumbleblast shotblast machine, identified as P55, constructed in 2001, with a maximum capacity of 20 tons of metal castings per hour, with emissions controlled by existing baghouse C15, and exhausting to stack S15;

(21) One (1) pattern shop, identified as P50, constructed in 1998, with a maximum capacity of 10 patterns per hour, controlled by a baghouse, and exhausting indoors;

Core Room Expansion I

(g) 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;

(h) One (1) phenolic-urethane core making process, identified as P47, constructed in 2005, consisting of 3 mixers and 3 core machines, each with a maximum capacity of 15 tons of cores per hour, with a combined maximum capacity of 45 tons of cores per hour. DMIPA catalyst emissions are controlled by one (1) packed bed scrubber, identified as C17. The gases are then exhausted to Stack S17;

(i) Three (3) natural gas-fired core drying ovens and natural gas-fired air make-up units, identified as P48, constructed 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 to stack S48;

Under 40 CFR 63, Subpart EEEEE (NESHAP for Iron and Steel Foundries) the Core Room Expansion I operations are affected facilities.

The coremaking operations do not have specific applicable requirements under this NESHAP, because the requirements under this NESHAP only apply to triethylamine (TEA) cold box or core making lines at iron and steel foundries.

Core Room Expansion II

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

(k) Two (2) natural gas-fired core dry ovens, each constructed in 2008, identified as P48A and P48B, with a maximum capacity of 2.5 MMBtu/hr each, utilizing no control, and with emissions exhausting to stacks S48A and S48B, respectively;

Under 40 CFR 63, Subpart EEEEE (NESHAP for Iron and Steel Foundries) the Core Room Expansion II operations are affected facilities.

The coremaking operations do not have specific applicable requirements under this NESHAP, because the requirements under this NESHAP only apply to triethylamine (TEA) cold box or core making lines at iron and steel foundries.

Sand Reclamation System for Phase I and Phase II processes

(l) One (1) sand reclamation system, identified as P27, approved in 2015 for construction, with a maximum throughput rate 9 tons of spent sand per hour, consisting of:

(1) Lump crushing and screening equipment listed below, controlled by baghouse C27A and venting to stack S07:

(i) One (1) lump crusher
(ii) One (1) sand screen
(iii) Two (2) bucket elevators
(iv) One (1) sand and clay separator

(2) Thermal reclamation equipment listed below, controlled by baghouse C27B and venting to stack S07:

(i) One (1) thermal sand reclaimer, equipped with 10 MMbtu/hr natural gas fired oven
(ii) One (1) sand cooler
(iii) One (1) sand and clay separator
(iv) Two (2) bucket elevators

Under NSPS, Subpart UUU, the thermal sand reclaimer is considered a calciner.

(3) Two (2) iron separators, without control and exhausting inside.

A.3 Specifically Regulated Insignificant Activities
[326 IAC 2-7-1(21)][326 IAC 2-7-4(c)][326 IAC 2-7-5(14)]

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

(a) Bulk material delivery including foundry sand, coke, limestone and silicon carbide [326 IAC 2-7-1(21)(E)];

(b) Bulk material storage piles including Iron scrap, silica sand and other raw materials [326 IAC 2-7-1(21)(E)];

(c) Casting handling, trimming and packaging [326 IAC 2-7-1(21)(E)];

(d) Construction and demolition of facility equipment and buildings [326 IAC 2-7-1(21)(J)(xvii)]

(e) Convenience space heating (less than five million BTU/hr burning natural gas, liquid fuel, or wood) [326 IAC 2-7-1(21)(J)(i)]

(f) Convenience water heating [326 IAC 2-7-1(21)(J)(i)]

(g) Cooling towers [326 IAC 2-7-1(21)(J)(ix)(FF)]

(h) Emergency Generators [326 IAC 2-7-1(21)(E), consisting of the follow:

(1) One (1) diesel-fired compression-ignition emergency RICE, constructed in 1997, with a power output of 99 kW, utilizing no control, and exhausting outdoors.

Under NESHAP Subpart ZZZZ, this emergency generator is an existing affected facility.

(i) Employee tobacco use areas [326 IAC 2-7-1(21)(E)]

(j) Equipment waste heat dissipation [326 IAC 2-7-1(21)(E)]

(k) Fire Control Equipment [326 IAC 2-7-1(21)(E)]

(l) Gasoline fuel transfer and dispensing operation handling less than or equal to 1,300 gallons per day, such as filling of tanks, locomotives, automobiles, having a storage capacity less than or equal to 10,500 gallons [326 IAC 2-7-1(21)(J)(ii)(AA)]

(m) Handling and Transport of Waste Sand [326 IAC 2-7-1(21)(E)]

(n) Handling of foundry wastes [326 IAC 2-7-1(21)(E)]

(o) Heat exchanger cleaning and repair [326 IAC 2-7-1(21)(J)(x)(BB)]

(p) Internal Combustion Engines Used for Warehousing and Material Transport [326 IAC 2-7-1(21)(J)(i)(BB)]

(q) Laboratory as defined in 326 IAC 2-7-1(21)(G) [326 IAC 2-7-1(21)(G)]

(r) Maintenance battery charging stations [326 IAC 2-7-1(21)(J)(xvii)]

(s) Maintenance blowdown for any of the following: sight glass; boilers; compressors; pumps; and cooling tower [326 IAC 2-7-1(21)(J)(xx)]

(t) Maintenance compressed air moisture removal and venting [326 IAC 2-7-1(21)(J)(xxii)(BB)]

(u) Maintenance degreasing of molding machines with mineral spirits (1,200 gallons or 7,600 lbs per year) [326 IAC 2-7-1(21)(J)(vi)(DD)] [326 IAC 8-3-2]

(v) Maintenance degreasing operations that do not exceed 145 gallons per 12 months [326 IAC 2-7-1(21)(J)(vi)(CC)] [326 IAC 8-3-2]

(w) Maintenance janitorial activities [326 IAC 2-7-1(21)(J)(xvii)]

(x) Maintenance machining [326 IAC 2-7-1(21)(E)]

(y) Maintenance metal cutting with blades and torches [326 IAC 2-7-1(21)(J)(vi)(EE)]

(z) Maintenance of boiler, turbine, and HVAC systems [326 IAC 2-7-1(21)(J)(xvii)]

(aa) Maintenance of grounds, equipment, and buildings (lawn care, painting, etc.) [326 IAC 2-

7-1(21)(J)(xvii)]

(bb) Maintenance of roof structure and insulation [326 IAC 2-7-1(21)(J)(xvii)]

(cc) Maintenance of vehicles and equipment including repairs, steam cleaning and pressure washing [326 IAC 2-7-1(21)(J)(xvii)]

(dd) Maintenance painting [326 IAC 2-7-1(21)(J)(xvii)]

(ee) Maintenance use of portable generators [326 IAC 2-7-1(21)(J)(xxii)]

(ff) Maintenance use of portable media blasting including sand and dry ice [326 IAC 2-7-1(21)(E)]

(gg) Maintenance welding (fixed and portable) [326 IAC 2-7-1(21)(J)(vi)(EE)]

(hh) Minor storage piles less than 100 $yd^3$ for foundry sand on unpaved areas [326 IAC 2-7-1(21)(E)]

(ii) Mold release agents using low volatile products (vapor pressure less than or equal to 2 kilopascals measured at 38 degrees C) [326 IAC 2-7-1(21)(J)(vi)(DD)]

(jj) Natural gas-fired combustion sources with heat input equal to or less than ten million (10,000,000) Btu per hour [326 IAC 2-7-1(21)(J)(i)]

(kk) Office activities [326 IAC 2-7-1(21)(E)]

(ll) On-site first aid medical care including use of isopropyl alcohol [326 IAC 2-7-1(21)(E)]

(mm) Operations using aqueous solutions containing less than 1% by weight of VOCs excluding HAPs [326 IAC 2-7-1(21)(J)(ix)(DD)]

(nn) Paved road maintenance including paving, salting, sanding and street sweeping [326 IAC 2-7-1(21)(J)(xvii)]

(oo) Petroleum fuel, other than gasoline, dispensing facility, having a storage capacity of less than or equal to 10,500 gallons, and dispensing less than or equal to 230,000 gallons per month [326 IAC 2-7-1(21)(J)(ii)]

(pp) Pollution Control Equipment Maintenance [326 IAC 2-7-1(21)(J)(x)(AA)]

(qq) Portable kerosene heaters used indoors and outdoors [326 IAC 2-7-1(21)(J)(i)]

(rr) Process safety relief devices [326 IAC 2-7-1(21)(E)]

(ss) Product dunnage handling [326 IAC 2-7-1(21)(E)]

(tt) Purging of natural gas lines [326 IAC 2-7-1(21)(J)(xvii)(AA)]

(uu) Safety and emergency equipment and training [326 IAC 2-7-1(21)(I)]

(vv) Sanitary sewer and plumbing venting [326 IAC 2-7-1(21)(J)(ix)(AA)]

(ww) Skid mounted wastewater treatment plant operations [326 IAC 2-7-1(21)(J)(ix)(AA)]

(xx) Slag quenching [326 IAC 2-7-1(21)(E)]

(yy) Traffic on paved roads [326 IAC 2-7-1(21)(J)(xiii)]

(zz) Traffic on unpaved roads [326 IAC 2-7-1(21)(J)(xiii)]

(aaa) Underground conveyors [326 IAC 2-7-1(21)(J)(xiv)(CC)]

(bbb) Warehousing of supply materials [326 IAC 2-7-1(21)(J)(i)(BB)]

(ccc) Wastewater streams treatment with an oil and grease content less than or equal to 1% by volume [326 IAC 2-7-1(21)(J)(ix)(AA)]

## 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) This permit, T123-33768-00019, is issued for a fixed term of five (5) years from the issuance date of this permit, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3. Subsequent revisions, modifications, or amendments of this permit do not affect the expiration date of this permit.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

(1) it contains a certification by a "responsible official" as defined by 326 IAC 2-7-1(35), and

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

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

(c) A "responsible official" is defined at 326 IAC 2-7-1(35).

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

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

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

and

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

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

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

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

(2) The compliance status;

(3) Whether compliance was continuous or intermittent;

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

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

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

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

(a) A Preventive Maintenance Plan meets the requirements of 326 IAC 1-6-3 if it includes, at a minimum:

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

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

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

The Permittee shall implement the PMPs.

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

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

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

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

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

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

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

The Permittee shall implement the PMPs.

(c) A copy of the PMPs shall be submitted to IDEM, OAQ upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ may require the Permittee to revise its PMPs whenever lack of proper maintenance causes or is the primary contributor to an exceedance of any limitation on emissions. The

PMPs and their submittal do not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

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

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

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

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

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

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

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

(4) For each emergency lasting one (1) hour or more, the Permittee notified IDEM, OAQ or Southwest Regional Office within four (4) daytime business hours after the beginning of the emergency, or after the emergency was discovered or reasonably should have been discovered;

Telephone Number: 1-800-451-6027 (ask for Office of Air Quality, Compliance and Enforcement Branch), or
Telephone Number: 317-233-0178 (ask for Office of Air Quality, Compliance and Enforcement Branch)
Facsimile Number: 317-233-6865
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

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

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

(A) A description of the emergency;

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

(C) Corrective actions taken.

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

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

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

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

(e) The Permittee seeking to establish the occurrence of an emergency shall make records available upon request to ensure that failure to implement a PMP did not cause or contribute to an exceedance of any limitations on emissions. However, IDEM, OAQ may require that the Preventive Maintenance Plans required under 326 IAC 2-7-4(c)(8) be revised in response to an emergency.

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

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

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

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

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

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

requirement until the permit is reissued. The permit shield shall continue in effect so long as the Permittee is in compliance with the compliance order.

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

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

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

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

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

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

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

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

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

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

(a) All terms and conditions of permits established prior to T123-33768-00019 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 permit, all previous registrations and permits are superseded by this Part 70 operating permit.

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

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

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

(a) This permit may be modified, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a Part 70 Operating Permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any condition of this permit. [326 IAC 2-7-5(6)(C)] The notification by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

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

(1) That this permit contains a material mistake.

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

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

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

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

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

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

Request for renewal shall be submitted to:

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

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

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

(2) If the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the

document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

(4) The Permittee notifies the:

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

and

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

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

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

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

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

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

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

(3) Any change in emissions; and

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

## SECTION C SOURCE OPERATION CONDITIONS

Entire Source

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

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

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

C.2 Opacity [326 IAC 5-1]

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

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

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

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

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

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

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

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

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

C.6 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 attached plan as in Attachment A. The provisions of 326 IAC 6-5 are not federally enforceable.

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

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

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

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

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

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

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

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

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

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

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

(c) Pursuant to 326 IAC 3-6-4(b), all test reports must be received by IDEM, OAQ not later than forty-five (45) days after the completion of the testing. An extension may be granted by IDEM, OAQ if the Permittee submits to IDEM, OAQ a reasonable written explanation not later than five (5) days prior to the end of the initial forty-five (45) day period.

**Compliance Requirements [326 IAC 2-1.1-11]**

C.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)][40 CFR 64][326 IAC 3-8]

(a) For new units:
Unless otherwise specified in the approval for the new emission unit(s), compliance monitoring for new emission units shall be implemented on and after the date of initial start-up.

(b) For existing units:
Unless otherwise specified in this permit, for all monitoring requirements not already legally required, the Permittee shall be allowed up to ninety (90) days from the date of

permit issuance to begin such monitoring. If, due to circumstances beyond the Permittee's control, any monitoring equipment required by this permit cannot be installed and operated no later than ninety (90) days after permit issuance, the Permittee may extend the compliance schedule related to the equipment for an additional ninety (90) days provided the Permittee notifies:

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

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

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

(c) For monitoring required by CAM, at all times, the Permittee shall maintain the monitoring, including but not limited to, maintaining necessary parts for routine repairs of the monitoring equipment.

(d) For monitoring required by CAM, except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), the Permittee shall conduct all monitoring in continuous operation (or shall collect data at all required intervals) at all times that the pollutant-specific emissions unit is operating. Data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities shall not be used for purposes of this part, including data averages and calculations, or fulfilling a minimum data availability requirement, if applicable. The owner or operator shall use all the data collected during all other periods in assessing the operation of the control device and associated control system. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions.

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. The analog instrument shall be capable of measuring values outside of the normal range.

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

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

C.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 shall maintain the most recently submitted written emergency reduction plans (ERPs) consistent with safe operating procedures.

(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 [40 CFR 64][326 IAC 3-8][326 IAC 2-7-5] [326 IAC 2-7-6]

(I) Upon detecting an excursion where a response step is required by the D Section, or an exceedance of a limitation, not subject to CAM, in this permit:

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

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

(1) initial inspection and evaluation;

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

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

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

(1) monitoring results;

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

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

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

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

(II)

(a) CAM *Response to excursions or exceedances.*

(1) Upon detecting an excursion or exceedance, subject to CAM, the Permittee shall restore operation of the pollutant-specific emissions unit (including the 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 emissions. The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions). Such actions may include initial inspection and evaluation, recording that operations returned to normal without operator action (such as through response by a computerized distribution control system), or any necessary follow-up actions to return operation to within the indicator range, designated condition, or below the applicable emission limitation or standard, as applicable.

(2) Determination of whether the Permittee has used acceptable procedures in response to an excursion or exceedance will be based on information available, which may include but is not limited to, monitoring results, review of operation and maintenance procedures and records, and inspection of the control device, associated capture system, and the process.

(b) If the Permittee identifies a failure to achieve compliance with an emission limitation, subject to CAM, or standard, subject to CAM, for which the approved monitoring did not provide an indication of an excursion or exceedance while providing valid data, or the results of compliance or performance testing document a need to modify the existing indicator ranges or designated conditions, the Permittee shall promptly notify the IDEM, OAQ and, if necessary, submit a proposed significant permit modification to this permit to address the necessary monitoring changes. Such a modification may include, but is not limited to, reestablishing indicator ranges or designated conditions, modifying the frequency of conducting monitoring and collecting data, or the monitoring of additional parameters.

(c) Based on the results of a determination made under paragraph (II)(a)(2) of this condition, the EPA or IDEM, OAQ may require the Permittee to develop and implement a QIP. The Permittee shall develop and implement a QIP if notified to in writing by the EPA or IDEM, OAQ.

(d) Elements of a QIP:
The Permittee shall maintain a written QIP, if required, and have it available for inspection. The plan shall conform to 40 CFR 64.8 b (2).

(e) If a QIP is required, the Permittee shall develop and implement a QIP as expeditiously as practicable and shall notify the IDEM, OAQ if the period for completing the improvements contained in the QIP exceeds 180 days from the date on which the need to implement the QIP was determined.

(f) Following implementation of a QIP, upon any subsequent determination pursuant to paragraph (II)(a)(2) of this condition the EPA or the IDEM, OAQ may require that the Permittee make reasonable changes to the QIP if the QIP is found to have:

(1) Failed to address the cause of the control device performance problems; or

(2) Failed to provide adequate procedures for correcting control device performance problems as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions.

(g) Implementation of a QIP shall not excuse the Permittee from compliance with any existing emission limitation or standard, or any existing monitoring, testing, reporting or recordkeeping requirement that may apply under federal, state, or local law, or any other applicable requirements under the Act.

(h) *CAM recordkeeping requirements.*

(1) The Permittee shall maintain records of monitoring data, monitor performance data, corrective actions taken, any written quality improvement plan required pursuant to paragraph (II)(a)(2) of this condition and any activities undertaken to implement a quality improvement plan, and other supporting information required to be maintained under this condition (such as data used to document the adequacy of monitoring, or records of monitoring maintenance or corrective actions). Section C - General Record Keeping Requirements of this permit contains the Permittee's obligations with regard to the records required by this condition.

(2) Instead of paper records, the owner or operator may maintain records on alternative media, such as microfilm, computer files, magnetic tape disks, or microfiche, provided that the use of such alternative media allows for expeditious inspection and review, and does not conflict with other applicable recordkeeping requirements

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(35).

**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 by 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:

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

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

The statement must be submitted to:

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

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

C.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. Support information includes the following, where applicable:

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

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

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

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

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

(c) If there is a reasonable possibility (as defined in 326 IAC 2-2-8 (b)(6)(A), 326 IAC 2-2-8 (b)(6)(B), 326 IAC 2-3-2 (l)(6)(A), and/or 326 IAC 2-3-2 (l)(6)(B)) that a "project" (as defined in 326 IAC 2-2-1(oo) and/or 326 IAC 2-3-1(jj)) 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(dd) and/or 326 IAC 2-3-1(y)) may result in significant emissions increase and the Permittee elects to utilize the "projected actual emissions" (as defined in 326 IAC 2-2-1(pp) and/or 326 IAC 2-3-1(kk)), the Permittee shall comply with following:

(1) Before beginning actual construction of the "project" (as defined in 326 IAC 2-2-1(oo) and/or 326 IAC 2-3-1(jj)) 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(pp)(2)(A)(iii) and/or 326 IAC 2-3-1 (kk)(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 326 IAC 2-2-8 (b)(6)(A) and/or 326 IAC 2-3-2 (l)(6)(A)) that a "project" (as defined in 326 IAC 2-2-1(oo) and/or 326 IAC 2-3-1(jj)) 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(dd) and/or 326 IAC 2-3-1(y)) may result in significant emissions increase and the Permittee elects to utilize the "projected actual emissions" (as defined in 326 IAC 2-2-1(pp) and/or 326 IAC 2-3-1(kk)), 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] [40 CFR 64][326 IAC 3-8]

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

On and after the date by which the Permittee must use monitoring that meets the requirements of 40 CFR Part 64 and 326 IAC 3-8, the Permittee shall submit CAM reports to the IDEM, OAQ.

A report for monitoring under 40 CFR Part 64 and 326 IAC 3-8 shall include, at a minimum, the information required under paragraph (a) of this condition and the following information, as applicable:

(1) Summary information on the number, duration and cause (including unknown cause, if applicable) of excursions or exceedances, as applicable, and the corrective actions taken;

(2) Summary information on the number, duration and cause (including unknown cause, if applicable) for monitor downtime incidents (other than downtime associated with zero and span or other daily calibration checks, if applicable); and

(3) A description of the actions taken to implement a QIP during the reporting period as specified in Section C-Response to Excursions or Exceedances. Upon completion of a QIP, the owner or operator shall include in the next summary report documentation that the implementation of the plan has been completed and reduced the likelihood of similar levels of excursions or exceedances occurring.

The Permittee may combine the Quarterly Deviation and Compliance Monitoring Report and a report pursuant to 40 CFR 64 and 326 IAC 3-8.

(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 or the date of initial start-up, whichever is later, 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 (oo) and/or 326 IAC 2-3-1 (jj)) 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 (ww) and/or 326 IAC 2-3-1 (pp), 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 no later than 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 projection.

Reports required in this part 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

(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 applicable standards for recycling and emissions reduction.

## SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS

**Emissions Unit Description: Stack S09**

Phase I Metal Melting

(a) One (1) Phase I gray iron cupola, identified as P30, constructed in 1996 and modified in 2011, 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;

Under 40 CFR 63, Subpart EEEEE (NESHAP for Iron and Steel Foundries) the Phase I gray iron cupola is an affected facility.

Phase II Metal Melting

(d) One (1) Phase II cupola iron melting system, identified as P33, constructed in 1998 and modified in 2011, 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;

Under 40 CFR 63, Subpart EEEEE (NESHAP for Iron and Steel Foundries) the Phase II cupola iron melting system is an affected facility.

(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 Matter [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (PSD – BACT) and CP 123-8451-00019 issued on February 4, 1998, the Permittee shall comply with the following:

(a) In conjunction with Condition D.1.9, the combined PM emissions after control from the cupolas (P30 and P33), exhausting to stack S09, shall not exceed 0.078 pounds per ton of iron and 12.48 pounds per hour.

(b) The PM emissions from the Phase I gray iron cupola (P30) shall be controlled by a baghouse.

(c) The PM emissions from the Phase II cupola iron melting system (P33) shall be controlled by a baghouse

Pursuant to 326 IAC 2-2-3 (PSD – BACT) and CP 123-4593-00019 issued on January 19, 1996, the Permittee shall comply with the following:

(d) Visible emissions from the cupola stack S09 shall not exceed ten percent (10%) opacity.

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

D.1.2 PSD BACT for Sulfur Dioxide (SO2) [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (PSD – BACT), CP 123-8451-00019 issued on February 4, 1998, Amendment 123-9740-00019 issued May 22, 1998, and PSD/SSM 123-29490-00019 issued on May 10, 2011, the Permittee shall comply with the following:

(a) In conjunction with Condition D.1.9, the combined sulfur dioxide (SO2) emissions after control from both cupolas (P30 and P33), exhausting to stack S09, shall not exceed 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) The amount of coke burned in each cupola (P30 and P33) shall not exceed 240 tons per day.

(c) The sulfur dioxide (SO2) emissions from the two (2) cupolas (P30 and P33) shall be controlled by dry injection scrubbing systems using a dry lime or other equivalent alkaline reagent located prior to the baghouse.

D.1.3 PSD BACT for Nitrogen Oxide (NOx) [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (PSD – BACT), CP 123-8451-00019 issued on February 4, 1998, and PSD/SSM 123-29490-00019 issued on May 10, 2011, in conjunction with Condition D.1.9, the combined nitrogen oxide ($NO_X$) emissions before control from both cupolas (P30 and P33), exhausting to stack S09, shall not exceed 0.44 pounds per ton of iron and 88.0 pounds per hour.

D.1.4 PSD BACT for Volatile Organic Compounds (VOC) [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (PSD – BACT), 326 IAC 8-1-6 (General Reduction Requirements for New Facilities), CP 123-8451-00019 issued on February 4, 1998, and PSD/SSM 123-29490-00019 issued on May 10, 2011, the Permittee shall comply with the following:

(a) In conjunction with Condition D.1.9, the combined volatile organic compound (VOC) emissions after control from both cupolas (P30 and P33), exhausting to stack S09, shall not exceed 0.02 pounds per ton of iron and 4.0 pounds per hour.

(b) The volatile organic compound (VOC) emissions from the cupolas (P30 and P33) shall be controlled by a recuperative incinerator/heat recovery system, equipped with low NOx burners, prior to the dry injection scrubber and baghouse system.

(c) The recuperative incinerator/heat recovery system shall use only natural gas as the primary fuel, and propane may be used as a backup fuel.

D.1.5 PSD BACT for Carbon Monoxide (CO) [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (PSD – BACT), CP 123-8451-00019 issued on February 4, 1998, Amendment 123-9740-00019 issued May 22, 1998, and PSD/SSM 123-29490-00019 issued on May 10, 2011, the Permittee shall comply with the following:

(a) In conjunction with Condition D.1.9, the combined carbon monoxide (CO) emissions after control from the cupolas (P30 and P33), exhausting to stack S09, shall not exceed 0.4 pounds per ton of iron and 80.0 pounds per hour.

(b) The carbon dioxide (CO) emissions from the cupola P30 and P33 shall be controlled by a recuperative incinerator/heat recovery system, equipped with low NOx burners, prior to the dry injection scrubber and baghouse system.

(c) The recuperative incinerator/heat recovery system shall use only natural gas as the primary fuel, and propane may be used as a backup fuel.

D.1.6 Carbon Monoxide Emission Limits [326 IAC 9-1-2]

Pursuant to 326 IAC 9-1-2 (Carbon Monoxide Emission Limits), the carbon monoxide emissions from the cupolas shall be controlled by recuperative incinerator/heat recovery systems.

D.1.7 PSD BACT for Lead (Pb) [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (PSD – BACT) and CP 123-8451-00019 issued on February 4, 1998, the Permittee shall comply with the following:

(a) The combined lead (Pb) emissions after control from both cupolas (P30 and P33), exhausting to stack S09, shall not exceed 0.54 pounds per hour.

(b) The lead (Pb) emissions from the Phase I gray iron cupola (P30) shall be controlled by a baghouse.

(c) The lead (Pb) emissions from the Phase II cupola iron melting system (P33) shall be controlled by a baghouse.

D.1.8 PSD BACT for Beryllium (Be) [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (PSD – BACT) and CP 123-8451-00019 issued on February 4, 1998, the Permittee shall comply with the following:

(a) The combined beryllium (Be) emissions after control from both cupolas (P30 and P33), exhausting to stack S09, shall not exceed 0.0016 pounds per hour.

(b) The beryllium (Be) emissions from the Phase I gray iron cupola (P30) shall be controlled by a baghouse.

(c) The beryllium (Be) emissions from the Phase II cupola iron melting system (P33) shall be controlled by a baghouse.

D.1.9 PSD BACT Operating Requirements [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (PSD – BACT), CP 123-8451-00019 issued on February 4, 1998, and PSD/SSM 123-29490-00019 issued on May 10, 2011, the Permittee shall comply with the following:

(a) The amount of metal melted in the Phase I gray iron cupola (P30) shall not exceed 100 tons per hour, based on a 24 hour average.

(b) The amount of metal melted in the Phase II cupola iron melting system (P33) shall not exceed 100 tons per hour, based on a 24 hour average.

D.1.10 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventative Maintenance Plan is required for these facilities and their control devices. Section B – Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

**Compliance Determination Requirements**

D.1.11 Testing Requirements [326 IAC 2-7-6(1),(6)][326 IAC 2-1.1-11]

(a) In order to determine compliance with Conditions D.1.1, D.1.6, and D.1.7, within ninety (90) days ) after the issuance of Part 70 Renewal No. T123-33768-00019, the Permittee shall perform PM, opacity, lead (Pb), and beryllium (Be) 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 the most recent compliance demonstration.

(b) In order to determine compliance with Conditions D.1.2, D.1.3, D.1.4 and D.1.5, within ninety (90) days after the issuance of Part 70 Renewal No. T123-33768-00019, 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 the most recent compliance demonstration.

(c) 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.1.12 Particulate Matter and Metal HAPs Control

(a) In order to comply with Conditions D.1.1, D.1.7, and D.1.8, the Baghouse (C09A) for particulate and metal HAPs control shall be in operation at all times whenever the Phase I gray iron cupola (P30) is in operation.

(b) In order to comply with Conditions D.1.1, D.1.7, and D.1.8, the Baghouse (C09B) for particulate and metal HAPs control shall be in operation at all times whenever the Phase II cupola iron melting system (P33) is in operation.

(c) In the event that a bag or cartridge failure is observed in a multi-compartment bag or cartridge filter, 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.1.13 Sulfur Dioxide (SO2) Control

(a) In order to comply with Condition D.1.2, the dry injection scrubbing system (C12A) for SO2 control shall be in operation at all times whenever the Phase I gray iron cupola (P30) is in operation.

(b) In order to comply with Condition D.1.2, the dry injection scrubbing system (C12B) for SO2 control shall be in operation at all times whenever the Phase II cupola iron melting system (P33) is in operation.

D.1.14 SO2 Continuous Emissions Monitoring System (CEMS) [40 CFR 64]

Pursuant to 40 CFR 64, and in order to comply with Condition D.1.2, the Permittee shall install and operate a SO2 continuous emissions monitoring system (CEMS) for the Phase I and Phase II cupolas (P30 and P33) exhausting to stack S09.

(a) The SO2 CEMS shall be certified according to procedures contained in 326 IAC 3 and 40 CFR 75 as applicable.

(b) The continuous monitoring system shall be equipped with a flow monitor to provide data in pounds of SO2 per hour.

(c) The SO2 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 Volatile Organic Compounds (VOC) and Carbon Monoxide (CO) Control

(a) In order to comply with Conditions D.1.4, D.1.5, and D.1.6, the recuperative incinerator (C11A) for VOC and CO control shall be in operation at all times whenever the Phase I gray iron cupola (P30) is in operation.

(b) In order to comply with Conditions D.1.4, D.1.5, and D.1.6, the recuperative incinerator (C11B) for VOC and CO control shall be in operation at all times whenever the Phase II cupola iron melting system (P33) is in operation.

(c) In order to comply with Conditions D.1.4 and D.1.5, the recuperative incinerators (C11A and C11B) shall only use natural gas fuel as the auxiliary fuel. Propane may be used as a backup fuel.

D.1.16 Recuperative Incinerator Temperature

In order to comply with Conditions D.1.4 and D.1.5, 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 1,400 degrees Fahrenheit (°deg;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.1.17 Bag Leak Detection System

The baghouses C09A and C09B controlling particulate matter emissions from the Phase I and Phase II 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).

D.1.18 SO2 Continuous Emissions Monitoring System (CEMS) Failure Detection [40 CFR 64]

Pursuant to 40 CFR 64, whenever the SO2 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 SO2 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.1.19 Recuperative Incinerator Failure Detection

(a) For a recuperative incinerator controlling emissions from a process operated continuously, 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.1.20 Record Keeping Requirements

(a) To document the compliance status with Condition D.1.2, 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.1.2(b).

(b) To document the compliance status with Conditions D.1.4(c) and D.1.5(c), the Permittee shall maintain records of type of fuel used in the recuperative incinerator/heat recovery systems.

(c) To document the compliance status with Condition D.1.9 the Permittee shall maintain records 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) To document the compliance status with Condition D.1.16, the Permittee shall maintain records of the temperature readings for each recuperative incinerator (reduced to 1-hour averages) and all times when the blast air is turned on and off.

(e) To document the compliance status with Condition D.1.18, the Permittee shall maintain records of the injection rate of each alkali injection system once per hour whenever the SO2 continuous emissions monitoring system (CEMS) is malfunctioning or down for repairs or adjustments for twenty-four (24) hours or more.

(f) Section C - General Record Keeping Requirements of this permit contains the Permittee's obligations with regard to the records required by this condition.

D.1.21 Reporting Requirements

The Permittee shall submit a quarterly excess emissions report, if applicable, based on the continuous emissions monitor system (CEMS) data for SO2, pursuant to 326 IAC 3-5-7. These reports shall be submitted within thirty (30) calendar days following the end of each calendar quarter. Section C - General Reporting contains the Permittee's obligation with regard to the reporting required by this condition. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

**SECTION D.2 EMISSIONS UNIT OPERATION CONDITIONS**

**Emissions Unit Description: Stacks S01, S04, and S07**

Phase I Casting & Finishing

(b) Four (4) Phase I production lines, consisting of the following:

(1) Line 1 (constructed in 1996, modified in 1998, modified in 2007, and modified in 2011)

(A) One (1) Line 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) Line 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) Line 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;

Under 40 CFR 63, Subpart EEEEE (NESHAP for Iron and Steel Foundries) the Phase I Line 1 pouring/mold cooling, shakeout, and cast cooling operations are affected facilities.

The shakeout and cast cooling operations do not have specific applicable requirements under this NESHAP for existing affected facilities.

(D) One (1) Line 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) Line 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 (constructed in 1996, and modified in 2011)

(A) One (1) Line 2 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) Line 2 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) Line 2 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;

Under 40 CFR 63, Subpart EEEEE (NESHAP for Iron and Steel Foundries) the Phase I Line 2 pouring/mold cooling, shakeout, and cast cooling operations are affected facilities.

The shakeout and cast cooling operations do not have specific applicable requirements under this NESHAP for existing affected facilities.

(D) One (1) Line 2 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) Line 2 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 (constructed in 1996, and modified in 2011)

(A) One (1) Line 3 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) Line 3 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) Line 3 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;

Under 40 CFR 63, Subpart EEEEE (NESHAP for Iron and Steel Foundries) the Phase I Line 3 pouring/mold cooling, shakeout, and cast cooling operations are affected facilities.

The shakeout and cast cooling operations do not have specific applicable requirements under this NESHAP for existing affected facilities.

(D) One (1) Line 3 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) Line 3 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 (constructed in 1996, modified in 2011, and approved in 2014 for modification)

(A) One (1) Line 4 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) Line 4 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) Line 4 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;

Under 40 CFR 63, Subpart EEEEE (NESHAP for Iron and Steel Foundries) the Phase I Line 4 pouring/mold cooling, shakeout, and cast cooling operations are affected facilities.

The shakeout and cast cooling operations do not have specific applicable requirements under this NESHAP for existing affected facilities.

(D) One (1) Line 4 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) Line 4 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;

Phase I Sand Handling & Ancillary Operations

(c) Sand handling operations and ancillary operations, consisting of the following:

Phase I Sand Handling

(1) One (1) Phase I return sand handling & screen operation, identified as P21, constructed in 1996 and modified in 2011, 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) Phase I sand cooling & water addition operation, identified as P22, constructed in 1996 and modified in 2011, 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) Phase I sand mulling & handling operation, identified as P23, constructed in 1996 and modified in 2011, 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) Phase I spent sand handling & processing operation, identified as P24, constructed in 1996 and modified in 2011, with a maximum throughput of 54 tons per hour, using three (3) baghouses (C01, C02, C03) for particulate control, exhausting to stack S01;

Phase I Furnace Material Handling

(5) One (1) Phase I metallic returns handling operation, identified as P25, constructed in 1996 and modified in 2011, with a maximum throughput of 33 tons per hour, using one(1) baghouse (C07) for particulate control, exhausting to stack S07;

Phase I Ladle Operations

(14) One (1) Line 1 ladle cleaning operation, identified as P86A, constructed in 1996, 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, constructed in 1996, 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;

Phase I Ancillary Operations

(18) Phase I air make-up units, identified as P52, constructed in 1996, with a maximum combined heat input capacity of 65.6 million British thermal units (MMBtu) per hour, combusting natural gas, using no control, 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) Pursuant to 326 IAC 2-2-3 (PSD – BACT), CP 123-4593-00019 issued on January 19, 1996, CP 123-8451-00019 issued on February 4, 1998, Amendment 123-9740-00019 issued on May 22, 1998, the PM emissions from the following processes shall be controlled by a baghouse and shall not exceed the limits as shown in the table below:

| Stack ID | Process | Process ID | Year of Construction (Modification) | PM Emission Limits for Individual Process (lb/hr) | Particulate Emission Limitation for stack (gr/dscf) | PM Stack Limit (lb/hr) | Control Device |
|---|---|---|---|---|---|---|---|
| S01 | Line 1 Pouring/Mold Cooling (1) (4) (5) | P01 | 1996 (1998, 2007, 2011) | 1.50 | 0.005 | 32.01 | Three (3) Baghouses (C01, C02, C03) |
| | Line 1 Shakeout (4) (5) | P02 | 1996 (1998, 2007, 2011) | 1.71 | | | |
| | Line 1 Cast Cooling (2) (4) (5) | P03 | 1996 (1998, 2007, 2011) | 1.93 | | | |
| | Line 1 Pick and Sort (4) (5) | P04 | 1996 (1998, 2007, 2011) | 1.33 | | | |
| | Line 2 Pouring/Mold Cooling (5) | P06 | 1996 (2011) | 1.50 | | | |
| | Line 2 Shakeout (5) | P07 | 1996 (2011) | 1.71 | | | |
| | Line 2 Cast Cooling (5) | P08 | 1996 (2011) | 1.93 | | | |
| | Line 3 Pouring/Mold Cooling (5) | P11 | 1996 (2011) | 1.50 | | | |
| | Line 3 Shakeout (5) | P12 | 1996 (2011) | 1.71 | | | |
| | Line 3 Cast Cooling (5) | P13 | 1996 (2011) | 0.43 | | | |
| | Line 4 Pouring/Mold Cooling (3) (5) | P16 | 1996 (2011, 2014) | 2.44 | | | |
| | Line 4 Shakeout (3) (5) | P17 | 1996 (2011, 2014) | 1.71 | | | |
| | Line 4 Cast Cooling (3) (5) | P18 | 1996 (2011, 2014) | 0.43 | | | |
| | Line 4 Pick and Sort (3) (5) | P19 | 1996 (2011, 2014) | 1.71 | | | |
| | Phase I Return Sand Handling/Screening | P21 | 1996 | 0.94 | | | |
| | Phase I Sand Cooling/Water Addition | P22 | 1996 | 4.24 | | | |
| | Phase I Sand Mulling/Handling | P23 | 1996 | 1.63 | | | |
| | Phase I Spent Sand Handling/Processing | P24 | 1996 | 2.74 | | | |
| | Phase I Air makeup units | P52 | 1996 | 0.90 lb/hr and 3.94 tons/yr * | | | |
| S04 | Line 1 Pouring/Mold Cooling (1) (4) (5) | P01 | 1996 (1998, 2007, 2011) | - | 0.005 | 1.72 | |
| | Line 1 Cast Cooling (2) (4) (5) | P03 | 1996 (1998, 2007, 2011) | - | | | |
| S07 | Line 1 Cleaning/Grinding (4) (5) | P05 | 1996 (1998, 2007, 2011) | 0.69 | 0.005 | 7.8 | Baghouse (C07) |
| | Line 2 Pick and Sort (5) | P09 | 1996 (2011) | 1.71 | | | |
| | Line 2 Cleaning/Grinding (5) | P10 | 1996 (2011) | 0.69 | | | |
| | Line 3 Pick and Sort (5) | P14 | 1996 (2011) | 2.10 | | | |
| | Line 3 Cleaning/Grinding (5) | P15 | 1996 (2011) | 0.69 | | | |
| | Line 4 Cleaning/Grinding (3) (5) | P20 | 1996 (2011, 2014) | 0.69 | | | |
| | Phase I Metallic Returns Handling | P25 | 1996 | 1.29 | | | |

**Notes:**

* The Phase I Air makeup units (P52) are uncontrolled, but exhausting to Stack S01.
(1) Line 1 Pouring/Mold Cooling is exhausting to stacks S01 and S04
(2) Line 1 Cast Cooling is exhausting to stacks S01 and S04
(3) In accordance with the actual to projected actual (ATPA) analysis made in PSD/SSM 123-33464-00019, issued on February 19, 2014, there is 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).
(4) In accordance with the actual to projected actual (ATPA) analysis made in PSD/SSM No. 123-25303-00019, issued on December 19, 2007, there is no significant emissions increase for PM due to the 2007 modification (modification of the Phase I Line 1 production line).
(5) In accordance with the actual to projected actual (ATPA) analysis made in PSD/SSM 123-29490-00019, issued on May 10, 2011, there is no significant emissions increase for PM10 and PM2.5 due to the 2011 modification (constructing a new desulfurization ladle operation, as well as modifying the Phase I and Phase II cupolas, the ductile iron treatment stations #1 and #2, and the casting production lines 1 through 8).

(b) Pursuant to 326 IAC 2-2-3 (PSD – BACT) and CP 123-4593-00019 issued on January 19, 1996, visible emissions from any baghouse stack shall not exceed ten percent (10%) opacity.

(c) Pursuant to 326 IAC 2-2-3 (PSD – BACT) and PSD/SSM 123-33284-00019 issued on October 15, 2013:

(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 Sulfur Dioxide (SO2) [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (PSD – BACT), CP 123-4593-00019 issued on January 19, 1996, CP 123-8451-00019 issued on February 4, 1998, Amendment 123-9740-00019 issued on May 22, 1998, PSD/SSM 123-29490-00019 issued on May 10, 2011, and PSD/SSM 123-33464-00019 issued on February 19, 2014, the sulfur dioxide (SO2) emissions from the following processes shall not exceed the limits as shown in the table below:

| Stack ID | Process | Process ID | Year of Construction (Modification) | SO2 Emission Limits for Individual Process (lb/ton) | SO2 Emission Limits for Individual Process (lb/hr) | SO2 Stack Limit (lb/hr) |
|---|---|---|---|---|---|---|
| S01 | Line 1 Pouring/Mold Cooling (1) | P01 | 1996 (1998, 2007, 2011) | 0.02 | 0.43 | 1.95 |
| | Line 1 Shakeout | P02 | 1996 (1998, 2007, 2011) | - | - | |
| | Line 1 Cast Cooling (2) | P03 | 1996 (1998, 2007, 2011) | - | - | |
| | Line 1 Pick and Sort | P04 | 1996 (1998, 2007, 2011) | - | - | |
| | Line 2 Pouring/Mold Cooling | P06 | 1996 (2011) | 0.02 | 0.34 | |
| | Line 2 Shakeout | P07 | 1996 (2011) | - | - | |
| | Line 2 Cast Cooling | P08 | 1996 (2011) | - | - | |
| | Line 3 Pouring/Mold Cooling | P11 | 1996 (2011) | 0.02 | 0.34 | |
| | Line 3 Shakeout | P12 | 1996 (2011) | - | - | |
| | Line 3 Cast Cooling | P13 | 1996 (2011) | - | - | |
| | Line 4 Pouring/Mold Cooling | P16 | 1996 (2011, 2014) | 0.02 | 0.80 | |
| | Line 4 Shakeout | P17 | 1996 (2011, 2014) | - | - | |
| | Line 4 Cast Cooling | P18 | 1996 (2011, 2014) | - | - | |
| | Line 4 Pick and Sort | P19 | 1996 (2011, 2014) | - | - | |
| | Phase I Return Sand Handling/Screening | P21 | 1996 | - | - | |
| | Phase I Sand Cooling/Water Addition | P22 | 1996 | - | - | |
| | Phase I Sand Mulling/Handling | P23 | 1996 | - | - | |
| | Phase I Spent Sand Handling/Processing | P24 | 1996 | - | - | |
| | Phase I Air makeup units | P52 | 1996 | 0.60 | 0.04 | |
| S04 | Line 1 Pouring/Mold Cooling (1) | P01 | 1996 (1998, 2007, 2011) | 0.02 | 0.33 | 0.33 |
| | Line 1 Cast Cooling (2) | P03 | 1996 (1998, 2007, 2011) | - | - | |

**Notes:**

(1) Line 1 Pouring/Mold Cooling is exhausting to stacks S01 and S04. 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 (with a total of 38 tons/hr for Line 1).

(2) Line 1 Cast Cooling is exhausting to stacks S01 and S04.

### D.2.3 PSD BACT for Nitrogen Oxide (NOx) [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (PSD – BACT), CP 123-4593-00019 issued on January 19, 1996, CP 123-8451-00019 issued on February 4, 1998, Amendment 123-9740-00019 issued on May 22, 1998, PSD/SSM 123-29490-00019 issued on May 10, 2011, and PSD/SSM 123-33464-00019 issued on February 19, 2014, the (NOx) emissions from the following processes shall not exceed the limits as shown in the table below:

| Stack ID | Process | Process ID | Year of Construction (Modification) | NOx Emission Limits for Individual Process (lb/ton) | NOx Emission Limits for Individual Process (lb/hr) | NOx Stack Limit (lb/hr) |
|---|---|---|---|---|---|---|
| S01 | Line 1 Pouring/Mold Cooling (1) | P01 | 1996 (1998, 2007, 2011) | 0.01 | 0.23 | 3.95 |
| | Line 1 Shakeout | P02 | 1996 (1998, 2007, 2011) | - | - | |
| | Line 1 Cast Cooling (2) | P03 | 1996 (1998, 2007, 2011) | - | - | |
| | Line 1 Pick and Sort | P04 | 1996 (1998, 2007, 2011) | - | - | |
| | Line 2 Pouring/Mold Cooling | P06 | 1996 (2011) | 0.01 | 0.17 | |
| | Line 2 Shakeout | P07 | 1996 (2011) | - | - | |
| | Line 2 Cast Cooling | P08 | 1996 (2011) | - | - | |
| | Line 3 Pouring/Mold Cooling | P11 | 1996 (2011) | 0.01 | 0.17 | |
| | Line 3 Shakeout | P12 | 1996 (2011) | - | - | |
| | Line 3 Cast Cooling | P13 | 1996 (2011) | - | - | |
| | Line 4 Pouring/Mold Cooling | P16 | 1996 (2011, 2014) | 0.01 | 0.40 | |
| | Line 4 Shakeout | P17 | 1996 (2011, 2014) | - | - | |
| | Line 4 Cast Cooling | P18 | 1996 (2011, 2014) | - | - | |
| | Line 4 Pick and Sort | P19 | 1996 (2011, 2014) | - | - | |
| | Phase I Return Sand Handling/Screening | P21 | 1996 | - | - | |
| | Phase I Sand Cooling/Water Addition | P22 | 1996 | - | - | |
| | Phase I Sand Mulling/Handling | P23 | 1996 | - | - | |
| | Phase I Spent Sand Handling/Processing | P24 | 1996 | - | - | |
| | Phase I Air makeup units | P52 | 1996 | 0.01 | 2.98 | |
| S04 | Line 1 Pouring/Mold Cooling (1) | P01 | 1996 (1998, 2007, 2011) | 0.01 | 0.17 | 0.17 |
| | Line 1 Cast Cooling (2) | P03 | 1996 (1998, 2007, 2011) | - | - | |

**Notes:**
(1) Line 1 Pouring/Mold Cooling is exhausting to stacks S01 and S04. 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 (with a total of 38 tons/hr for Line 1).
(2) Line 1 Cast Cooling is exhausting to stacks S01 and S04.

### D.2.4 PSD BACT for Volatile Organic Compounds (VOC) [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (PSD – BACT), CP 123-4593-00019 issued on January 19, 1996, CP 123-8451-00019 issued on February 4, 1998, Amendment 123-9740-00019 issued on May 22, 1998, PSD/SSM 123-29490-00019 issued on May 10, 2011, and PSD/SSM 123-33464-00019 issued on February 19, 2014, the Permittee shall comply with the following:

(a) The VOC emissions from the pouring/mold cooling and shakeout operations shall be controlled by a 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 | Year of Construction (Modification) | VOC Emission Limits for Individual Process (lb/ton) | VOC Emission Limit for Individual Process (lb/hr) | VOC Stack Limit (lb/hr) |
|---|---|---|---|---|---|---|
| S01 | Line 1 Pouring/Mold Cooling (1) | P01 | 1996 (1998, 2007, 2011) | 1.40 | 29.82 | 157.2 (combined for S01 and S04) |
| | Line 1 Shakeout | P02 | 1996 (1998, 2007, 2011) | | | |
| | Line 1 Cast Cooling (2) | P03 | 1996 (1998, 2007, 2011) | - | - | |
| | Line 1 Pick and Sort | P04 | 1996 (1998, 2007, 2011) | - | - | |
| | Line 2 Pouring/Mold Cooling | P06 | 1996 (2011) | 1.40 | 23.80 | |
| | Line 2 Shakeout | P07 | 1996 (2011) | | | |
| | Line 2 Cast Cooling | P08 | 1996 (2011) | - | - | |
| | Line 3 Pouring/Mold Cooling | P11 | 1996 (2011) | 1.40 | 23.80 | |
| | Line 3 Shakeout | P12 | 1996 (2011) | | | |
| | Line 3 Cast Cooling | P13 | 1996 (2011) | - | - | |
| | Line 4 Pouring/Mold Cooling | P16 | 1996 (2011, 2014) | 1.40 | 56.00 | |
| | Line 4 Shakeout | P17 | 1996 (2011, 2014) | | | |
| | Line 4 Cast Cooling | P18 | 1996 (2011, 2014) | - | - | |
| | Line 4 Pick and Sort | P19 | 1996 (2011, 2014) | - | - | |
| | Phase I Return Sand Handling/Screening | P21 | 1996 | - | - | |
| | Phase I Sand Cooling/Water Addition | P22 | 1996 | - | - | |
| | Phase I Sand Mulling/Handling | P23 | 1996 | - | - | |
| | Phase I Spent Sand Handling/Processing | P24 | 1996 | - | - | |
| | Phase I Air makeup units | P52 | 1996 | - | 0.40 | |
| S04 | Line 1 Pouring/Mold Cooling (1) | P01 | 1996 (1998, 2007, 2011) | 1.40 | 23.38 | |
| | Line 1 Cast Cooling (2) | P03 | 1996 (1998, 2007, 2011) | - | - | |

**Notes:**
(1) Line 1 Pouring/Mold Cooling is exhausting to stacks S01 and S04. 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 (with a total of 38 tons/hr for Line 1).
(2) Line 1 Cast Cooling is exhausting to stacks S01 and S04.

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

Pursuant to 326 IAC 2-2-3 (PSD – BACT), CP 123-4593-00019 issued on January 19, 1996, CP 123-8451-00019 issued on February 4, 1998, Amendment 123-9740-00019 issued on May 22, 1998, PSD/SSM 123-29490-00019 issued on May 10, 2011, and PSD/SSM 123-33464-00019 issued on February 19, 2014, the Permittee shall comply with the following:

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

(b) The carbon monoxide (CO) emissions from the following processes shall not exceed the

limits as shown in the table below:

| Stack ID | Process | Process ID | Year of Construction (Modification) | 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 (1) | P01 | 1996 (1998, 2007, 2011) | 5.00 | 106.5 | 606.7 |
| | Line 1 Shakeout | P02 | 1996 (1998, 2007, 2011) | 1.00 | 38 | |
| | Line 1 Cast Cooling (2) | P03 | 1996 (1998, 2007, 2011) | - | - | |
| | Line 1 Pick and Sort | P04 | 1996 (1998, 2007, 2011) | - | - | |
| | Line 2 Pouring/Mold Cooling | P06 | 1996 (2011) | 5.00 | 85 | |
| | Line 2 Shakeout | P07 | 1996 (2011) | 1.00 | 17 | |
| | Line 2 Cast Cooling | P08 | 1996 (2011) | - | - | |
| | Line 3 Pouring/Mold Cooling | P11 | 1996 (2011) | 5.00 | 85 | |
| | Line 3 Shakeout | P12 | 1996 (2011) | 1.00 | 17 | |
| | Line 3 Cast Cooling | P13 | 1996 (2011) | - | - | |
| | Line 4 Pouring/Mold Cooling | P16 | 1996 (2011, 2014) | 5.00 | 200 | |
| | Line 4 Shakeout | P17 | 1996 (2011, 2014) | 1.00 | 40 | |
| | Line 4 Cast Cooling | P18 | 1996 (2011, 2014) | - | - | |
| | Line 4 Pick and Sort | P19 | 1996 (2011, 2014) | - | - | |
| | Phase I Return Sand Handling/Screening | P21 | 1996 | - | - | |
| | Phase I Sand Cooling/Water Addition | P22 | 1996 | - | - | |
| | Phase I Sand Mulling/Handling | P23 | 1996 | - | - | |
| | Phase I Spent Sand Handling/Processing | P24 | 1996 | - | - | |
| | Phase I Air makeup units | P52 | 1996 | - | 18.2 | |
| S04 | Line 1 Pouring/Mold Cooling (1) | P01 | 1996 (1998, 2007, 2011) | 5.0 | 84.5 | 84.5 |
| | Line 1 Cast Cooling (2) | P03 | 1996 (1998, 2007, 2011) | - | - | |

**Notes:**
(1) Line 1 Pouring/Mold Cooling is exhausting to stacks S01 and S04. 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 (with a total of 38 tons/hr for Line 1).
(2) Line 1 Cast Cooling is exhausting to stacks S01 and S04.

### D.2.6 PSD BACT for Lead (Pb) [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (PSD – BACT), CP 123-4593-00019 issued on January 19, 1996, CP 123-8451-00019 issued on February 4, 1998, Amendment 123-9740-00019 issued on May 22, 1998, and PSD/SSM 123-25303-00019 issued on December 19, 2007, the lead (Pb) emissions from the following processes shall be controlled by a baghouse and shall not exceed the limits as shown in the table below:

| Stack ID | Process | Process ID | Year of Construction (Modification) | Control Device | Lead Stack Limit (lb/hr) |
|---|---|---|---|---|---|
| S01 | Line 1 Pouring/Mold Cooling (1) (4) | P01 | 1996 (1998, 2007, 2011) | Three (3) Baghouses (C01, C02, C03) | 0.32 |
| | Line 1 Shakeout (4) | P02 | 1996 (1998, 2007, 2011) | | |
| | Line 1 Cast Cooling (2) (4) | P03 | 1996 (1998, 2007, 2011) | | |
| | Line 1 Pick and Sort (4) | P04 | 1996 (1998, 2007, 2011) | | |
| | Line 2 Pouring/Mold Cooling (4) | P06 | 1996 (2011) | | |
| | Line 2 Shakeout (4) | P07 | 1996 (2011) | | |
| | Line 2 Cast Cooling (4) | P08 | 1996 (2011) | | |
| | Line 3 Pouring/Mold Cooling (4) | P11 | 1996 (2011) | | |
| | Line 3 Shakeout (4) | P12 | 1996 (2011) | | |
| | Line 3 Cast Cooling (4) | P13 | 1996 (2011) | | |
| | Line 4 Pouring/Mold Cooling (3) (4) | P16 | 1996 (2011, 2014) | | |
| | Line 4 Shakeout (3) (4) | P17 | 1996 (2011, 2014) | | |
| | Line 4 Cast Cooling (3) (4) | P18 | 1996 (2011, 2014) | | |
| | Line 4 Pick and Sort (3) (4) | P19 | 1996 (2011, 2014) | | |
| | Phase I Return Sand Handling/Screening | P21 | 1996 | | |
| | Phase I Sand Cooling/Water Addition | P22 | 1996 | | |
| | Phase I Sand Mulling/Handling | P23 | 1996 | | |
| | Phase I Spent Sand Handling/Processing | P24 | 1996 | | |
| | Phase I Air makeup units * | P52 | 1996 | | |
| S04 | Line 1 Pouring/Mold Cooling (1) (4) | P01 | 1996 (1998, 2007, 2011) | | 0.002 |
| | Line 1 Cast Cooling (2) (4) | P03 | 1996 (1998, 2007, 2011) | | |
| S07 | Line 1 Cleaning/Grinding (4) | P05 | 1996 (1998, 2007, 2011) | Baghouse (C07) | 0.008 |
| | Line 2 Pick and Sort (4) | P09 | 1996 (2011) | | |
| | Line 2 Cleaning/Grinding (4) | P10 | 1996 (2011) | | |
| | Line 3 Pick and Sort (4) | P14 | 1996 (2011) | | |
| | Line 3 Cleaning/Grinding (4) | P15 | 1996 (2011) | | |
| | Line 4 Cleaning/Grinding (3) (4) | P20 | 1996 (2011, 2014) | | |
| | Phase I Metallic Returns Handling | P25 | 1996 | | |

**Notes:**

* The Phase I Air makeup units (P52) are uncontrolled, but exhausting to Stack S01.

(1) Line 1 Pouring/Mold Cooling is exhausting to stacks S01 and S04

(2) Line 1 Cast Cooling is exhausting to stacks S01 and S04

(3) In accordance with the actual to projected actual (ATPA) analysis made in PSD/SSM 123-33464-00019, issued on May 10, 2011, there is 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).

(4) In accordance with the actual to projected actual (ATPA) analysis made in PSD/SSM 123-29490-00019, issued on May 10, 2011, there is no significant emissions increase for Lead due to the 2011 modification (constructing a new desulfurization ladle operation, as well as modifying the Phase I and Phase II cupolas, the ductile iron treatment stations #1 and #2, and the casting production lines 1 through 8).

### D.2.7 PSD BACT for Beryllium (Be) [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (PSD – BACT), CP 123-4593-00019 issued on January 19, 1996, CP

123-8451-00019 issued on February 4, 1998, Amendment 123-9740-00019 issued on May 22, 1998, and PSD/SSM 123-25303-00019 issued on December 19, 2007, the beryllium (Be) emissions from the following processes shall not exceed the limits as shown in the table below:

| Stack ID | Process | Process ID | Year of Construction (Modification) | Control Device | Beryllium Stack Limit (lb/hr) |
|---|---|---|---|---|---|
| S01 | Line 1 Pouring/Mold Cooling (1) (4) | P01 | 1996 (1998, 2007, 2011) | Three (3) Baghouses (C01, C02, C03) | 0.0006 |
| | Line 1 Shakeout (4) | P02 | 1996 (1998, 2007, 2011) | | |
| | Line 1 Cast Cooling (2) (4) | P03 | 1996 (1998, 2007, 2011) | | |
| | Line 1 Pick and Sort (4) | P04 | 1996 (1998, 2007, 2011) | | |
| | Line 2 Pouring/Mold Cooling (4) | P06 | 1996 (2011) | | |
| | Line 2 Shakeout (4) | P07 | 1996 (2011) | | |
| | Line 2 Cast Cooling (4) | P08 | 1996 (2011) | | |
| | Line 3 Pouring/Mold Cooling (4) | P11 | 1996 (2011) | | |
| | Line 3 Shakeout (4) | P12 | 1996 (2011) | | |
| | Line 3 Cast Cooling (4) | P13 | 1996 (2011) | | |
| | Line 4 Pouring/Mold Cooling (3) (4) | P16 | 1996 (2011, 2014) | | |
| | Line 4 Shakeout (3) (4) | P17 | 1996 (2011, 2014) | | |
| | Line 4 Cast Cooling (3) (4) | P18 | 1996 (2011, 2014) | | |
| | Line 4 Pick and Sort (3) (4) | P19 | 1996 (2011, 2014) | | |
| | Phase I Return Sand Handling/Screening | P21 | 1996 | | |
| | Phase I Sand Cooling/Water Addition | P22 | 1996 | | |
| | Phase I Sand Mulling/Handling | P23 | 1996 | | |
| | Phase I Spent Sand Handling/Processing | P24 | 1996 | | |
| | Phase I Air makeup units * | P52 | 1996 | | |
| S04 | Line 1 Pouring/Mold Cooling (1) (4) | P01 | 1996 (1998, 2007, 2011) | Three (3) Baghouses (C01, C02, C03) | 0.00003 |
| | Line 1 Cast Cooling (2) (4) | P03 | 1996 (1998, 2007, 2011) | | |
| S07 | Line 1 Cleaning/Grinding (4) | P05 | 1996 (1998, 2007, 2011) | Baghouse (C07) | 0.00016 |
| | Line 2 Pick and Sort (4) | P09 | 1996 (2011) | | |
| | Line 2 Cleaning/Grinding (4) | P10 | 1996 (2011) | | |
| | Line 3 Pick and Sort (4) | P14 | 1996 (2011) | | |
| | Line 3 Cleaning/Grinding (4) | P15 | 1996 (2011) | | |
| | Line 4 Cleaning/Grinding (3) (4) | P20 | 1996 (2011, 2014) | | |
| | Phase I Metallic Returns Handling | P25 | 1996 | | |

**Notes:**

* The Phase I Air makeup units (P52) are uncontrolled, but exhausting to Stack S01.

(1) Line 1 Pouring/Mold Cooling is exhausting to stacks S01 and S04

(2) Line 1 Cast Cooling is exhausting to stacks S01 and S04

(3) In accordance with the actual to projected actual (ATPA) analysis made in PSD/SSM 123-33464-00019, issued on May 10, 2011, there is 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).

(4) In accordance with the actual to projected actual (ATPA) analysis made in PSD/SSM 123-29490-00019, issued on May 10, 2011, there is no significant emissions increase for Lead due to the 2011 modification (constructing a new desulfurization ladle operation, as well as modifying the Phase I and Phase II cupolas, the ductile iron

treatment stations #1 and #2, and the casting production lines 1 through 8).

D.2.8 PSD BACT Operating Requirements [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (PSD – BACT), CP 123-8451-00019 issued on February 4, 1998, and PSD/SSM 123-29490-00019 issued on May 10, 2011, the Permittee shall comply with the following:

(a) The total sand throughput to the Phase I Return Sand Handling/Screening, identified as P21, shall not exceed 522 tons of sand per hour.

(b) The total sand throughput to the Phase I Sand Cooling/Water Addition, identified as P22, shall not exceed 522 tons of sand per hour.

(c) The total sand throughput to the Phase I Sand Mulling/Handling, identified as P23, shall not exceed 522 tons of sand per hour.

D.2.9 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventative Maintenance Plan is required for these facilities and their control devices. Section B – Preventive Maintenance Plan contains the Permittee's obligation 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) In order to determine compliance with Conditions D.2.1, D.2.6, and D.2.7, within ninety (90) days after the issuance of Part 70 Renewal No. T123-33768-00019, the Permittee shall perform PM, opacity, lead (Pb), and beryllium (Be) testing on the facilities exhausting to stacks S01, S04 and S07, 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.

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) In order to determine compliance with the total stack limits in Conditions D.2.2, D.2.3, D.2.4, and D.2.5, within ninety (90) days after the issuance of Part 70 Renewal No. T123-33768-00019, the Permittee shall perform SO2, NOx, VOC, and CO testing on the emission units exhausting to stacks S01 and S04 simultaneously using Method 25, 25A, or other methods approved by the Commissioner.

These tests shall be repeated at least once every five (5) years from the date of this 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.

If the VOC emissions normally exhausted to S04 are directed to S01 during the stack test, then only S01 is required to be tested.

(c) In order to determine compliance with Conditions D.2.1(a), D.2.6,and D.2.7, the Permittee shall perform PM, lead and beryllium testing for stack S01 and stack S07, no later than 180 days after the initial start up of the modification of Line 4 (approved in 2014).

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 determine compliance with Conditions D.2.2, D.2.3, D.2.4, and D.2.5, the Permittee shall perform SO2, NOx, VOC, and CO testing for Line 4, no later than 180 days after the initial start up of the modification of Line 4 (approved in 2014).

These tests shall be repeated at least once every five (5) years from the date of the last valid compliance demonstration.

(e) 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.2.11 Particulate Matter and Metal HAPs Control

(a) In order to comply with Conditions D.2.1, D.2.6, and D.2.7, the Baghouses C01, C02, C03, and C07 for particulate and metal HAPs control shall be in operation at all times whenever the operations exhausting to these baghouses are in operation.

(b) 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.

(c) 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.

(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 4 ladle cleaning operation, identified as P86B, is in operation.

(e) In the event that a bag or cartridge failure is observed in a multi-compartment bag or cartridge filter, 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.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 the Lines 1-4 pouring/mold cooling and shakeout operations:

(a) The Permittee shall operate the mold vent off gas ignition system for Lines 1-4 pouring/mold cooling and shakeout operations 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 Permittee submitted the mold vent ignition operation and maintenance plan in 2007.

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]

Pursuant to 40 CFR 64,

(a) Daily visible emission notations of the Baghouses C01, C02, C03 stack exhausts (S01 and S04) and of the Baghouse C07 stack exhaust (S07) shall be performed during normal daylight operations. 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. Section C – Response to Excursions and Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. Failure to take response steps shall be considered a deviation from this permit.

D.2.14 Baghouse Parametric Monitoring [40 CFR 64]

Pursuant to 40 CFR 64,

(a) The Permittee shall record the pressure drop across the Baghouses C01, C02, and C03, at least once per day when the processes exhausting to these baghouses are in operation. When for any one reading, the pressure drop across the dust collector is outside the normal range, the Permittee shall take reasonable response steps. The normal range for this unit is a pressure drop between 1.0 and 10.0 inches of water unless a different upper-bound or lower-bound value for this range is determined during the latest stack test. Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps 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) 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).

D.2.15 Broken or Failed Bag Detection [40 CFR 64]

Pursuant to 40 CFR 64, in the event that bag failure has been observed:

(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 emissions unit. 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 the compliance status with Condition D.2.8, the Permittee shall maintain records of the hourly sand throughput to the Phase I Return Sand Handling/Screening (P21), Phase I Sand Cooling/Water Addition (P22), and Phase I Sand Mulling/Handling

(P23) operations. Records shall be taken daily and shall be complete and sufficient to establish compliance with the sand input limits established in Condition D.2.8.

(b) To document the compliance status with Condition D.2.13, 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 a visible emission notation, (i.e. the process did not operate that day).

(c) To document the compliance status with Condition D.2.14(a), 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 a pressure drop reading, (i.e. the process did not operate that day).

(d) To document the compliance status with Condition D.2.14(b), the Permittee shall keep a log of the zero drift checks and response tests for the Baghouse C07 leak detector.

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

**SECTION D.3 EMISSIONS UNIT OPERATION CONDITIONS**

**Emissions Unit Description: Stacks 15 & 16**

Phase I Sand Handling & Ancillary Operations

(c) Sand handling operations and ancillary operations, consisting of the following:

Phase I Ladle Operations

(11) One (1) Phase I ladle preheating operation, identified as P53B, constructed in 1996, with a maximum heat input capacity of 11.5 MMBtu per hour, combusting natural gas, utilizing no control, and exhausting to stack S15;

Phase I Ancillary Operations

(20) One (1) Phase I autogrinder operation, 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;

Phase II Casting & Finishing

(e) Four (4) Phase II production lines, consisting of the following:

(1) Line 5 (constructed in 1998, and modified in 2011)

(A) One (1) Line 5 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) Line 5 shakeout operation, identified as P61, with a maximum throughput 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) Line 5 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;

Under 40 CFR 63, Subpart EEEEE (NESHAP for Iron and Steel Foundries) the Phase II Line 5 pouring/mold cooling, shakeout, and cast cooling operations are affected facilities.

The shakeout and cast cooling operations do not have specific applicable requirements under this NESHAP for existing affected facilities..

(D) One (1) Line 5 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) Line 5 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 (constructed in 1998, and modified in 2011)

(A) One (1) Line 6 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) Line 6 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) Line 6 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;

Under 40 CFR 63, Subpart EEEEE (NESHAP for Iron and Steel Foundries) the Phase II Line 6 pouring/mold cooling, shakeout, and cast cooling operations are affected facilities.

The shakeout and cast cooling operations do not have specific applicable requirements under this NESHAP for existing affected facilities.

(D) One (1) Line 6 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) Line 6 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 (constructed in 1998, and modified in 2011)

(A) One (1) Line 7 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) Line 7 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) Line 7 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;

Under 40 CFR 63, Subpart EEEEE (NESHAP for Iron and Steel Foundries) the Phase II Line 7 pouring/mold cooling, shakeout, and cast cooling operations are affected facilities.

The shakeout and cast cooling operations do not have specific applicable requirements under this NESHAP for existing affected facilities.

(D) One (1) Line 7 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) Line 7 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 (constructed in 1998, and modified in 2011)

(A) One (1) Line 8 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) Line 8 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) Line 8 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;

Under 40 CFR 63, Subpart EEEEE (NESHAP for Iron and Steel Foundries) the Phase II Line 8 pouring/mold cooling, shakeout, and cast cooling operations are affected facilities.

The shakeout and cast cooling operations do not have specific applicable requirements under this NESHAP for existing affected facilities.

(D) One (1) Line 8 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;

(E) One (1) Line 8 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 & Ancillary Operations

(f) Sand handling operations and ancillary operations, consisting of the following:

Phase II Sand Handling

(1) One (1) return sand handling and screening operation, identified as P80, constructed in 1998 and modified in 2011, 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, constructed in 1998 and modified in 2011, 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, constructed in 1998 and modified in 2011, 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, constructed in 1998 and modified in 2011, 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;

Phase II Furnace Material Handling

(5) One (1) metal returns handling operation, identified as P84, constructed in 1998 and modified in 2011, 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;

Phase II Ductile Iron Treatment

(14) One (1) Phase II Ductile Iron Treatment Ladle Cleaning, constructed in 1998, 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;

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.

(15) Two (2) ductile iron treatment stations, both identified as P35, constructed in 1998 and modified in 2011, 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;

Phase II Ancillary Operations

(19) Natural gas fired air make-up units, constructed in 1998, 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) Tumbleblast shotblast machine, identified as P55, constructed in 2001, with a maximum capacity of 20 tons of metal castings per hour, with emissions controlled by existing baghouse C15, and 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) Pursuant to 326 IAC 2-2-3 (PSD – BACT), CP 123-4593-00019 issued on January 19, 1996, CP 123-8451-00019 issued on February 4, 1998, PSD/SSM 123-12331-00019 issued on January 31, 2001, PSD/SSM 123-11479-00019 issued on June 7, 2001, and PSD/SSM 123-29490-00019 issued on May 10, 2011, the PM emissions from the following processes shall not exceed the limits as shown in the table below:

| Stack ID | Process | Process ID | Year of Construction (Modification) | Control Device | Particulate Emission Limitation for stack (gr/dscf) | PM Stack Limit (lb/hr) |
|---|---|---|---|---|---|---|
| S15 | Line 5 Pouring/Mold Cooling (2) | P60 | 1998 (2011) | Baghouse (C15) | 0.005 | 30.9 |
| | Line 5 Shakeout (2) (3) | P61 | 1998 (2011) | | | |
| | Line 5 Cast Cooling(2) | P62 | 1998 (2011) | | | |
| | Line 6 Pouring/Mold Cooling (2) | P65 | 1998 (2011) | | | |
| | Line 6 Shakeout (2) (4) | P66 | 1998 (2011) | | | |
| | Line 6 Cast Cooling (2) (5) | P67 | 1998 (2011) | | | |
| | Line 7 Pouring/Mold Cooling (2) | P70 | 1998 (2011) | | | |
| | Line 7 Shakeout (2) (6) | P71 | 1998 (2011) | | | |
| | Line 7 Cast Cooling (2) (7) | P72 | 1998 (2011) | | | |
| | Line 8 Pouring/Mold Cooling (2) | P75 | 1998 (2011) | | | |
| | Phase II Return Sand Handling/Screening (2) (8) | P80 | 1998 (2011) | | | |
| | Phase II Sand Mulling and Handling (2) | P81 | 1998 (2011) | | | |
| | Phase II Sand Blending and Cooling (2) | P82 | 1998 (2011) | | | |
| | Phase II Spent Sand and Dust Handling (2) | P83 | 1998 (2011) | | | |
| | Phase II Metal Returns Handling System (2) (9) | P84 | 1998 (2011) | | | |
| | Tumbleblast shotblast machine | P55 | 2001 | | | |
| | Phase II Ductile Iron Treatment Ladle Cleaning (1) | n/a | 1998 (2011) | | | |
| | Phase II two (2) ductile iron treatment stations (2) | P35 | 1998 (2001, 2011) | Baghouses C15 and C35 | | |
| | Phase II Ladle Preheating (1) | P53B | 1996 | No control | | |
| | Phase II air make-up units (1) | P54 | 1998 (2011) | No control | | |

| Stack ID | Process | Process ID | Year of Construction (Modification) | Control Device | Particulate Emission Limitation for stack (gr/dscf) | PM Stack Limit (lb/hr) |
|---|---|---|---|---|---|---|
| S16 | Line 5 Shakeout (2)(3) | P61 | 1998 (2011) | Baghouse (C16) | 0.005 | 17.2 |
| | Line 5 Pick and Sort (2) | P63 | 1998 (2011) | | | |
| | Line 5 Cleaning/ Grinding (2) | P64 | 1998 (2011) | | | |
| | Line 6 Shakeout (2) (4) | P66 | 1998 (2011) | | | |
| | Line 6 Cast Cooling (2)(5) | P67 | 1998 (2011) | | | |
| | Line 6 Pick and Sort (2) | P68 | 1998 (2011) | | | |
| | Line 6 Cleaning/ Grinding (2) | P69 | 1998 (2011) | | | |
| | Line 7 Shakeout (2) (6) | P71 | 1998 (2011) | | | |
| | Line 7 Cast Cooling (2) (7) | P72 | 1998 (2011) | | | |
| | Line 7 Pick and Sort (2) | P73 | 1998 (2011) | | | |
| | Line 7 Cleaning/ Grinding (2) | P74 | 1998 (2011) | | | |
| | Line 8 Shakeout (2) | P76 | 1998 (2011) | | | |
| | Line 8 Cast Cooling (2) | P77 | 1998 (2011) | | | |
| | Line 8 Pick and Sort (2) | P78 | 1998 (2011) | | | |
| | Line 8 Cleaning/ Grinding (2) | P79 | 1998 (2011) | | | |
| | Phase II Return Sand Handling/Screening (2) (8) | P80 | 1998 (2011) | | | |
| | Phase II Metal Returns Handling System (2) (9) | P84 | 1998 (2011) | | | |
| | Phase I Autogrinder (10) | P87 | 2008 | | | |

**Notes:**

(1) Also exhausting to Stack S15, utilizing no control device, are the Phase II Ladle Preheating (P53B) and Phase II air make-up units (P54). Stack S15 also includes portions of the Phase II Ductile Iron Treatment Ladle Cleaning. For the Phase II Ductile Iron Treatment Ladle Cleaning - the ductile treatment operation includes locations where treatment occurs and iron is transferred. Fumes in the treatment area are captured but those in the metal transfer area are not. Burn bar usage for this operation has been split 25/75 to allow separate emission estimates for the captured emissions (Baghouse C15) versus emissions exhausting indoors.

(2) In accordance with the actual to projected actual (ATPA) analysis made in PSD/SSM 123-29490-00019, issued on May 10, 2011, there is no significant emissions increase for PM10 and PM2.5 due to the 2011 modification (constructing a new desulfurization ladle operation, as well as modifying the Phase I and Phase II cupolas, the ductile iron treatment stations #1 and #2, and the casting production lines 1 through 8).

(3) Line 5 Shakeout exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)

(4) Line 6 Shakeout exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)

(5) Line 6 Cast Cooling exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)

(6) Line 7 Shakeout exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)

(7) Line 7 Cast Cooling exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)

(8) Phase II Return Sand Handling/Screening exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)

(9) Phase II Metal Returns Handling System exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)

(10) See Condition D.3.9 for PSD Minor limit for PM and PM10.

(b) Pursuant to 326 IAC 2-2-3 (PSD – BACT) and CP 123-4593-00019 issued on January 19, 1996, visible emissions from any baghouse stack shall not exceed ten percent (10%) opacity.

D.3.2 PSD BACT for Sulfur Dioxide (SO2) [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (PSD – BACT), CP 123-8451-00019 issued on February 4, 1998, Amendment 123-9740-00019 issued on May 22, 1998, and PSD/SSM 123-29490-00019 issued on May 10, 2011, the sulfur dioxide ($SO_2$) emissions from the following processes shall not exceed the limits as shown in the table below:

| Stack ID | Process | Process ID | Year of Construction (Modification) | SO2 Emission Limits for Individual Process (lb/ton) | SO2 Emission Limits for Individual Process (lb/hr) | SO2 Stack Limit (lb/hr) |
|---|---|---|---|---|---|---|
| S15 | Line 5 Pouring/Mold Cooling | P60 | 1998 (2011) | 0.02 | 0.56 | 2.02 |
| | Line 5 Shakeout | P61 | 1998 (2011) | - | - | |
| | Line 5 Cast Cooling | P62 | 1998 (2011) | - | - | |
| | Line 6 Pouring/Mold Cooling | P65 | 1998 (2011) | 0.02 | 0.40 | |
| | Line 6 Shakeout | P66 | 1998 (2011) | - | - | |
| | Line 6 Cast Cooling | P67 | 1998 (2011) | - | - | |
| | Line 7 Pouring/Mold Cooling | P70 | 1998 (2011) | 0.02 | 0.66 | |
| | Line 7 Shakeout | P71 | 1998 (2011) | - | - | |
| | Line 7 Cast Cooling | P72 | 1998 (2011) | - | - | |
| | Line 8 Pouring/Mold Cooling | P75 | 1998 (2011) | 0.02 | 0.40 | |
| | Phase II Return Sand Handling/Screening | P80 | 1998 (2011) | - | - | |
| | Phase II Sand Mulling and Handling | P81 | 1998 (2011) | - | - | |
| | Phase II Sand Blending and Cooling | P82 | 1998 (2011) | - | - | |
| | Phase II Spent Sand and Dust Handling | P83 | 1998 (2011) | - | - | |
| | Phase II Metal Returns Handling System | P84 | 1998 (2011) | - | - | |
| | Tumbleblast shotblast machine | P55 | 2001 | - | - | |
| | Phase II Ductile Iron Treatment Ladle Cleaning | n/a | 1998 (2011) | - | - | |
| | Phase II two (2) ductile iron treatment stations | P35 | 1998 (2001, 2011) | - | - | |
| | Phase II Ladle Preheating | P53B | 1996 | - | - | |
| | Phase II air make-up units | P54 | 1998 (2011) | - | - | |

D.3.3 PSD BACT for Nitrogen Oxide (NOx) [326 IAC 2-2-3]

(a) Pursuant to 326 IAC 2-2-3 (PSD – BACT), CP 123-8451-00019 issued on February 4, 1998, Amendment 123-9740-00019 issued May 22, 1998, and PSD/SSM 123-29490-00019 issued on May 10, 2011, the (NOx) emissions from the following processes shall not exceed the limits as shown in the table below:

| Stack ID | Process | Process ID | Year of Construction (Modification) | NOx Emission Limits for Individual Process (lb/ton) | NOx Emission Limits for Individual Process (lb/hr) | NOx Stack Limit (lb/hr) |
|---|---|---|---|---|---|---|
| S15 | Line 5 Pouring/Mold Cooling | P60 | 1998 (2011) | 0.01 | 0.28 | 1.01 |
| | Line 5 Shakeout | P61 | 1998 (2011) | - | - | |
| | Line 5 Cast Cooling | P62 | 1998 (2011) | - | - | |
| | Line 6 Pouring/Mold Cooling | P65 | 1998 (2011) | 0.01 | 0.20 | |
| | Line 6 Shakeout | P66 | 1998 (2011) | - | - | |
| | Line 6 Cast Cooling | P67 | 1998 (2011) | - | - | |
| | Line 7 Pouring/Mold Cooling | P70 | 1998 (2011) | 0.01 | 0.33 | |
| | Line 7 Shakeout | P71 | 1998 (2011) | - | - | |
| | Line 7 Cast Cooling | P72 | 1998 (2011) | - | - | |
| | Line 8 Pouring/Mold Cooling | P75 | 1998 (2011) | 0.01 | 0.20 | |
| | Phase II Return Sand Handling/Screening | P80 | 1998 (2011) | - | - | |
| | Phase II Sand Mulling and Handling | P81 | 1998 (2011) | - | - | |
| | Phase II Sand Blending and Cooling | P82 | 1998 (2011) | - | - | |
| | Phase II Spent Sand and Dust Handling | P83 | 1998 (2011) | - | - | |
| | Phase II Metal Returns Handling System | P84 | 1998 (2011) | - | - | |
| | Tumbleblast shotblast machine | P55 | 2001 | - | - | |
| | Phase II Ductile Iron Treatment Ladle Cleaning | n/a | 1998 (2011) | - | - | |
| | Phase II two (2) ductile iron treatment stations | P35 | 1998 (2001, 2011) | - | - | |
| | Phase II Ladle Preheating | P53B | 1996 | - | - | |
| | Phase II air make-up units | P54 | 1998 (2011) | - | - | |

(b) Pursuant to 326 IAC 2-2-3 (PSD – BACT) and CP 123-8451-00019 issued on February 4, 1998, the Phase II 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.3.4 PSD BACT for Volatile Organic Compounds (VOC) [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (PSD – BACT), CP 123-8451-00019 issued on February 4, 1998, Amendment 123-9740-00019 issued on May 22, 1998, and PSD/SSM 123-29490-00019 issued on May 10, 2011, the Permittee shall comply with the following:

(a) The VOC emissions from the pouring/mold cooling and shakeout operations shall be controlled by a 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 | Year of Construction (Modification) | VOC Emission Limits for Individual Process (lb/ton) | VOC Stack Limit (lb/hr) |
|---|---|---|---|---|---|
| S15 | Line 5 Pouring/Mold Cooling | P60 | 1998 (2011) | 1.4 | 141.4 (combined for S15 and S16) |
| | Line 5 Shakeout (3) | P61 | 1998 (2011) | | |
| | Line 5 Cast Cooling | P62 | 1998 (2011) | - | |
| | Line 6 Pouring/Mold Cooling | P65 | 1998 (2011) | 1.4 | |
| | Line 6 Shakeout (4) | P66 | 1998 (2011) | | |
| | Line 6 Cast Cooling (5) | P67 | 1998 (2011) | - | |
| | Line 7 Pouring/Mold Cooling | P70 | 1998 (2011) | 1.4 | |
| | Line 7 Shakeout (6) | P71 | 1998 (2011) | | |
| | Line 7 Cast Cooling (7) | P72 | 1998 (2011) | - | |
| | Line 8 Pouring/Mold Cooling | P75 | 1998 (2011) | 1.4 | |
| | Phase II Return Sand Handling/Screening (8) | P80 | 1998 (2011) | - | |
| | Phase II Sand Mulling and Handling | P81 | 1998 (2011) | - | |
| | Phase II Sand Blending and Cooling | P82 | 1998 (2011) | - | |
| | Phase II Spent Sand and Dust Handling | P83 | 1998 (2011) | - | |
| | Phase II Metal Returns Handling System (9) | P84 | 1998 (2011) | - | |
| | Tumbleblast shotblast machine | P55 | 2001 | - | |
| | Phase II Ductile Iron Treatment Ladle Cleaning (1) | n/a | 1998 (2011) | - | |
| | Phase II two (2) ductile iron treatment stations | P35 | 1998 (2001, 2011) | - | |
| | Phase II Ladle Preheating (1) | P53B | 1996 | - | |
| | Phase II air make-up units (1) | P54 | 1998 (2011) | - | |
| S16 | Line 5 Shakeout (3) | P61 | 1998 (2011) | 1.4 | |
| | Line 5 Pick and Sort | P63 | 1998 (2011) | - | |
| | Line 5 Cleaning/ Grinding | P64 | 1998 (2011) | - | |
| | Line 6 Shakeout (4) | P66 | 1998 (2011) | 1.4 | |
| | Line 6 Cast Cooling 5) | P67 | 1998 (2011) | - | |
| | Line 6 Pick and Sort | P68 | 1998 (2011) | - | |
| | Line 6 Cleaning/ Grinding (2) | P69 | 1998 (2011) | - | |
| | Line 7 Shakeout (6) | P71 | 1998 (2011) | 1.4 | |
| | Line 7 Cast Cooling (7) | P72 | 1998 (2011) | - | |
| | Line 7 Pick and Sort | P73 | 1998 (2011) | - | |
| | Line 7 Cleaning/ Grinding | P74 | 1998 (2011) | - | |
| | Line 8 Shakeout | P76 | 1998 (2011) | 1.4 | |
| | Line 8 Cast Cooling | P77 | 1998 (2011) | - | |
| | Line 8 Pick and Sort | P78 | 1998 (2011) | - | |
| | Line 8 Cleaning/ Grinding | P79 | 1998 (2011) | - | |
| | Phase II Return Sand Handling/Screening (8) | P80 | 1998 (2011) | - | |
| | Phase II Metal Returns Handling System (9) | P84 | 1998 (2011) | - | |
| | Phase I Autogrinder | P87 | 2008 | - | |

**Notes:**

(1) Also exhausting to Stack S15, utilizing no control device, are the Phase II Ladle Preheating (P53B) and Phase II air make-up units (P54). Stack S15 also includes portions of the Phase II Ductile Iron Treatment Ladle Cleaning.

(2) *Reserved.*

(3) Line 5 Shakeout exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(4) Line 6 Shakeout exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(5) Line 6 Cast Cooling exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(6) Line 7 Shakeout exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(7) Line 7 Cast Cooling exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(8) Phase II Return Sand Handling/Screening exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(9) Phase II Metal Returns Handling System exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)

### D.3.5 PSD BACT for Carbon Monoxide (CO) [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (PSD – BACT), CP 123-8451-00019 issued on February 4, 1998, Amendment 123-9740-00019 issued May 22, 1998, and PSD/SSM 123-29490-00019 issued on May 10, 2011, the Permittee shall comply with the following:

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

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

| Stack ID | Process | Process ID | Year of Construction (Modification) | CO Emission Limits for Individual Process (lb/ton) | CO Stack Limit (lb/hr) |
|---|---|---|---|---|---|
| S15 | Line 5 Pouring/Mold Cooling | P60 | 1998 (2011) | 5.0 | 546 |
| | Line 5 Shakeout (3) | P61 | 1998 (2011) | 1.0 | |
| | Line 5 Cast Cooling | P62 | 1998 (2011) | - | |
| | Line 6 Pouring/Mold Cooling | P65 | 1998 (2011) | 5.0 | |
| | Line 6 Shakeout (4) | P66 | 1998 (2011) | 1.0 | |
| | Line 6 Cast Cooling (5) | P67 | 1998 (2011) | - | |
| | Line 7 Pouring/Mold Cooling | P70 | 1998 (2011) | 5.0 | |
| | Line 7 Shakeout (6) | P71 | 1998 (2011) | 1.0 | |
| | Line 7 Cast Cooling (7) | P72 | 1998 (2011) | - | |
| | Line 8 Pouring/Mold Cooling | P75 | 1998 (2011) | 5.0 | |
| | Phase II Return Sand Handling/Screening (8) | P80 | 1998 (2011) | - | |
| | Phase II Sand Mulling and Handling | P81 | 1998 (2011) | - | |
| | Phase II Sand Blending and Cooling | P82 | 1998 (2011) | - | |
| | Phase II Spent Sand and Dust Handling | P83 | 1998 (2011) | - | |
| | Phase II Metal Returns Handling System (9) | P84 | 1998 (2011) | - | |
| | Tumbleblast shotblast machine | P55 | 2001 | - | |
| | Phase II Ductile Iron Treatment Ladle Cleaning (1) | n/a | 1998 (2011) | - | |
| | Phase II two (2) ductile iron treatment stations | P35 | 1998 (2001, 2011) | - | |
| | Phase II Ladle Preheating (1) | P53B | 1996 | - | |
| | Phase II air make-up units (1) | P54 | 1998 (2011) | - | |

| Stack ID | Process | Process ID | Year of Construction (Modification) | CO Emission Limits for Individual Process (lb/ton) | CO Stack Limit (lb/hr) |
|---|---|---|---|---|---|
| S16 | Line 5 Shakeout (3) | P61 | 1998 (2011) | 1.0 | 60 |
| | Line 5 Pick and Sort | P63 | 1998 (2011) | - | |
| | Line 5 Cleaning/ Grinding | P64 | 1998 (2011) | - | |
| | Line 6 Shakeout (4) | P66 | 1998 (2011) | 1.0 | |
| | Line 6 Cast Cooling 5) | P67 | 1998 (2011) | - | |
| | Line 6 Pick and Sort | P68 | 1998 (2011) | - | |
| | Line 6 Cleaning/ Grinding (2) | P69 | 1998 (2011) | - | |
| | Line 7 Shakeout (6) | P71 | 1998 (2011) | 1.0 | |
| | Line 7 Cast Cooling (7) | P72 | 1998 (2011) | - | |
| | Line 7 Pick and Sort | P73 | 1998 (2011) | - | |
| | Line 7 Cleaning/ Grinding | P74 | 1998 (2011) | - | |
| | Line 8 Shakeout | P76 | 1998 (2011) | 1.0 | |
| | Line 8 Cast Cooling | P77 | 1998 (2011) | - | |
| | Line 8 Pick and Sort | P78 | 1998 (2011) | - | |
| | Line 8 Cleaning/ Grinding | P79 | 1998 (2011) | - | |
| | Phase II Return Sand Handling/Screening (8) | P80 | 1998 (2011) | - | |
| | Phase II Metal Returns Handling System (9) | P84 | 1998 (2011) | - | |
| | Phase I Autogrinder | P87 | 2008 | - | |

**Notes:**
(1) Also exhausting to Stack S15, utilizing no control device, are the Phase II Ladle Preheating (P53B) and Phase II air make-up units (P54). Stack S15 also includes portions of the Phase II Ductile Iron Treatment Ladle Cleaning.
(2) *Reserved.*
(3) Line 5 Shakeout exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(4) Line 6 Shakeout exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(5) Line 6 Cast Cooling exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(6) Line 7 Shakeout exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(7) Line 7 Cast Cooling exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(8) Phase II Return Sand Handling/Screening exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(9) Phase II Metal Returns Handling System exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)

### D.3.6 PSD BACT for Lead (Pb) [326 IAC 2-2-3]

(a) Pursuant to 326 IAC 2-2-3 (PSD – BACT), CP 123-8451-00019 issued on February 4, 1998, Amendment 123-9740-00019 issued on May 22, 1998, PSD/SSM 123-12331-00019 issued on January 31, 2001, and PSD/SSM 123-25303-00019 issued on December 19, 2007, the lead (Pb) emissions from the following operations shall be controlled by a baghouse and shall not exceed the limits as shown in the table below:

| Stack ID | Process | Process ID | Year of Construction (Modification) | Control Device | Lead (Pb) Stack Limit (lb/hr) |
|---|---|---|---|---|---|
| S15 | Line 5 Pouring/Mold Cooling | P60 | 1998 (2011) | Baghouse (C15) | 0.035 |
| | Line 5 Shakeout (3) | P61 | 1998 (2011) | | |
| | Line 5 Cast Cooling | P62 | 1998 (2011) | | |
| | Line 6 Pouring/Mold Cooling | P65 | 1998 (2011) | | |
| | Line 6 Shakeout (4) | P66 | 1998 (2011) | | |
| | Line 6 Cast Cooling (5) | P67 | 1998 (2011) | | |
| | Line 7 Pouring/Mold Cooling | P70 | 1998 (2011) | | |
| | Line 7 Shakeout (6) | P71 | 1998 (2011) | | |
| | Line 7 Cast Cooling (7) | P72 | 1998 (2011) | | |
| | Line 8 Pouring/Mold Cooling | P75 | 1998 (2011) | | |
| | Phase II Return Sand Handling/Screening (8) | P80 | 1998 (2011) | | |
| | Phase II Sand Mulling and Handling | P81 | 1998 (2011) | | |
| | Phase II Sand Blending and Cooling | P82 | 1998 (2011) | | |
| | Phase II Spent Sand and Dust Handling | P83 | 1998 (2011) | | |
| | Phase II Metal Returns Handling System (9) | P84 | 1998 (2011) | | |
| | Tumbleblast shotblast machine | P55 | 2001 | | |
| | Phase II Ductile Iron Treatment Ladle Cleaning (1) | n/a | 1998 (2011) | | |
| | Phase II two (2) ductile iron treatment stations (2) | P35 | 1998 (2001, 2011) | Baghouses C15 and C35 | |
| | Phase II Ladle Preheating (1) | P53B | 1996 | No control | |
| | Phase II air make-up units (1) | P54 | 1998 (2011) | No control | |
| S16 | Line 5 Shakeout (3) | P61 | 1998 (2011) | Baghouse (C16) | 0.018 |
| | Line 5 Pick and Sort | P63 | 1998 (2011) | | |
| | Line 5 Cleaning/ Grinding | P64 | 1998 (2011) | | |
| | Line 6 Shakeout (4) | P66 | 1998 (2011) | | |
| | Line 6 Cast Cooling 5) | P67 | 1998 (2011) | | |
| | Line 6 Pick and Sort | P68 | 1998 (2011) | | |
| | Line 6 Cleaning/ Grinding (2) | P69 | 1998 (2011) | | |
| | Line 7 Shakeout (6) | P71 | 1998 (2011) | | |
| | Line 7 Cast Cooling (7) | P72 | 1998 (2011) | | |
| | Line 7 Pick and Sort | P73 | 1998 (2011) | | |
| | Line 7 Cleaning/ Grinding | P74 | 1998 (2011) | | |
| | Line 8 Shakeout | P76 | 1998 (2011) | | |
| | Line 8 Cast Cooling | P77 | 1998 (2011) | | |
| | Line 8 Pick and Sort | P78 | 1998 (2011) | | |
| | Line 8 Cleaning/ Grinding | P79 | 1998 (2011) | | |
| | Phase II Return Sand Handling/Screening (8) | P80 | 1998 (2011) | | |
| | Phase II Metal Returns Handling System (9) | P84 | 1998 (2011) | | |
| | Phase I Autogrinder | P87 | 2008 | | |

**Notes:**
(1) Also exhausting to Stack S15, utilizing no control device, are the Phase II Ladle Preheating (P53B) and Phase II air make-up units (P54). Stack S15 also includes portions of the Phase II Ductile Iron Treatment Ladle Cleaning.
(2) The Phase II two (2) ductile iron treatment stations have an additional BACT limit, determined with PSD/SSM 123-29490-00019 issued on May 10, 2011. See below.
(3) Line 5 Shakeout exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(4) Line 6 Shakeout exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(5) Line 6 Cast Cooling exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(6) Line 7 Shakeout exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(7) Line 7 Cast Cooling exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(8) Phase II Return Sand Handling/Screening exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(9) Phase II Metal Returns Handling System exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)

(b) Pursuant to 326 IAC 2-2-3 (PSD – BACT) and PSD/SSM 123-29490-00019 issued on May 10, 2011, the following limit is determined as Best Available Control Technology (BACT) for lead (Pb) for the Phase II two (2) ductile iron treatment stations, identified as P35, controlled by Baghouses C15 and C35, exhausting through stack S15:

(1) The lead (Pb) emissions from the Phase II two (2) ductile iron treatment stations, identified as P35, shall be controlled by a fabric filter baghouse

(2) The lead (Pb) emissions after control from the Phase II two (2) ductile iron treatment stations, identified as P35, shall not exceed 1,000 ppm.

(3) The lead (Pb) emissions after control from the Phase II two (2) ductile iron treatment stations, identified as P35, shall not exceed 0.0047 pounds per hour.

D.3.7 PSD BACT for Beryllium (Be) [326 IAC 2-2-3]

(a) Pursuant to 326 IAC 2-2-3 (PSD – BACT), CP 123-8451-00019 issued on February 4, 1998, Amendment 123-9740-00019 issued on May 22, 1998, PSD/SSM 123-12331-00019 issued on January 31, 2001, and PSD/SSM 123-25303-00019 issued on December 19, 2007, the beryllium (Be) emissions from the following operations shall be controlled by a baghouse and shall not exceed the limits as shown in the table below:

| Stack ID | Process | Process ID | Year of Construction (Modification) | Control Device | Beryllium (Be) Stack Limit (lb/hr) |
|---|---|---|---|---|---|
| S15 | Line 5 Pouring/Mold Cooling | P60 | 1998 (2011) | Baghouse (C15) | 0.00069 |
| | Line 5 Shakeout (3) | P61 | 1998 (2011) | | |
| | Line 5 Cast Cooling | P62 | 1998 (2011) | | |
| | Line 6 Pouring/Mold Cooling | P65 | 1998 (2011) | | |
| | Line 6 Shakeout (4) | P66 | 1998 (2011) | | |
| | Line 6 Cast Cooling (5) | P67 | 1998 (2011) | | |
| | Line 7 Pouring/Mold Cooling | P70 | 1998 (2011) | | |
| | Line 7 Shakeout (6) | P71 | 1998 (2011) | | |
| | Line 7 Cast Cooling (7) | P72 | 1998 (2011) | | |
| | Line 8 Pouring/Mold Cooling | P75 | 1998 (2011) | | |
| | Phase II Return Sand Handling/Screening (8) | P80 | 1998 (2011) | | |
| | Phase II Sand Mulling and Handling | P81 | 1998 (2011) | | |
| | Phase II Sand Blending and Cooling | P82 | 1998 (2011) | | |
| | Phase II Spent Sand and Dust Handling | P83 | 1998 (2011) | | |
| | Phase II Metal Returns Handling System (9) | P84 | 1998 (2011) | | |
| | Tumbleblast shotblast machine | P55 | 2001 | | |
| | Phase II Ductile Iron Treatment Ladle Cleaning (1) | n/a | 1998 (2011) | | |
| | Phase II two (2) ductile iron treatment stations (2) | P35 | 1998 (2001, 2011) | Baghouses C15 and C35 | |
| | Phase II Ladle Preheating (1) | P53B | 1996 | No control | |
| | Phase II air make-up units (1) | P54 | 1998 (2011) | No control | |
| S16 | Line 5 Shakeout (3) | P61 | 1998 (2011) | Baghouse (C16) | 0.00036 |
| | Line 5 Pick and Sort | P63 | 1998 (2011) | | |
| | Line 5 Cleaning/ Grinding | P64 | 1998 (2011) | | |
| | Line 6 Shakeout (4) | P66 | 1998 (2011) | | |
| | Line 6 Cast Cooling 5) | P67 | 1998 (2011) | | |
| | Line 6 Pick and Sort | P68 | 1998 (2011) | | |
| | Line 6 Cleaning/ Grinding (2) | P69 | 1998 (2011) | | |
| | Line 7 Shakeout (6) | P71 | 1998 (2011) | | |
| | Line 7 Cast Cooling (7) | P72 | 1998 (2011) | | |
| | Line 7 Pick and Sort | P73 | 1998 (2011) | | |
| | Line 7 Cleaning/ Grinding | P74 | 1998 (2011) | | |
| | Line 8 Shakeout | P76 | 1998 (2011) | | |
| | Line 8 Cast Cooling | P77 | 1998 (2011) | | |
| | Line 8 Pick and Sort | P78 | 1998 (2011) | | |
| | Line 8 Cleaning/ Grinding | P79 | 1998 (2011) | | |
| | Phase II Return Sand Handling/Screening (8) | P80 | 1998 (2011) | | |
| | Phase II Metal Returns Handling System (9) | P84 | 1998 (2011) | | |
| | Phase I Autogrinder | P87 | 2008 | | |

**Notes:**

(1) Also exhausting to Stack S15, utilizing no control device, are the Phase II Ladle

Preheating (P53B) and Phase II air make-up units (P54). Stack S15 also includes portions of the Phase II Ductile Iron Treatment Ladle Cleaning.

(2) The Phase II two (2) ductile iron treatment stations have an additional BACT limit, determined with PSD/SSM 123-29490-00019 issued on May 10, 2011. See below.
(3) Line 5 Shakeout exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(4) Line 6 Shakeout exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(5) Line 6 Cast Cooling exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(6) Line 7 Shakeout exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(7) Line 7 Cast Cooling exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(8) Phase II Return Sand Handling/Screening exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(9) Phase II Metal Returns Handling System exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)

(b) Pursuant to 326 IAC 2-2-3 (PSD – BACT) and PSD/SSM 123-29490-00019 issued on May 10, 2011, the following limit is determined as Best Available Control Technology (BACT) for beryllium (Be) for the Phase II two (2) ductile iron treatment stations, identified as P35, controlled by Baghouses C15 and C35, exhausting through stack S15:

(1) The beryllium (Be) emissions from the Phase II two (2) ductile iron treatment stations, identified as P35, shall be controlled by a fabric filter baghouse

(2) The beryllium (Be) emissions after control from the Phase II two (2) ductile iron treatment stations, identified as P35, shall not exceed 20 ppm.

(3) The beryllium (Be) emissions after control from the Phase II two (2) ductile iron treatment stations, identified as P35, shall not exceed 0.00009 pounds per hour.

D.3.8 PSD BACT Operating Requirements [326 IAC 2-2-3]

(a) Pursuant to 326 IAC 2-2-3 (PSD – BACT), SSM 123-11479-00019 issued on June 7, 2001, and PSD/SSM 123-29490-00019 issued on May 10, 2011, the maximum production rate of the Phase II two (2) ductile iron treatment stations (P35) shall not exceed a combined total of 100 tons of iron per hour, based on a 24 hour average.

(b) Pursuant to 326 IAC 2-2-3 (PSD – BACT), CP 123-8451-00019 issued on February 4 1998, and PSD/SSM 123-29490-00019 issued on May 10, 2011, the sand handling operations shall comply with the following limitations:

(1) The amount of sand throughput to the Phase II Return Sand Handling/Screening, identified as P80, shall not exceed 660 tons of sand per hour.

(2) The amount of sand throughput to the Phase II Sand Mulling and Handling, identified as P81, shall not exceed 660 tons of sand per hour.

(3) The amount of sand throughput to the Phase II Sand Blending and Cooling, identified as P82, shall not exceed 660 tons of sand per hour.

(4) The amount of sand throughput to the Phase II Spent Sand and Dust Handling, identified as P83, shall not exceed 55 tons of sand per hour.

(c) Pursuant to 326 IAC 2-2-3 (PSD – BACT), CP 123-8451-00019 issued on February 4 1998, and PSD/SSM 123-29490-00019 issued on May 10, 2011, the amount of metal

throughput to the Phase II Metal Returns Handling System, identified as P84, shall not exceed 44 tons of metal per hour.

D.3.9 PSD Minor Limit for Particulate Matter - 2008 Modification [326 IAC 2-2]

In order to render 326 IAC 2-2 (PSD) not applicable, the Permittee shall comply with the following:

(a) The PM emissions after control from the Phase I Autogrinder (P87) shall not exceed 0.6 pounds per hour.

(b) The PM10 emissions after control from the Phase I Autogrinder (P87) shall not exceed 0.6 pounds per hour.

Compliance with these limits, combined with the limited potential to emit for the Phase II phenolic-urethane core sand handling (P42) [Conditions D.4.1 and D.4.2(b)] and the limited potential to emit from the phenolic-urethane core sand handling system (P46) [[Condition D.4.2(a)], and combined with the unlimited potential to emit from the Core Room Expansion II natural gas-fired core drying ovens (P48A & P48B), will limit the PM and PM10 emissions from the 2008 modification to less than 25 and 15 tons per year, respectively, and render the requirements of 326 IAC 2-2 (PSD) not applicable to the 2008 modification (Core Room Expansion II - the addition of units P45A, P48A, & P48B, the construction of Phase I Autogrinder (P87), and the modification of Phase II phenolic-urethane core sand handling (P42) and Core Room Expansion I phenolic-urethane core sand handling (P46)).

D.3.10 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 following emission unit shall not exceed the following pound per hour limit listed in the table below:

| Emission Unit(s) | Process ID | Process Weight Rate (tons per hour) | PM Emission Limit (pounds per hour) |
|---|---|---|---|
| Phase I Autogrinder | P87 | 22.50 | 33.02 |

This limit was calculated using the following equation:

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(12)]

A Preventative Maintenance Plan is required for these facilities and their control devices. Section B – Preventive Maintenance Plan contains the Permittee's obligation 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) In order to demonstrate compliance with Conditions D.3.1, D.3.6(a), and D.3.7(a), within ninety (90) days after the issuance of Part 70 Renewal No. T123-33768-00019, the Permittee shall perform PM, opacity, lead (Pb), and beryllium (Be) testing on the processes exhausting to stacks S15 and S16 using 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.

(b) In order to demonstrate compliance with Conditions D.3.6(b), and D.3.7(b), no later than 180 days after the initial start up of the modification of the Phase II two (2) ductile iron treatment stations, identified as P35, or within five (5) years of most recent valid compliance demonstration for P35 (whichever comes first), the Permittee shall perform lead (Pb) and beryllium (Be) testing on the Phase II two (2) ductile iron treatment stations, identified as P35, controlled by Baghouses C15 and C35, exhausting through stack S15, using 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.

(c) In order to demonstrate compliance with the total stack limits specified in Conditions D.3.2, D.3.3, D.3.4, and D.3.5, within ninety (90) days after the issuance of Part 70 Renewal No. T123-33768-00019, the Permittee shall perform SO2, NOx, VOC, and CO testing on the processes exhausting to stacks S15 and S16 using 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.

(d) 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 and Metal HAPs Control

(a) In order to comply with Conditions D.3.1, D.3.6, D.3.7, D.3.9, and D.3.10, the Baghouses C15, C16, and C35 for particulate and metal HAPs control shall be in operation at all times whenever the operations exhausting to these baghouses are in operation.

(b) In the event that a bag or cartridge failure is observed in a multi-compartment bag or cartridge filter, 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.3.14 Mold Vent Ignition

In order to comply with Conditions D.3.4 and D.3.5, the Permittee shall comply with the following mold vent off gas ignition requirements for the Lines 5-8 pouring/mold cooling and shakeout operations:

(a) The Permittee shall operate the mold vent off gas ignition system for Lines 5-8 pouring/mold cooling and shakeout operations 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.3.15 Visible Emission Notations [40 CFR 64]

Pursuant to 40 CFR 64,

(a) Daily visible emission notations of the Baghouses C15, C16, and C35 stack exhausts (S15 and S16) shall be performed during normal daylight operations. 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. Section C – Response to Excursions and Exceedances contains the Permittee's

obligation with regard to the reasonable response steps required by this condition. Failure to take response steps shall be considered a deviation from this permit.

D.3.16 Baghouse Parametric Monitoring [40 CFR 64]

Pursuant to 40 CFR 64,

(a) The Permittee shall record the pressure drop across the Baghouses C15 and C35, at least once per day when the processes exhausting to these baghouses are in operation. When for any one reading, the pressure drop across the dust collector is outside the normal range, the Permittee shall take reasonable response steps. The normal range for this unit is a pressure drop between 1.0 and 10.0 inches of water unless a different upper-bound or lower-bound value for this range is determined during the latest stack test. Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps 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 the site-specific monitoring plan and corrective action plan required under 40 CFR 63.7710(b)(4) and (5).

D.3.17 Broken or Failed Bag Detection [40 CFR 64]

Pursuant to 40 CFR 64, in the event that bag failure has been observed:

(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 emissions unit. 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.3.18 Record Keeping Requirements

(a) To document the compliance status with Condition D.3.8, the Permittee shall maintain records of the following:

(1) The hourly production rate of the Phase II two (2) ductile iron treatment stations (P35).

(2) The hourly sand throughput to the Phase II Return Sand Handling/Screening (P80), the Phase II Sand Mulling and Handling (P81), the Phase II Sand Blending

and Cooling (P82), and the Phase II Spent Sand and Dust Handling (P83) operations.

(3) The hourly metal throughput to the Phase II Metal Returns Handling System (P84).

Records shall be taken daily and shall be complete and sufficient to establish compliance with the sand input limits established in Condition D.3.8.

(b) To document the compliance status with Condition D.3.15, the Permittee shall maintain records of visible emission notations of the baghouses stack exhausts 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 a visible emission notation, (i.e. the process did not operate that day).

(c) To document the compliance status with Condition D.3.16(a), 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 a pressure drop reading, (i.e. the process did not operate that day).

(d) To document the compliance status with Condition D.3.16(b), the Permittee shall keep a log of the zero drift checks and response tests for the Baghouse C16 leak detector.

(e) To document the compliance status with Condition D.3.3(b) the Permittee shall maintain records of the equipment installed and the type of fuel used in the air makeup units.

(f) To document the compliance status with Condition D.3.8(a), the Permittee shall maintain records 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.

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

**SECTION D.4 EMISSIONS UNIT OPERATION CONDITIONS**

**Emissions Unit Description: Core Making (Stacks S08, S11, S14, S17, S48, S48A, and S48B)**

Phase I Sand Handling & Ancillary Operations

(c) Sand handling operations and ancillary operations, consisting of the following:

Phase I Core Making Operations

(7) One (1) Phase I core sand handling operation, identified as P40, constructed in 1996, with a maximum throughput of 16 tons per hour, using one (1) baghouse (C08) for particulate control, exhausting to stack S08;

(8) One (1) Phase I core manufacturing operation, identified as P41, constructed in 1996, with a maximum throughput of 16 tons per hour, exhausting to stack S11;

(9) One (1) Phase I core machine & oven operation, identified as P51, constructed in 1996, with a maximum heat input capacity of 16.8 MMBtu per hour, combusting natural gas, exhausting to stack S11;

Under 40 CFR 63, Subpart EEEEE (NESHAP for Iron and Steel Foundries) the Phase I Core Making Operations are affected facilities.

The coremaking operations do not have specific applicable requirements under this NESHAP, because the requirements under this NESHAP only apply to triethylamine (TEA) cold box or core making lines at iron and steel foundries.

Phase II Sand Handling & Ancillary Operations

(f) Sand handling operations and ancillary operations, consisting of the following:

Phase II Core Making

(16) 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;

(17) One (1) phenolic-urethane core making process, identified as P43, constructed in 1998 and modified in 2001 and 2003, 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;

(18) One (1) phenolic-urethane core making process, identified as P44, constructed in 1998 and modified in 2001 and 2003, consisting of 2 mixers and 2 core machines, each with a maximum capacity of 3 tons of cores per hour (with a combined maximum capacity of 12 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;

Under 40 CFR 63, Subpart EEEEE (NESHAP for Iron and Steel Foundries) the Phase II Core Making Operations are affected facilities.

The coremaking operations do not have specific applicable requirements under this NESHAP, because the requirements under this NESHAP only apply to triethylamine (TEA) cold box or core making lines at iron and steel foundries.

Core Room Expansion I

(g) 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;

(h) One (1) phenolic-urethane core making process, identified as P47, constructed in 2005, consisting of 3 mixers and 3 core machines, each with a maximum capacity of 15 tons of cores per hour, with a combined maximum capacity of 45 tons of cores per hour. DMIPA catalyst emissions are controlled by one (1) packed bed scrubber, identified as C17. The gases are then exhausted to Stack S17;

(i) Three (3) natural gas-fired core drying ovens and natural gas-fired air make-up units, identified as P48, constructed 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 to stack S48;

Under 40 CFR 63, Subpart EEEEE (NESHAP for Iron and Steel Foundries) the Core Room Expansion I operations are affected facilities.

The coremaking operations do not have specific applicable requirements under this NESHAP, because the requirements under this NESHAP only apply to triethylamine (TEA) cold box or core making lines at iron and steel foundries.

Core Room Expansion II

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

(k) Two (2) natural gas-fired core dry ovens, each constructed in 2008, identified as P48A and P48B, with a maximum capacity of 2.5 MMBtu/hr each, utilizing no control, and with emissions exhausting in to the building;

Under 40 CFR 63, Subpart EEEEE (NESHAP for Iron and Steel Foundries) the Core Room Expansion II operations are affected facilities.

The coremaking operations do not have specific applicable requirements under this NESHAP, because the requirements under this NESHAP only apply to triethylamine (TEA) cold box or core making lines at iron and steel foundries.

(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 PSD BACT for Particulate Matter [326 IAC 2-2-3]

(a) Pursuant to 326 IAC 2-2-3 (PSD – BACT), CP 123-4593-00019 issued on January 19, 1996, and CP 123-8451-00019 issued on February 4, 1998, the particulate matter emissions from the following operations shall not exceed the limits as shown in the table

below:

| Stack ID | Process | Process ID | Year of Construction (Modification) | Control Device | Particulate Emission Limitation for stack (gr/dscf) | PM Stack Limit |
|---|---|---|---|---|---|---|
| S08 | Phase I Core sand handling | P40 | 1996 | Baghouse (C08) | 0.005 | 0.6 lb/hr |
| | Phase II phenolic-urethane core sand handling | P42 | 1998 (2008) | | | |
| S11 | Phase I Core machine & oven | P51 | 1996 | No control | - | 0.23 lb/hr and 1.0 tons/yr |

(b) Pursuant to CP 123-4593-00019 issued on January 19, 1996, visible emissions from any baghouse stack shall not exceed ten percent (10%) opacity.

D.4.2 PSD Minor Limits for Particulate Matter - 2005 and 2008 Modifications [326 IAC 2-2]

(a) In order to render 326 IAC 2-2 (PSD) not applicable, the Permittee shall comply with the following:

(1) The PM emissions after control from the phenolic-urethane core sand handling system (P46) shall not exceed 0.6 pounds per hour.

(2) The PM10 emissions after control from the phenolic-urethane core sand handling system (P46) shall not exceed 0.6 pounds per hour.

Compliance with these limits, combined with the unlimited potential to emit from the three (3) natural gas-fired core drying ovens and natural gas-fired air make-up units, identified as P48, will limit the PM and PM10 emissions from the 2005 modification to less than 25 and 15 tons per year, respectively, and render the requirements of 326 IAC 2-2 (PSD) not applicable to the 2005 modification (Core Room Expansion I - the addition of units P46, P47, and P48).

In addition, compliance with these limits, combined with the limited potential to emit from the Phase II phenolic-urethane core sand handling (P42) [Conditions D.4.1 and D.4.2(b)] and the Phase I Autogrinder (P87) [Condition D.3.9], and combined with the unlimited potential to emit from the Core Room Expansion II natural gas-fired core drying ovens (P48A & P48B), will limit the PM and PM10 from the 2008 modification to less than 25 and 15 tons per year, respectively, and render the requirements of 326 IAC 2-2 (PSD) not applicable to the 2008 modification (Core Room Expansion II - the addition of units P45A, P48A, & P48B, the construction of Phase I Autogrinder (P87), and the modification of Phase II phenolic-urethane core sand handling (P42) and Core Room Expansion I phenolic-urethane core sand handling (P46)).

(b) In order to render 326 IAC 2-2 (PSD) not applicable, the Permittee shall comply with the following:

(1) The PM10 emissions after control from the Phase II phenolic-urethane core sand handling (P42) (constructed in 1998, modified in 2008) shall not exceed 0.6 pounds per hour.

Compliance with these limits, combined with the limited potential to emit from the Phase II phenolic-urethane core sand handling (P42) [Condition 4.1] , the limited potential to emit from the phenolic-urethane core sand handling system (P46) [Condition D.4.2(a)] and the Phase I Autogrinder (P87) [Condition D.3.9], and combined with the unlimited potential to emit from the Core Room Expansion II natural gas-fired core drying ovens (P48A & P48B), will limit the PM and PM10 emissions from the 2008 modification to less than 25 and 15 tons per year, respectively, and render the requirements of 326 IAC 2-2 (PSD) not applicable to the 2008 modification (Core Room Expansion II - the addition of units P45A, P48A, & P48B, the construction of Phase I Autogrinder (P87), and the modification of Phase II phenolic-urethane core sand handling (P42) and Core Room Expansion I phenolic-urethane core sand handling (P46)).

D.4.3 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 following emission units shall not exceed the following pound per hour limits listed in the table below:

| Emission Unit(s) | Process ID | Process Weight Rate (tons per hour) | PM Emission Limit (pounds per hour) |
|---|---|---|---|
| Core Room Expansion I phenolic-urethane core sand handling | P46 | 51.00 | 44.76 |

This limit was calculated using the following equation:

Interpolation and extrapolation of the data for the process weight rate in excess of 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 Sulfur Dioxide (SO2) [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (PSD – BACT), CP 123-4593-00019, issued on January 19, 1996, and CP 123-8451-00019 issued on February 4, 1998, the SO2 emissions from the following operations shall not exceed the limits as shown in the table below:

| Stack ID | Process | Process ID | Year of Construction (Modification) | SO2 Stack Limit |
|---|---|---|---|---|
| S11 | Phase I Core machine & oven | P51 | 1996 | 0.01 lb/hr and 0.044 tons/yr |

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

Pursuant to 326 IAC 2-2-3 (PSD – BACT), CP 123-4593-00019 issued on January 19, 1996, and CP 123-8451-00019 issued on February 4, 1998, the NOx emissions from the following operations shall not exceed the limits as shown in the table below:

| Stack ID | Process | Process ID | Year of Construction (Modification) | NOx Stack Limit |
|---|---|---|---|---|
| S11 | Phase I Core machine & oven | P51 | 1996 | 2.35 lb/hr and 10.3 tons/yr |

D.4.6 PSD BACT for Volatile Organic Compounds (VOC) [326 IAC 2-2-3] [326 IAC 8-1-6]

(a) Pursuant to 326 IAC 2-2-3 (PSD – BACT), 326 IAC 8-1-6 (New Facilities, General Reduction Requirements), and CP 123-4593-00019 issued on January 19, 1996, the VOC emissions before control from the following operations shall not exceed the limits as shown in the table below:

| Stack ID | Process | Process ID | Year of Construction (Modification) | VOC Emission Limits for Individual Process | VOC Stack Limit |
|---|---|---|---|---|---|
| S11 | Phase I Core manufacturing | P41 | 1996 | 4.6 lb/hr and 20.2 tons/yr | 4.71 lb/hr and 20.6 tons/yr |
| | Phase I Core machine & oven | P51 | 1996 | 0.10 lb/hr 0.43 tons/yr | |

(b) Pursuant to 326 IAC 2-2-3 (PSD – BACT), 326 IAC 8-1-6 (New Facilities, General Reduction Requirements), CP 123-8451-00019 issued on February 4, 1998, SSM 123-12948-00019 issued on June 5, 2001, and SSM 123-16456-00019 issued on May 13, 2003, the following represents Best Available Control Technology (BACT) for the Phase II phenolic-urethane core making process (consisting of 6 mixers and 6 core machines), identified as P43, and Phase II phenolic-urethane core making process (consisting of 2 mixers and 2 core machines), identified as P44:

(1) The volatile organic compound (VOC) emissions, not including dimethylisopropylamine (DMIPA), from the two (2) core machines from the Phase II phenolic-urethane core making process 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.

(2) The volatile organic compound (VOC) emissions from the two (2) mixers from the Phase II phenolic-urethane core making process 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.

(3) The amount of binder used in the two (2) mixers from the Phase II phenolic-urethane core making process identified as P44, combined shall not exceed 390 tons per 12 consecutive month period with compliance determined at the end of each month.

(4) The amount of cores produced by the two (2) core machines from the Phase II phenolic-urethane core making process identified as P44, combined shall not exceed 26,000 tons per 12 consecutive month period with compliance determined at the end of each month.

(5) The total VOC emissions (including DMIPA) from the six (6) mixers and six (6)

core machines from the Phase II phenolic-urethane core making process identified as P43, shall not exceed 0.4 pound per ton of cores.

(6) The scrubber (identified as C14), controlling the DMIPA emissions from the six (6) core machines from the Phase II phenolic-urethane core making process identified as P43 and the two (2) core machines from the Phase II phenolic-urethane core making process identified as P44, 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 204. The scrubber shall achieve at least 98% overall control efficiency of the DMIPA.

(7) The DMIPA emissions from the scrubber (identified as C14), controlling the six (6) core machines from the Phase II phenolic-urethane core making process identified as P43 and the two (2) core machines from the Phase II phenolic-urethane core making process identified as P44, shall not exceed 0.04 pound per ton of cores and 1.04 pounds per hour.

(8) The Permittee shall only use dimethylisopropylamine (DMIPA) as a catalyst for the six (6) core machines from the Phase II phenolic-urethane core making process identified as P43 and the two (2) core machines from the Phase II phenolic-urethane core making process identified as P44.

D.4.7 VOC BACT and PSD Minor Limit - 2005 Modification [326 IAC 2-2] [326 IAC 8-1-6]

Pursuant to 326 IAC 8-1-6 (New Facilities, General Reduction Requirements), and in order to render 326 IAC 2-2 (PSD) not applicable, the Best Available Control Technology (BACT) for the Core Room Expansion I 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) phenolic-urethane core machines from the Core Room Expansion I phenolic-urethane core making process, identified as P47.

(b) The non-DMIPA volatile organic compound (VOC) emissions from the three (3) phenolic-urethane core machines from the Core Room Expansion I phenolic-urethane core making process, 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) phenolic-urethane core mixers from the Core Room Expansion I phenolic-urethane core making process, identified as P47, shall not exceed 0.002 pound per pound of binder used.

(d) The amount of binder used in all three (3) phenolic-urethane mixers from the Core Room Expansion I phenolic-urethane core making process, 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 from the Core Room Expansion I phenolic-urethane core making process, 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 three (3) mixers and three (3) core machines from the Core Room Expansion I phenolic-urethane core making process identified as P47 shall not exceed 0.04 pound per ton of cores.

(g) The scrubber controlling the DMIPA emissions from the three (3) core machines from the

Core Room Expansion I phenolic-urethane core making process 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 Room Expansion I phenolic-urethane core making process, identified as P47.

Compliance with these limits, combined with the unlimited potential to emit from the Core Room Expansion I natural gas-fired core drying ovens and air make-up units, identified as P48, will limit the VOC emissions from the 2005 modification to less than 40 tons per year and render the requirements of 326 IAC 2-2 (PSD) not applicable to the 2005 modification (Core Room Expansion I - the addition of units P46, P47, and P48).

D.4.8 VOC BACT and PSD Minor Limit - 2008 Modification [326 IAC 2-2] [326 IAC 8-1-6]

Pursuant to 326 IAC 8-1-6 (New Facilities, General Reduction Requirements), and in order to render 326 IAC 2-2 (PSD) not applicable, the Best Available Control Technology (BACT) for the Core Room Expansion II phenolic-urethane core machine (P45A) is as follows:

(a) The packed bed scrubber C14, controlling the DMIPA emissions from the core machine identified as P45A 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 204. The scrubber shall achieve at least 98% overall control efficiency of the DMIPA.

(b) The DMIPA emissions from the scrubber C14, controlling the core machine identified as P45A, shall not exceed 0.04 pound per ton of cores, and 0.24 pounds per hour.

(c) The Permittee shall only use dimethylisopropylamine (DMIPA) as a catalyst for the core machine identified as P45A.

Compliance with these limits, combined with the unlimited potential to emit from the Core Room Expansion II natural gas-fired core drying ovens (P48A & P48B), will limit the VOC emissions from the 2008 modification to less than 40 tons per year and render the requirements of 326 IAC 2-2 (PSD) not applicable to the 2008 modification (Core Room Expansion II - the addition of units P45A, P48A, & P48B, the construction of Phase I Autogrinder (P87), and the modification of Phase II phenolic-urethane core sand handling (P42) and Core Room Expansion I phenolic-urethane core sand handling (P46)).

D.4.9 PSD BACT for Carbon Monoxide (CO) [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (PSD – BACT), CP 123-4593-00019 issued on January 19, 1996, and CP 123-8451-00019 issued on February 4, 1998, the CO emissions from the following operations shall not exceed the limits as shown in the table below:

| Stack ID | Process | Process ID | Year of Construction (Modification) | CO Stack Limit |
|---|---|---|---|---|
| S11 | Phase I Core machine & oven | P51 | 1996 | 0.59 lb/hr and 2.58 tons/yr |

D.4.10 PSD BACT Operating Requirements [326 IAC 2-2-3]

(a) Pursuant to 326 IAC 2-2-3 (PSD – BACT) and CP 123-4593-00019 issued on January

19, 1996, the Phase I core ovens (P51) shall use only natural gas as a fuel source.

(b) Pursuant to 326 IAC 2-2-3 (PSD – BACT), SSM 123-12948-00019 issued on June 5, 2001, and SSM 123-16456-00019 issued on May 13, 2003, the Permittee shall comply with the following:

(1) The combined maximum throughput to the Phase II phenolic-urethane core making process, identified as P43, shall not exceed 20 tons of cores per hour, based on a 24 hour average.

(2) The combined maximum throughput to the Phase II phenolic-urethane core making process, identified as P44, shall not exceed 6 tons of cores per hour, based on a 24 hour average.

D.4.11 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventative Maintenance Plan is required for these facilities and their control devices. Section B – Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

**Compliance Determination Requirements**

D.4.12 Testing Requirements [326 IAC 2-7-6(1),(6)][326 IAC 2-1.1-11]

(a) In order to determine compliance with Conditions D.4.1 and D.4.2(b), within one hundred and eighty (180) days after the issuance of Part 70 Renewal No. T123-33768-00019, the Permittee shall perform PM and PM10 testing on Baghouse C08 (exhausting to Stack S08), controlling the Phase I Core sand handling (P40) and Phase II phenolic-urethane core sand handling (P42) 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.

(b) In order to determine compliance with Conditions D.4.2(a) and D.4.3, within one hundred and eighty (180) days after the issuance of Part 70 Renewal No. T123-33768-00019, the Permittee shall perform PM and PM10 testing on Baghouse C18, controlling the Core Room Expansion I phenolic-urethane core sand handling (P46) 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.

(c) In order to determine compliance with Condition D.4.6, within five (5) years of the most recent valid compliance demonstration, the Permittee shall perform DMIPA testing on the scrubber controlling the core machines identified as P43 and P44 (Scrubber C14) 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.

(d) In order to determine compliance with Condition 4.7, within five (5) years of the most recent valid compliance demonstration, the Permittee shall perform DMIPA testing on the scrubber controlling the core machines identified as P47 (Scrubber C17) 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.

(e) In order to determine compliance with Condition 4.8, within five (5) years of the most recent valid compliance demonstration, the Permittee shall perform DMIPA testing on the scrubber controlling the core machine P45A (Scrubber C14), 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.

(f) 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.4.13 Particulate Matter Control

(a) In order to comply with Condition D.4.1, the Baghouse C08 for particulate control shall be in operation at all times whenever the Phase I core sand handling operation (P40) or Phase II phenolic-urethane core sand handling (P42) are in operation.

(b) In order to comply with Conditions D.4.2 and D.4.3, the Baghouse C18 for particulate control shall be in operation at all times whenever the Core Room Expansion I phenolic-urethane core sand handling (P46) is in operation.

(c) In the event that a bag or cartridge failure is observed in a multi-compartment bag or cartridge filter, 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.4.14 VOC and DMIPA Control

(a) In order to comply with Conditions D.4.6 and D.4.8, the packed bed scrubber (Scrubber C14) for VOC and DMIPA control shall be in operation at all times that any of the core machines exhausting to this scrubber Stack S14 (P43, P44, and P45A) are in operation.

(b) In order to comply with Condition D.4.7, the packed bed scrubber (Scrubber C17) for VOC and DMIPA control shall be in operation at all times that any of the core machines exhausting to this scrubber Stack S17 (P47) are in operation.

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

D.4.15 Visible Emission Notations [40 CFR 64]

Pursuant to 40 CFR 64,

(a) Daily visible emission notations of the Baghouse C08 stack exhausts (S08) shall be performed during normal daylight operations. 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. Section C – Response to Excursions and Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. Failure to take response steps shall be considered a deviation from this permit.

D.4.16 Baghouse Parametric Monitoring [40 CFR 64]

Pursuant to 40 CFR 64, the Permittee shall record the pressure drop across the Baghouses C08 and C18 at least once per day when the processes exhausting to these baghouses are in operation. When for any one reading, the pressure drop across the dust collector is outside the normal range, the Permittee shall take reasonable response steps. The normal range for this unit is a pressure drop between 1.0 and 10.0 inches of water unless a different upper-bound or lower-bound value for this range is determined during the latest stack test. Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps 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.4.17 Broken or Failed Bag Detection [40 CFR 64]

Pursuant to 40 CFR 64, in the event that bag failure has been observed:

(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 emissions unit. 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.

D.4.18 Packed Bed Scrubber Parametric Monitoring

(a) For Scrubber C14:

(1) 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.

(2) 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.

(b) For Scrubber C17:

(1) 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.

(2) 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.4.19 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).

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

D.4.20 Record Keeping Requirements

(a) To document the compliance status with Condition D.4.6(b)(3), the Permittee shall maintain records of the binder usage in the two (2) core mixers associated with the Phase II phenolic-urethane core making (P44) each month.

(b) To document the compliance status with Condition D.4.6(b)(4), the Permittee shall maintain records of the core production from the two (2) core machines associated with the Phase II phenolic-urethane core making (P44) each month.

(c) To document the compliance status with Condition D.4.7(d), the Permittee shall maintain records of the binder usage in the three (3) core mixers associated with the Core Room Expansion I phenolic-urethane core making process (P47) each month.

(d) To document the compliance status with Condition D.4.7(e), the Permittee shall maintain records of the core production from the three (3) core machines associated with the Core Room Expansion I phenolic-urethane core making process (P47) each month.

(e) To document the compliance status with Condition D.4.10(a), the Permittee shall maintain records of type of fuel used in the Phase I core ovens (P51).

(f) To document the compliance status with Conditions D.4.10(b)(1) and D.4.10(b)(2), the Permittee shall maintain records 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.

(g) To document the compliance status with Condition D.4.15, the Permittee shall maintain records of visible emission notations of the baghouses stack exhausts 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 a visible emission notation, (i.e. the process did not operate that day).

(h) To document the compliance status with Condition D.4.16, 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 a pressure drop reading, (i.e. the process did not operate that day).

(i) To document the compliance status with Conditions D.4.18(a)(1) and D.4.18(b)(1), the Permittee shall maintain records of the pressure drop and pH readings of the scrubbers 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).

(j) To document the compliance status with Conditions D.4.18(a)(2) and D.4.18(b)(2), the Permittee shall maintain records of the flow rate of the scrubbers 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).

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

D.4.21 Reporting Requirements

(a) To document compliance with Condition D.4.6(b)(3), the Permittee shall submit a quarterly summary of the binder usage in the Phase II phenolic-urethane core making (P44).

(b) To document compliance with Condition D.4.6(b)(4), the Permittee shall submit a quarterly summary of the core production in the Phase II phenolic-urethane core making (P44).

(c) To document compliance with Condition D.4.7(d), the Permittee shall submit a quarterly summary of the binder usage in the Core Room Expansion I phenolic-urethane core making process (P47).

(d) To document compliance with Condition D.4.7(e), the Permittee shall submit a quarterly summary of the core production in the Core Room Expansion I phenolic-urethane core making process (P47).

These reports shall be submitted within thirty (30) calendar days following the end of each calendar quarter. Section C - General Reporting contains the Permittee's obligation with regard to the reporting required by this condition. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

**SECTION D.5 EMISSIONS UNIT OPERATION CONDITIONS**

**Emissions Unit Description: Stack S44**

Phase I Sand Handling & Ancillary Operations

(c) Sand handling operations and ancillary operations, consisting of the following:

Phase I Furnace Material Handling

(6) One (1) Phase I charge and make-up operation, identified as P32, constructed in 1996, with a maximum throughput of 100 tons per hour, using one (1) baghouse (C44) for particulate control, exhausting to stack S44;

Phase I Ladle Operations

(12) One (1) Phase I ladle filling & iron transport operation, identified as P85, constructed in 1996 and modified in 2011, with a maximum throughput of 100 tons per hour, using one (1) baghouse (C44) for particulate control, exhausting to stack S44;

A portion of the ladle filling & iron transport operation, identified as P85, is released inside the building and not ventilated to baghouse C44.

(13) One (1) Phase I Melt Area Ladle Cleaning, identified as P86, constructed in 1996, 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;

Phase I Ancillary Operations

(19) One (1) Phase I 16 ton iron bath desulfurization ladle operation, approved in 2011 for construction, 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 Sand Handling & Ancillary Operations

(f) Sand handling operations and ancillary operations, consisting of the following:

Phase II Furnace Material Handling

(6) One (1) enclosed cupola charge make-up and handling unit, identified as constructed in 1998 and modified in 2011, with a maximum charge of 114.0 tons per hour, using one (1) baghouse (C44) for particulate control, exhausting to stack S44;

Phase II Ladle Operations

(8) One (1) ladle filling and iron transport operation, constructed in 1998 and modified in 2011, with a maximum capacity of 188 tons of iron per hour, using one (1) baghouse (C44) for particulate control, exhausting to stack S44;

(9) One (1) Phase II Melt Area Ladle Cleaning, constructed in 1998, 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;

(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]

Pursuant to 326 IAC 2-2-3 (PSD – BACT), CP 123-4593-00019 issued on January 19, 1996, and PSD/SSM 123-29490-00019 issued on May 10, 2011, the Permittee shall comply with the following:

(a) The PM emissions from the Baghouse C44, controlling the following processes shall not exceed the limits listed in the table below:

| Stack ID | Process | Process ID | Year of Construction (Modification) | Control Device | Particulate Emission Limitation for stack (gr/dscf) | PM Stack Limit (lb/hr) |
|---|---|---|---|---|---|---|
| S44 | Phase I charge and make-up operation | P32 | 1996 | Baghouse (C44) | 0.005 | 6.86 |
| | Phase I Ladle filling & iron transport system | P85 | 1996 | | | |
| | Phase I Melt Area Ladle Cleaning | P86 | 1996 | | | |
| | Phase I Iron bath desulfurization | P34 | 2011 | | | |
| | Phase II Melt Area Ladle Cleaning | n/a | 1998 (2011) | | | |
| | Phase II enclosed cupola charge make-up and handling unit | n/a | 1998 (2011) | | | |
| | Phase II ladle filling and iron transport operation | n/a | 1998 (2011) | | | |

(b) The PM emissions from the Phase I Iron bath desulfurization (P34), approved in 2011 for construction, shall be controlled by a baghouse and shall not exceed 0.64 pounds 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.

D.5.2 PSD Minor Limit for PM10 - 2011 Modification [326 IAC 2-2]

In order to render 326 IAC 2-2 (PSD) not applicable, PM10 emissions from the Phase I Iron bath desulfurization (P34) shall not exceed 0.64 pounds per hour.

Compliance with this limit, combined with the actual to projected actual (ATPA) analysis made in PSD/SSM No. 123-29490-00019, issued on May 10, 2011, will limit the PM10 emissions from the 2011 modification to less than 15 tons per year and render the requirements of 326 IAC 2-2 (PSD) not applicable to the 2011 modification.

D.5.3 PSD BACT for Lead (Pb) [326 IAC 2-2-3]

(a) Pursuant to 326 IAC 2-2-3 (PSD – BACT) and CP 123-8451-00019 issued on February 4, 1998, the lead (Pb) emissions from the Baghouse C44, controlling the following processes shall not exceed the limits listed in the table below:

| Stack ID | Process | Process ID | Year of Construction (Modification) | Control Device | Combined Lead (Pb) Limit (lb/hr) |
|---|---|---|---|---|---|
| S44 | Phase I charge and make-up operation | P32 | 1996 | Baghouse (C44) | - |
| | Phase I Ladle filling & iron transport system | P85 | 1996 | | - |
| | Phase I Melt Area Ladle Cleaning | P86 | 1996 | | - |
| | Phase I Iron bath desulfurization * | P34 | 2011 | | - |
| | Phase II Melt Area Ladle Cleaning | n/a | 1998 (2011) | | 0.00004 |
| | Phase II enclosed cupola charge make-up and handling unit | n/a | 1998 (2011) | | |
| | Phase II ladle filling and iron transport operation | n/a | 1998 (2011) | | |

*See limit below

(b) Pursuant to 326 IAC 2-2-3 (PSD – BACT) and PSD/SSM 123-29490-00019 issued on May 10, 2011, the following is determined as Best Available Control Technology (BACT) for lead (Pb) for the Phase I Iron bath desulfurization (P34), exhausting through stack S44:

(1) The lead (Pb) emissions from the Phase I Iron bath desulfurization (P34) shall be controlled by a fabric filter baghouse.

(2) The lead (Pb) emissions from the Phase I Iron bath desulfurization (P34) shall not exceed 1,000 ppm and 0.00064 pounds per hour.

D.5.4 PSD BACT for Beryllium (Be) [326 IAC 2-2-3]

(a) Pursuant to 326 IAC 2-2-3 (PSD – BACT), CP 123-4593-00019 issued on January 19, 1996, CP 123-8451-00019 issued on February 4, 1998, the beryllium (Be) emissions from the Phase I charge and make-up operation (P32) shall not exceed 0.0000026 pounds per hour.

(b) Pursuant to 326 IAC 2-2-3 (PSD – BACT) and PSD/SSM 123-29490-00019 issued on May 10, 2011, the following is determined as Best Available Control Technology (BACT) for beryllium (Be) for the Phase I Iron bath desulfurization (P34), exhausting through stack S44:

(1) The beryllium (Be) emissions from the Phase I Iron bath desulfurization (P34) shall be controlled by a fabric filter baghouse.

(2) The beryllium (Be) emissions from the Phase I Iron bath desulfurization (P34) shall not exceed 20 ppm and 0.00001 pounds per hour.

D.5.5 PSD BACT Operating Requirements [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (PSD – BACT) and CP 123-8451-00019 issued on February 4, 1998, the following limitations shall apply to the Phase II operations:

(a) The throughput to Phase II ladle filling and iron transport operation shall not exceed 150 tons of iron per hour.

(b) The throughput to the Phase II Melt Area Ladle Cleaning shall not exceed 13.2 burn bars per hour.

(c) The throughput to the Phase II enclosed cupola charge make-up and handling unit shall not exceed 114.0 tons per hour.

D.5.6 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventative Maintenance Plan is required for these facilities and their control devices. Section B – Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

**Compliance Determination Requirements**

D.5.7 Testing Requirements [326 IAC 2-7-6(1),(6)][326 IAC 2-1.1-11]

In order to determine compliance with Conditions D.5.1(b), D.5.2, D.5.3(b), and D.5.4(b), within one hundred and eighty (180) days after the issuance of Part 70 Renewal No. T123-33768-00019, or within sixty (60) days of reaching maximum capacity but no later than one hundred and eighty (180) days after initial startup of the Phase I Iron bath desulfurization (P34), whichever comes first, the Permittee shall conduct PM, PM10, lead (Pb), and beryllium (Be) testing on the Baghouse C44, exhausting to Stack S44, 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.

D.5.8 Particulate Matter and Metal HAPs Control

(a) In order to comply with Conditions D.5.1, D.5.2, D.5.3, and D.5.4, the Baghouse C44 for particulate and metal HAPs control shall be in operation at all times whenever the operations exhausting to this baghouse are in operation.

(b) In the event that a bag or cartridge failure is observed in a multi-compartment bag or cartridge filter, 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.5.9 Visible Emission Notations [40 CFR 64]

Pursuant to 40 CFR 64,

(a) Daily visible emission notations of the Baghouse C44 stack exhaust (S44) shall be performed during normal daylight operations. 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. Section C – Response to Excursions and Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. Failure to take response steps shall be considered a deviation from this permit.

D.5.10 Baghouse Parametric Monitoring [40 CFR 64]

Pursuant to 40 CFR 64,

(a) The Permittee shall record the pressure drop across the Baghouse C44 at least once per day when the process is in operation. When for any one reading, the pressure drop across the dust collector is outside the normal range, the Permittee shall take reasonable response steps. The normal range for this unit is a pressure drop between 1.0 and 10.0 inches of water unless a different upper-bound or lower-bound value for this range is determined during the latest stack test. Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit.

(b) 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.5.11 Broken or Failed Bag Detection [40 CFR 64]

Pursuant to 40 CFR 64, in the event that bag failure has been observed:

(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 emissions unit. 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.5.12 Record Keeping Requirements

(a) To document the compliance status with Condition D.5.5, the Permittee shall maintain records of the following:

(1) The hourly iron throughput of the Phase II ladle filling and iron transport operation.

(2) The hourly burn bar throughput to the Phase II Melt Area Ladle Cleaning operation.

(3) The hourly throughput to the Phase II enclosed cupola charge make-up and handling unit.

Records shall be taken daily and shall be complete and sufficient to establish compliance with the sand input limits established in Condition D.5.5.

(b) To document the compliance status with Condition D.5.9, 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 a visible emission notation, (i.e. the process did not operate that day).

(c) To document the compliance status with Condition D.5.10, 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 a pressure drop reading, (i.e. the process did not operate that day).

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

## SECTION D.6 EMISSIONS UNIT OPERATION CONDITIONS

**Emissions Unit Description: Stack 12**

Phase I Sand Handling & Ancillary Operations

(c) Sand handling operations and ancillary operations, consisting of the following:

Phase I Ladle Operations

(10) One (1) Phase I ladle preheating operation, identified as P53, constructed in 1996, with a maximum heat input capacity of 11.5 MMBtu per hour, combusting natural gas, utilizing no control, and exhausting to stack S12;

(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.6.1 PSD BACT for Particulate Matter [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (PSD – BACT), CP 123-4593-00019 issued on January 19, 1996, the PM emissions from the Phase I Ladle preheating operation, identified as P53, shall not exceed 0.16 pound per hour.

D.6.2 PSD BACT for Sulfur Dioxide (SO2) [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (PSD – BACT) and CP 123-4593-00019 issued on January 19, 1996, the SO2 emissions from the Phase I Ladle preheating operation, identified as P53, shall not exceed 0.00685 pounds per hour.

D.6.3 PSD BACT for Nitrogen Oxide (NOx) [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (PSD – BACT) and CP 123-4593-00019 issued on January 19, 1996, the NOx emissions from the Phase I Ladle preheating operation, identified as P53, shall not exceed 1.61 pounds per hour.

D.6.4 PSD BACT for Volatile Organic Compounds (VOC) [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (PSD – BACT), CP 123-4593-00019 issued on January 19, 1996, and CP 123-8451-00019 issued on February 4, 1998, the VOC emissions from the Phase I Ladle preheating operation, identified as P53, shall not exceed 0.06621 pound per hour.

D.6.5 PSD BACT for Carbon Monoxide (CO) [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (PSD – BACT), CP 123-4593-00019 issued on January 19, 1996, and CP 123-8451-00019 issued on February 4, 1998, the CO emissions from the Phase I Ladle preheating operation, identified as P53, shall not exceed 0.40 pounds per hour.

D.6.6 PSD BACT Operating Requirements [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (PSD – BACT), CP 123-4593-00019 issued on January 19, 1996, the Phase I Ladle preheating operation, identified as P53, shall use only natural gas as a fuel source.

D.6.7 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventative Maintenance Plan is required for these facilities and their control devices. Section B – Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

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

D.6.8 Record Keeping Requirements

(a) To document the compliance status with Condition D.6.6, the Permittee shall maintain records of type of fuel used in the Phase I Ladle preheating operation, identified as P53.

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

**SECTION D.7 EMISSIONS UNIT OPERATION CONDITIONS**

**Emissions Unit Description: Emission Units Exhausting Indoors**

Phase I Sand Handling & Ancillary Operations

(c) Sand handling operations and ancillary operations, consisting of the following:

Phase I Ladle Operations

(15) One (1) Line 2 ladle cleaning operation, constructed in 1996, 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, constructed in 1996, 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;

Phase I Ancillary Operations

(21) Two (2) Phase I autogrinder machines, 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;

Phase II Sand Handling & Ancillary Operations

(f) Sand handling operations and ancillary operations, consisting of the following:

Phase II Furnace Material Handling

(7) Raw material handling, constructed in 1998, including the following:

(A) Iron handling at a maximum rate of 187.5 tons per hour,

(B) Alloys handling at a maximum rate of 1.875 tons per hour,

(C) Coke handling at a maximum rate of 18.875 tons per hour, and

(D) Limestone handling at a maximum rate of 4.5 tons per hour;

Phase II Ladle Operations

(10) One (1) Line 5 ladle cleaning operation, constructed in 1998, 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 6 ladle cleaning operation, constructed in 1998, 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 7 ladle cleaning operation, constructed in 1998, 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) Line 8 ladle cleaning operation, constructed in 1998, 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;

Phase II Ancillary Operations

(21) One (1) pattern shop, identified as P50, constructed in 1998, with a maximum capacity of 10 patterns per hour, controlled by a baghouse, and exhausting indoors;

(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.7.1 PSD BACT for Particulate Matter [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (PSD – BACT) and CP 123-4593-00019 issued on January 19, 1996, the PM emissions from the baghouse controlling the following process shall not exceed the limits listed in the table below:

| Process | Process ID | Year of Construction (Modification) | Control Device | PM Emission Limits for Individual Process (lb/hr) | Particulate Emission Limitation for stack (gr/dscf) |
|---|---|---|---|---|---|
| Phase II Pattern shop | P50 | 1998 | Baghouse | 0.21 | 0.005 |

D.7.2 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 following emission units shall not exceed the following pound per hour limits listed in the table below:

| Emission Unit(s) | Process ID | Process Weight Rate (tons per hour) | PM Emission Limit (pounds per hour) |
|---|---|---|---|
| Two (2) autogrinders | P87A | 1.02 | 4.15 |

This limit was calculated using the following equation:

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.7.3 PSD BACT Operating Requirements [326 IAC 2-2-3]

Pursuant to 326 IAC 2-2-3 (PSD – BACT) and CP 123-8451-00019 issued on February 4, 1998, the raw material handling operations shall not exceed the following throughputs:

(a) 187.5 tons per hour for the iron handling;

(b) 1.875 tons per hour for the alloys handling;

(c) 18.875 tons per hour for the coke handling; and

(d) 4.5 tons per hour for the limestone handling.

D.7.4 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventative Maintenance Plan is required for these facilities and their control devices. Section B – Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

**Compliance Determination Requirements**

D.7.5 Particulate Matter Control

In order to comply with Condition D.7.1, the baghouse for particulate control shall be in operation at all times whenever the Phase II Pattern shop (P50) processes exhausted to the baghouse are in operation.

**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 the compliance status with Condition D.7.3, the Permittee shall maintain records of the hourly raw material handling of iron, alloys, coke, and limestone. Records shall be taken daily and shall be complete and sufficient to establish compliance with the sand input limits established in Condition D.7.3.

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

## SECTION D.8 EMISSIONS UNIT OPERATION CONDITIONS

**Emissions Unit Description: Insignificant Activities**

(a) Bulk material delivery including foundry sand, coke, limestone and silicon carbide [326 IAC 2-7-1(21)(E)];

(b) Bulk material storage piles including Iron scrap, silica sand and other raw materials [326 IAC 2-7-1(21)(E)];

(c) Casting handling, trimming and packaging [326 IAC 2-7-1(21)(E)];

(d) Construction and demolition of facility equipment and buildings [326 IAC 2-7-1(21)(J)(xvii)]

(e) Convenience space heating (less than five million BTU/hr burning natural gas, liquid fuel, or wood) [326 IAC 2-7-1(21)(J)(i)]

(f) Convenience water heating [326 IAC 2-7-1(21)(J)(i)]

(g) Cooling towers [326 IAC 2-7-1(21)(J)(ix)(FF)]

(h) Emergency Generators [326 IAC 2-7-1(21)(E), consisting of the follow:

(1) One (1) diesel-fired compression-ignition emergency RICE, constructed in 1997, with a power output of 99 kW, utilizing no control, and exhausting outdoors.

Under NESHAP Subpart ZZZZ, this emergency generator is an existing affected facility.

(i) Employee tobacco use areas [326 IAC 2-7-1(21)(E)]

(j) Equipment waste heat dissipation [326 IAC 2-7-1(21)(E)]

(k) Fire Control Equipment [326 IAC 2-7-1(21)(E)]

(l) Gasoline fuel transfer and dispensing operation handling less than or equal to 1,300 gallons per day, such as filling of tanks, locomotives, automobiles, having a storage capacity less than or equal to 10,500 gallons [326 IAC 2-7-1(21)(J)(ii)(AA)]

(m) Handling and Transport of Waste Sand [326 IAC 2-7-1(21)(E)]

(n) Handling of foundry wastes [326 IAC 2-7-1(21)(E)]

(o) Heat exchanger cleaning and repair [326 IAC 2-7-1(21)(J)(x)(BB)]

(p) Internal Combustion Engines Used for Warehousing and Material Transport [326 IAC 2-7-1(21)(J)(i)(BB)]

(q) Laboratory as defined in 326 IAC 2-7-1(21)(G) [326 IAC 2-7-1(21)(G)]

(r) Maintenance battery charging stations [326 IAC 2-7-1(21)(J)(xvii)]

(s) Maintenance blowdown for any of the following: sight glass; boilers; compressors; pumps; and cooling tower [326 IAC 2-7-1(21)(J)(xx)]

| | |
|---|---|
| (t) | Maintenance compressed air moisture removal and venting [326 IAC 2-7-1(21)(J)(xxii)(BB)] |
| (u) | Maintenance degreasing of molding machines with mineral spirits (1,200 gallons or 7,600 lbs per year) [326 IAC 2-7-1(21)(J)(vi)(DD)] [326 IAC 8-3-2] |
| (v) | Maintenance degreasing operations that do not exceed 145 gallons per 12 months [326 IAC 2-7-1(21)(J)(vi)(CC)] [326 IAC 8-3-2] |
| (w) | Maintenance janitorial activities [326 IAC 2-7-1(21)(J)(xvii)] |
| (x) | Maintenance machining [326 IAC 2-7-1(21)(E)] |
| (y) | Maintenance metal cutting with blades and torches [326 IAC 2-7-1(21)(J)(vi)(EE)] |
| (z) | Maintenance of boiler, turbine, and HVAC systems [326 IAC 2-7-1(21)(J)(xvii)] |
| (aa) | Maintenance of grounds, equipment, and buildings (lawn care, painting, etc.) [326 IAC 2-7-1(21)(J)(xvii)] |
| (bb) | Maintenance of roof structure and insulation [326 IAC 2-7-1(21)(J)(xvii)] |
| (cc) | Maintenance of vehicles and equipment including repairs, steam cleaning and pressure washing [326 IAC 2-7-1(21)(J)(xvii)] |
| (dd) | Maintenance painting [326 IAC 2-7-1(21)(J)(xvii)] |
| (ee) | Maintenance use of portable generators [326 IAC 2-7-1(21)(J)(xxii)] |
| (ff) | Maintenance use of portable media blasting including sand and dry ice [326 IAC 2-7-1(21)(E)] |
| (gg) | Maintenance welding (fixed and portable) [326 IAC 2-7-1(21)(J)(vi)(EE)] |
| (hh) | Minor storage piles less than 100 $yd^3$ for foundry sand on unpaved areas [326 IAC 2-7-1(21)(E)] |
| (ii) | Mold release agents using low volatile products (vapor pressure less than or equal to 2 kilopascals measured at 38 degrees C) [326 IAC 2-7-1(21)(J)(vi)(DD)] |
| (jj) | Natural gas-fired combustion sources with heat input equal to or less than ten million (10,000,000) Btu per hour [326 IAC 2-7-1(21)(J)(i)] |
| (kk) | Office activities [326 IAC 2-7-1(21)(E)] |
| (ll) | On-site first aid medical care including use of isopropyl alcohol [326 IAC 2-7-1(21)(E)] |
| (mm) | Operations using aqueous solutions containing less than 1% by weight of VOCs excluding HAPs [326 IAC 2-7-1(21)(J)(ix)(DD)] |
| (nn) | Paved road maintenance including paving, salting, sanding and street sweeping [326 IAC 2-7-1(21)(J)(xvii)] |
| (oo) | Petroleum fuel, other than gasoline, dispensing facility, having a storage capacity of less than or equal to 10,500 gallons, and dispensing less than or equal to 230,000 gallons per month [326 IAC 2-7-1(21)(J)(ii)] |

(pp) Pollution Control Equipment Maintenance [326 IAC 2-7-1(21)(J)(x)(AA)]

(qq) Portable kerosene heaters used indoors and outdoors [326 IAC 2-7-1(21)(J)(i)]

(rr) Process safety relief devices [326 IAC 2-7-1(21)(E)]

(ss) Product dunnage handling [326 IAC 2-7-1(21)(E)]

(tt) Purging of natural gas lines [326 IAC 2-7-1(21)(J)(xvii)(AA)]

(uu) Safety and emergency equipment and training [326 IAC 2-7-1(21)(I)]

(vv) Sanitary sewer and plumbing venting [326 IAC 2-7-1(21)(J)(ix)(AA)]

(ww) Skid mounted wastewater treatment plant operations [326 IAC 2-7-1(21)(J)(ix)(AA)]

(xx) Slag quenching [326 IAC 2-7-1(21)(E)]

(yy) Traffic on paved roads [326 IAC 2-7-1(21)(J)(xiii)]

(zz) Traffic on unpaved roads [326 IAC 2-7-1(21)(J)(xiii)]

(aaa) Underground conveyors [326 IAC 2-7-1(21)(J)(xiv)(CC)]

(bbb) Warehousing of supply materials [326 IAC 2-7-1(21)(J)(i)(BB)]

(ccc) Wastewater streams treatment with an oil and grease content less than or equal to 1% by volume [326 IAC 2-7-1(21)(J)(ix)(AA)]

(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.8.1 Organic Solvent Degreasing Operations [326 IAC 8-3-2]

Pursuant to 326 IAC 8-3-2 (Cold Cleaner Degreaser Control and Equipment Operating Requirements), the Permittee shall:

(a) Ensure the following control equipment and operating requirements are met:

(1) Equip the degreaser with a cover.

(2) Equip the degreaser with a device for draining cleaned parts.

(3) Close the degreaser cover whenever parts are not being handled in the degreaser.

(4) Drain cleaned parts for at least fifteen (15) seconds or until dripping ceases;

(5) Provide a permanent, conspicuous label that lists the operating requirements in subdivisions (3), (4), (6), and (7).

(6) Store waste solvent only in closed containers.

(7) Prohibit the disposal or transfer of waste solvent in such a manner that could allow greater than twenty percent (20%) of the waste solvent (by weight) to evaporate into the atmosphere.

(b) Ensure the following additional control equipment and operating requirements are met:

(1) Equip the degreaser with one (1) of the following control devices if the solvent is heated to a temperature of greater than forty-eight and nine-tenths (48.9) degrees Celsius (one hundred twenty (120) degrees Fahrenheit):

(A) A freeboard that attains a freeboard ratio of seventy-five hundredths (0.75) or greater.
(B) A water cover when solvent used is insoluble in, and heavier than, water.
(C) A refrigerated chiller.
(D) Carbon adsorption.
(E) An alternative system of demonstrated equivalent or better control as those outlined in clauses (A) through (D) that is approved by the department. An alternative system shall be submitted to the U.S. EPA as a SIP revision.

(2) Ensure the degreaser cover is designed so that it can be easily operated with one (1) hand if the solvent is agitated or heated.

(3) If used, solvent spray:
(A) must be a solid, fluid stream; and
(B) shall be applied at a pressure that does not cause excessive splashing.

## SECTION D.9 EMISSIONS UNIT OPERATION CONDITIONS

**Emissions Unit Description:**

Sand Reclamation System for Phase I and Phase II processes

(l) One (1) sand reclamation system, identified as P27, approved in 2015 for construction, with a maximum throughput rate 9 tons of spent sand per hour, consisting of:

(1) Lump crushing and screening equipment listed below, controlled by baghouse C27A and venting to stack S07:

(i) One (1) lump crusher
(ii) One (1) sand screen
(iii) Two (2) bucket elevators
(iv) One (1) sand and clay separator

(2) Thermal reclamation equipment listed below, controlled by baghouse C27B and venting to stack S07:

(i) One (1) thermal sand reclaimer, equipped with 10 MMbtu/hr natural gas fired oven
(ii) One (1) sand cooler
(iii) One (1) sand and clay separator
(iv) Two (2) bucket elevators

Under NSPS, Subpart UUU, the thermal sand reclaimer is considered a calciner.

(3) Two (2) iron separators, without control and exhausting inside.

(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 PSD Minor [326 IAC 2-2], BACT avoidance Limit [326 IAC 8-1-6] and HAPs Minor Limits [326 IAC 2-4.1]

In order to render the requirements of 326 IAC 2-2, 326 IAC 8-1-6 and 326 IAC 2-4.1 not applicable, the Permittee shall comply with the following limits for the sand reclamation system (P27):

(a) The total PM emissions after control (baghouses (C27A and C27B)) shall not exceed 1.7 pounds per hour.

(b) The total PM10 emissions after control (baghouses (C27A and C27B)) shall not exceed 1.7 pounds per hour.

(c) The total PM2.5 emissions after control (baghouses (C27A and C27B)) shall not exceed 1.7 pounds per hour.

(d) The VOC emissions shall not exceed 2.26 pounds per hour.

(e) The CO emissions shall not exceed 22.8 pounds per hour.

(f) The single HAP emissions shall not exceed 2.26 pounds per hour.

(g) The combined HAPs emissions shall not exceed 5.68 pounds per hour.

Compliance with the above PM, PM10 and PM2.5 limits in conjunction with the PM, PM10 and PM2.5 emissions from the two (2) iron separators will limit the PM, PM10, and PM2.5 emission from the sand reclamation system (P27) to less than 25, 15 and 10 tons per twelve (12) consecutive month period, respectively, and render 326 IAC 2-2 not applicable to this 2015 modification.

Compliance with the above VOC and CO limits will limit the VOC and CO emissions from the sand reclamation system (P27) to less than 40 and 100 tons per twelve (12) consecutive month period, respectively, and render 326 IAC 2-2 not applicable to this 2015 modification and 326 IAC 8-1-6 not applicable to the sand reclamation system (P27).

Compliance with the above HAPs limits will limit the single HAP and combined HAPs emissions from the sand reclamation system (P27) less 10 and 25 tons per twelve (12) consecutive month period, respectively, and render 326 IAC 2-4.1 not applicable to the sand reclamation system (P27).

D.9.2 Particulate [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the allowable particulate matter (PM) rate from the sand reclamation system (P27) shall not exceed 17.87 pounds per hour.

The pound per hour limitation was calculated as follows:

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

E = 4.10 P0.67 where E = rate of emission in pounds per hour, and
P = process weight rate in tons per hour

D.9.3 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan is required for this facility and its control devices. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

**Compliance Determination Requirements**

D.9.4 Testing Requirements [326 IAC 2-7-6(1),(6)] [326 IAC 2-1.1-11]

(a) In order to demonstrate the compliance status with Conditions D.9.1(a) through (c), the Permittee shall perform PM, PM10 and PM2.5 testing for the baghouses (C27A and C27B) equipped on the sand reclamation system (P27) no later than one hundred eighty (180) days after the initial startup of the sand reclamation system (P27). The test shall be repeated at least once every five (5) years from the date of this valid compliance demonstration.

PM10 and PM2.5 includes filterable and condensable PM.

(b) In order to demonstrate the compliance status with Conditions D.9.1(d) and (e), the Permittee shall perform VOC and CO testing for the sand reclamation system (P27) no later than one hundred eighty (180) days after the initial startup of the sand reclamation system (P27).

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 obligation with regard to the performance testing required by this condition.

D.9.5 Particulate Control

In order to comply with Conditions D.9.1(a) through (c) and D.9.2, the baghouses (C27A and C27B) for particulate control shall be in operation and control emissions from the sand reclamation system (P27) at all times that the sand reclamation system (P27) is in operation.

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

D.9.6 Thermal Sand Reclaimer Temperature

(a) A continuous monitoring system shall be calibrated, maintained, and operated on the thermal sand reclaimer for measuring operating temperature. For the purpose of this condition, continuous means no less often than once per fifteen (15) minutes. The output of this system shall be recorded as 3-hour average. From the date of startup until the stack test results are available, the Permittee shall operate the thermal sand reclaimer at or above the 3-hour average temperature of 1,300°F.

(b) The Permittee shall determine the 3-hour average temperature from the most recent valid stack test that demonstrates compliance with limits in Conditions D.9.1(d) and (e).

(c) On and after the date the stack test results are available, the Permittee shall operate the thermal sand reclaimer at or above the 3-hour average temperature as observed during the compliant stack test.

D.9.7 Bag leak detection systems (BLDSs)

(a) The Permittee shall install and operate continuous Bag leak detection systems (BLDSs) for the baghouses (C27A and C27B).

The BLDS shall meet the following requirements:

(i) The BLDSs must be certified by the manufacturer to be capable of detecting particulate matter emissions.

(ii) The BLDS sensor must provide output of relative particulate matter loading.

(iii) The BLDS must be equipped with an alarm system that will alarm when an increase in relative particulate loading is detected over a preset level.

(iv) The BLDS shall be installed and operated in a manner consistent with available written guidance from the U.S. Environmental Protection Agency or, in the absence of such written guidance, the manufacturer's written specifications and recommendations for installation, operation, and adjustment of the system.

(v) The initial adjustment of the system shall, at a 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.

(vi) In no event shall the sensitivity be increased by more than 100 percent or decreased by more than 50 percent over a 365 day period unless such adjustment follows a complete baghouse inspection, which demonstrates the baghouse is in good operating condition.

(vii) The bag detector must be installed downstream of the baghouses.

(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.9.8 40 CFR Part 60, Subpart UUU

In the event BLDSs is malfunctioning or is down for maintenance or repairs for a period of at least twenty-four (24) hours, the Permittee shall comply with the requirements under NSPS 40 CFR Part 60, Subpart UUU.

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

D.9.9 Record Keeping Requirements

(a) To document the compliance status with Condition D.9.6, the Permittee shall maintain the continuous temperature records for the thermal sand reclaimer and the 3-hour rolling average temperature used to demonstrate compliance during the most recent compliant stack test.

(b) To document compliance with Condition D.9.7, the Permittee shall maintain records of each alarm.

(c) To document the compliance status with Condition D.9.8, the Permittee shall maintain following:

(1) Records of the date and time period during which the BLDSs malfunction occurred or was down for maintenance or repairs, and

(2) Daily records of visible emission notations of the stack S07.

The Permittee shall include in its daily record when a visible emission notation is not taken when BLDSs malfunction occurred or was down and the reason for the lack of visible emission notation (e.g. the process did not operate that day).

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

## SECTION E.1 EMISSIONS UNIT OPERATION CONDITIONS

**Emissions Unit Description:**

Phase I Metal Melting

(a) One (1) Phase I gray iron cupola, identified as P30, constructed in 1996 and modified in 2011, 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;

Under 40 CFR 63, Subpart EEEEE (NESHAP for Iron and Steel Foundries) the Phase I gray iron cupola is an affected facility.

Phase I Casting & Finishing

(b) Four (4) Phase I production lines, consisting of the following:

(1) Line 1 (constructed in 1996, modified in 1998, modified in 2007, and modified in 2011)

(A) One (1) Line 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) Line 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) Line 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;

Under 40 CFR 63, Subpart EEEEE (NESHAP for Iron and Steel Foundries) the Phase I Line 1 pouring/mold cooling, shakeout, and cast cooling operations are affected facilities.

The shakeout and cast cooling operations do not have specific applicable requirements under this NESHAP for existing affected facilities.

(2) Line 2 (constructed in 1996, and modified in 2011)

(A) One (1) Line 2 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) Line 2 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) Line 2 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;

Under 40 CFR 63, Subpart EEEEE (NESHAP for Iron and Steel Foundries) the Phase I Line 2 pouring/mold cooling, shakeout, and cast cooling operations are affected facilities.

The shakeout and cast cooling operations do not have specific applicable requirements under this NESHAP for existing affected facilities.

(3) Line 3 (constructed in 1996, and modified in 2011)

(A) One (1) Line 3 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) Line 3 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) Line 3 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;

Under 40 CFR 63, Subpart EEEEE (NESHAP for Iron and Steel Foundries) the Phase I Line 3 pouring/mold cooling, shakeout, and cast cooling operations are affected facilities.

The shakeout and cast cooling operations do not have specific applicable requirements under this NESHAP for existing affected facilities.

(4) Line 4 (constructed in 1996, modified in 2011, and approved in 2014 for modification)

(A) One (1) Line 4 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) Line 4 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) Line 4 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;

Under 40 CFR 63, Subpart EEEEE (NESHAP for Iron and Steel Foundries) the Phase I Line 4 pouring/mold cooling, shakeout, and cast cooling operations are affected facilities.

The shakeout and cast cooling operations do not have specific applicable requirements under this NESHAP for existing affected facilities.

Phase I Sand Handling & Ancillary Operations

(c) Sand handling operations and ancillary operations, consisting of the following:

Phase I Core Making Operations

(7) One (1) Phase I core sand handling operation, identified as P40, constructed in 1996, with a maximum throughput of 16 tons per hour, using one (1) baghouse (C08) for particulate control, exhausting to stack S08;

(8) One (1) Phase I core manufacturing operation, identified as P41, constructed in 1996, with a maximum throughput of 16 tons per hour, exhausting to stack S11;

(9) One (1) Phase I core machine & oven operation, identified as P51, constructed in 1996, with a maximum heat input capacity of 16.8 MMBtu per hour, combusting natural gas, exhausting to stack S11;

Under 40 CFR 63, Subpart EEEEE (NESHAP for Iron and Steel Foundries) the Phase I Core Making Operations are affected facilities.

The coremaking operations do not have specific applicable requirements under this NESHAP, because the requirements under this NESHAP only apply to triethylamine (TEA) cold box or core making lines at iron and steel foundries.

Phase II Metal Melting

(d) One (1) Phase II cupola iron melting system, identified as P33, constructed in 1998 and modified in 2011, 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;

Under 40 CFR 63, Subpart EEEEE (NESHAP for Iron and Steel Foundries) the Phase II cupola iron melting system is an affected facility.

Phase II Casting & Finishing

(e) Four (4) Phase II production lines, consisting of the following:

(1) Line 5 (constructed in 1998, and modified in 2011)

(A) One (1) Line 5 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) Line 5 shakeout operation, identified as P61, with a maximum throughput 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) Line 5 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;

Under 40 CFR 63, Subpart EEEEE (NESHAP for Iron and Steel Foundries) the Phase II Line 5 pouring/mold cooling, shakeout, and cast cooling operations are affected facilities.

The shakeout and cast cooling operations do not have specific applicable requirements under this NESHAP for existing affected facilities.

(2) Line 6 (constructed in 1998, and modified in 2011)

(A) One (1) Line 6 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) Line 6 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) Line 6 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;

Under 40 CFR 63, Subpart EEEEE (NESHAP for Iron and Steel Foundries) the Phase II Line 6 pouring/mold cooling, shakeout, and cast cooling operations are affected facilities.

The shakeout and cast cooling operations do not have specific applicable requirements under this NESHAP for existing affected facilities.

(3) Line 7 (constructed in 1998, and modified in 2011)

(A) One (1) Line 7 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) Line 7 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) Line 7 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;

Under 40 CFR 63, Subpart EEEEE (NESHAP for Iron and Steel Foundries) the Phase II Line 7 pouring/mold cooling, shakeout, and cast cooling operations are affected facilities.

The shakeout and cast cooling operations do not have specific applicable requirements under this NESHAP for existing affected facilities.

(4) Line 8 (constructed in 1998, and modified in 2011)

(A) One (1) Line 8 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) Line 8 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) Line 8 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;

Under 40 CFR 63, Subpart EEEEE (NESHAP for Iron and Steel Foundries) the Phase II Line 8 pouring/mold cooling, shakeout, and cast cooling operations are affected facilities.

The shakeout and cast cooling operations do not have specific applicable requirements under this NESHAP for existing affected facilities.

Phase II Sand Handling & Ancillary Operations

(f) Sand handling operations and ancillary operations, consisting of the following:

Phase II Core Making

(16) 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;

(17) One (1) phenolic-urethane core making process, identified as P43, constructed in 1998 and modified in 2001 and 2003, 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;

(18) One (1) phenolic-urethane core making process, identified as P44, constructed in 1998 and modified in 2001 and 2003, consisting of 2 mixers and 2 core machines, each with a maximum capacity of 3 tons of cores per hour (with a combined maximum capacity of 12 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;

Under 40 CFR 63, Subpart EEEEE (NESHAP for Iron and Steel Foundries) the Phase II Core Making Operations are affected facilities.

The coremaking operations do not have specific applicable requirements under this NESHAP, because the requirements under this NESHAP only apply to triethylamine (TEA) cold box or core making lines at iron and steel foundries.

Core Room Expansion I

(g) 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;

(h) One (1) phenolic-urethane core making process, identified as P47, constructed in 2005, consisting of 3 mixers and 3 core machines, each with a maximum capacity of 15 tons of cores per hour, with a combined maximum capacity of 45 tons of cores per hour. DMIPA catalyst emissions are controlled by one (1) packed bed scrubber, identified as C17. The gases are then exhausted to Stack S17;

(i) Three (3) natural gas-fired core drying ovens and natural gas-fired air make-up units, identified as P48, constructed 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 to stack S48;

Under 40 CFR 63, Subpart EEEEE (NESHAP for Iron and Steel Foundries) the Core Room Expansion I operations are affected facilities.

The coremaking operations do not have specific applicable requirements under this NESHAP, because the requirements under this NESHAP only apply to triethylamine (TEA) cold box or core making lines at iron and steel foundries.

Core Room Expansion II

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

(k) Two (2) natural gas-fired core dry ovens, each constructed in 2008, identified as P48A and P48B, with a maximum capacity of 2.5 MMBtu/hr each, utilizing no control, and with emissions exhausting to stacks S48A and S48B, respectively;

Under 40 CFR 63, Subpart EEEEE (NESHAP for Iron and Steel Foundries) the Core Room Expansion II operations are affected facilities.

The coremaking operations do not have specific applicable requirements under this NESHAP, because the requirements under this NESHAP only apply to triethylamine (TEA) cold box or core making lines at iron and steel foundries.

(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)]**

E.1.1 General Provisions Relating to NESHAP EEEEE [326 IAC 20-1-1][40 CFR Part 63, Subpart A]

(a) Pursuant to 40 CFR 63.1, 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, except as otherwise specified 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 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

E.1.2 National Emission Standards for Hazardous Air Pollutants for Iron and Steel Foundries [40 CFR Part 63, Subpart EEEEE]

The Permittee who operates an iron or steel foundry that is a major source of hazardous air pollutants (HAPs) shall comply with the following provisions of 40 CFR Part 63, Subpart EEEEE, included as Attachment B of this permit, with a compliance date of April 23, 2007:

Nonapplicable portions of the NESHAP will not be included in the permit. The source is subject to the following portions of Subpart EEEEE:

(a) 40 CFR 63.7680
(b) 40 CFR 63.7681
(c) 40 CFR 63.7682 (a)-(c)
(d) 40 CFR 63.7683 (a), (b), and (f)
(e) 40 CFR 63.7690 (a)(2), (a)(5), (a)(7), (a)(8), (b)(1), and (b)(3)
(f) 40 CFR 63.7700 (a)-(c)
(g) 40 CFR 63.7710
(h) 40 CFR 63.7720
(i) 40 CFR 63.7730 (a) and (b)
(j) 40 CFR 63.7731
(k) 40 CFR 63.7732 (a), (b)(1)-(3), (b)(6), (c)(1)-(3), (c)(6), (d), (e), (f), (h), (i)
(l) 40 CFR 63.7733 (a), (e), and (f)
(m) 40 CFR 63.7734 (a)(2), (a)(5), (a)(7), (a)(8), (b)(1), (b)(3)
(n) 40 CFR 63.7735 (a) and (b)
(o) 40 CFR 63.7736
(p) 40 CFR 63.7740 (a)-(c) and (e)
(q) 40 CFR 63.7741 (a), (b), (d) and (f)
(r) 40 CFR 63.7742
(s) 40 CFR 63.7743 (a)(2), (a)(5), (a)(7), (a)(8), (a)(12), (b), (c) and (e)
(t) 40 CFR 63.7744 (a)
(u) 40 CFR 63.7745
(v) 40 CFR 63.7746
(w) 40 CFR 63.7747 (c) and (d)
(x) 40 CFR 63.7750 (a), (b), (d) and (e)
(y) 40 CFR 63.7751
(z) 40 CFR 63.7752
(aa) 40 CFR 63.7753
(bb) 40 CFR 63.7760
(cc) 40 CFR 63.7761
(dd) 40 CFR 63.7765
(ee) Table 1 to Subpart EEEEE of Part 63

### E.1.3 Testing Requirements [40 CFR Part 63, Subpart EEEEE]

In order to demonstrate compliance with Condition E.1.2, not later than five (5) years from the most recent compliant stack test, the Permittee shall perform the stack testing required under NESHAP 40 CFR 63, Subpart EEEEE, utilizing methods as approved by the Commissioner.

This testing shall be repeated at least once every five (5) 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 obligation with regard to the performance testing required by this condition.

## SECTION E.2 EMISSIONS UNIT OPERATION CONDITIONS

**Emissions Unit Description:**

(h) Emergency Generators [326 IAC 2-7-1(21)(E), consisting of the follow:

(1) One (1) diesel-fired compression-ignition emergency RICE, constructed in 1997, with a power output of 99 kW, utilizing no control, and exhausting outdoors.

Under NESHAP Subpart ZZZZ, this emergency generator is an existing affected facility.

(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)]**

E.2.1 General Provisions Relating to NESHAP [326 IAC 20-1] [40 CFR 63, Subpart A]

(a) Pursuant to 40 CFR 63.1, 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, except as otherwise specified in 40 CFR 63, Subpart ZZZZ.

(b) Pursuant to 40 CFR 63.10, the Permittee shall submit all required notifications and reports 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

E.2.2 National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines NESHAP [40 CFR Part 63, Subpart ZZZZ] [326 IAC 20-82]

The emergency generator shall comply with the following provisions of 40 CFR Part 63, Subpart ZZZZ (included as Attachment C of this permit), which are incorporated by reference as 326 IAC 20-82, except as otherwise specified in 40 CFR Part 63, Subpart ZZZZ:

(a) 40 CFR 63.6580
(b) 40 CFR 63.6585(a) and (b)
(c) 40 CFR 63.6590(a)(1)(ii)
(d) 40 CFR 63.6595(a)(1) and (c)
(e) 40 CFR 63.6602
(f) 40 CFR 63.6605
(g) 40 CFR 63.6612
(h) 40 CFR 63.6620
(i) 40 CFR 63.6625(e)(2), (f), (h), and (i)
(j) 40 CFR 63.6645(a)(5), (g), (h)
(k) 40 CFR 63.6655 (d), (e)(2), (f)(1)

(l) 40 CFR 63.6660
(m) 40 CFR 63.6665
(n) 40 CFR 63.6670
(o) 40 CFR 63.6675
(p) Table 2c.1
(q) Table 4
(r) Table 6.9
(s) Table 8

## SECTION E.3 EMISSIONS UNIT OPERATION CONDITIONS

**Emissions Unit Description:**

Sand Reclamation System for Phase I and Phase II processes

(l) One (1) sand reclamation system, identified as P27, approved in 2015 for construction, with a maximum throughput rate 9 tons of spent sand per hour, consisting of:

(2) Thermal reclamation equipment listed below, controlled by baghouse C27B and venting to stack S07:

(i) One (1) thermal sand reclaimer, equipped with 10 MMbtu/hr natural gas fired oven

Under NSPS, Subpart UUU, the thermal sand reclaimer is considered a calciner.

(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)]**

E.3.1 General Provisions Relating to NESHAP [326 IAC 20-1] [40 CFR 63, Subpart A]

(a) Pursuant to 40 CFR 60.1, the Permittee shall comply with the provisions of 40 CFR Part 60 Subpart A – General Provisions, which are incorporated by reference as 326 IAC 12-1, for the above listed emissions units, except as otherwise specified in 40 CFR Part 60, Subpart UUU.

(b) Pursuant to 40 CFR 60.4, the Permittee shall submit all required notifications and reports 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

E.3.2 New Source Performance Standard for Calciners and Dryers in Mineral Industries Requirements [326 IAC 12] [40 CFR Part 60, Subpart UUU]

Pursuant to 40 CFR Part 60, Subpart UUU, the Permittee shall comply with the provisions of 40 CFR Part 60, Subpart UUU, which are incorporated by reference as 326 IAC 12 (included as Attachment C to this permit), for the thermal sand reclaimer as specified as follows:

(a) 40 CFR 60.730
(b) 40 CFR 60.731
(c) 40 CFR 60.732
(d) 40 CFR 60.733

(e) 40 CFR 60.734*
(f) 40 CFR 60.735
(g) 40 CFR 60.736
(h) 40 CFR 60.737

* Based on the EPA letter, the source is approved to use BLDS in lieu of COM or Method 9 VE reading specified in 40 CFR 60.734 60 for the thermal sand reclaimer. These BLDS requirements are specified in Conditions D.9.7 and D.9.8 of this permit.

E.3.3 Testing Requirements [40 CFR Part 60, Subpart UUU]

In order to demonstrate compliance with Condition E.3.2, not later than five (5) years from the most recent compliant stack test, the Permittee shall perform the stack testing required under NESHAP 40 CFR 60, Subpart UUU, utilizing methods as approved by the Commissioner.

This testing shall be repeated at least once every five (5) 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 obligation with regard to the performance testing required by this condition.

# INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
# OFFICE OF AIR QUALITY
# COMPLIANCE AND ENFORCEMENT BRANCH
# 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.: T123-33768-00019

**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 AND ENFORCEMENT BRANCH**
**100 North Senate Avenue**
**MC 61-53 IGCN 1003**
**Indianapolis, Indiana 46204-2251**
**Phone: (317) 233-0178**
**Fax: (317) 233-6865**

## PART 70 OPERATING PERMIT
## EMERGENCY OCCURRENCE REPORT

Source Name: Waupaca Foundry, Inc. Plant 5
Source Address: 9856 State Highway 66, Tell City, Indiana 47586
Part 70 Permit No.: T123-33768-00019

**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), within four (**4**) business hours (1-800-451-6027 or 317-233-0178, ask for Compliance Section); and
- The Permittee must submit notice in writing or by facsimile within two (**2**) working days (Facsimile Number: 317-233-6865), and follow the other requirements of 326 IAC 2-7-16.

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

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

If any of the following are not applicable, mark N/A **Page 2 of 2**

| |
|---|
| Date/Time Emergency started: |
| Date/Time Emergency was corrected: |
| Was the facility being properly operated at the time of the emergency? Y N |
| Type of Pollutants Emitted: TSP, PM-10, $SO_2$, VOC, $NO_X$, CO, Pb, other: |
| Estimated amount of pollutant(s) emitted during emergency: |
| Describe the steps taken to mitigate the problem: |
| Describe the corrective actions/response steps taken: |
| Describe the measures taken to minimize emissions: |
| If applicable, describe the reasons why continued operation of the facilities are necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw materials of substantial economic value: |

Form Completed by:_____

Title / Position: _____

Date:_____

Phone: _____

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

## Part 70 Quarterly Report

Source Name: Waupaca Foundry, Inc. Plant 5
Source Address: 9856 State Highway 66, Tell City, Indiana 47586
Part 70 Permit No.: T123-33768-00019
Facility: Phase II phenolic-urethane core making (P44)
Parameter: Binder usage
Limit: The amount of binder used in the two (2) mixers from the Phase II phenolic-urethane core making process identified as P44, combined shall not exceed 390 tons per 12 consecutive month period with compliance determined at the end of each month.

QUARTER : YEAR:

| Month | Column 1 | Column 2 | Column 1 + Column 2 |
|---|---|---|---|
| | Binder Usage This Month | Binder Usage Previous 11 Months | Binder Usage 12 Month Total |
| | | | |
| | | | |
| | | | |

☐ No deviation occurred in this quarter.

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

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

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

## Part 70 Quarterly Report

Source Name: Waupaca Foundry, Inc. Plant 5
Source Address: 9856 State Highway 66, Tell City, Indiana 47586
Part 70 Permit No.: T123-33768-00019
Facility: Phase II phenolic-urethane core making (P44)
Parameter: Core production
Limit: The amount of cores produced by the two (2) core machines from the Phase II phenolic-urethane core making process identified as P44, combined shall not exceed 26,000 tons per 12 consecutive month period with compliance determined at the end of each month.

QUARTER : YEAR:

| Month | Column 1 | Column 2 | Column 1 + Column 2 |
|---|---|---|---|
| | Cores Produced This Month | Cores Produced Previous 11 Months | Cores Produced 12 Month Total |
| | | | |
| | | | |
| | | | |

☐ No deviation occurred in this quarter.

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

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

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

## Part 70 Quarterly Report

Source Name: Waupaca Foundry, Inc. Plant 5
Source Address: 9856 State Highway 66, Tell City, Indiana 47586
Part 70 Permit No.: T123-33768-00019
Facility: Core Room Expansion I phenolic-urethane core making process (P47)
Parameter: Binder usage
Limit: The amount of binder used in all three (3) phenolic-urethane mixers from the Core Room Expansion I phenolic-urethane core making process, 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.

QUARTER : YEAR:

| Month | Column 1 | Column 2 | Column 1 + Column 2 |
|---|---|---|---|
| | Binder Usage This Month | Binder Usage Previous 11 Months | Binder Usage 12 Month Total |
| | | | |
| | | | |
| | | | |

☐ No deviation occurred in this quarter.

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

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

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

## Part 70 Quarterly Report

Source Name: Waupaca Foundry, Inc. Plant 5
Source Address: 9856 State Highway 66, Tell City, Indiana 47586
Part 70 Permit No.: T123-33768-00019
Facility: Core Room Expansion I phenolic-urethane core making process (P47)
Parameter: Core production
Limit: The amount of cores produced by all three (3) core machines from the Core Room Expansion I phenolic-urethane core making process, identified as P47, combined shall not exceed 197,000 tons per 12 consecutive month period, with compliance determined at the end of each month.

QUARTER : YEAR:

| Month | Column 1 | Column 2 | Column 1 + Column 2 |
|---|---|---|---|
| | Cores Produced This Month | Cores Produced Previous 11 Months | Cores Produced 12 Month Total |
| | | | |
| | | | |
| | | | |

☐ No deviation occurred in this quarter.

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

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

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

Source Name: Waupaca Foundry, Inc. Plant 5
Source Address: 9856 State Highway 66, Tell City, Indiana 47586
Part 70 Permit No.: T123-33768-00019

**Months:** _____ **to** _____ **Year:**



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

☐ NO DEVIATIONS OCCURRED THIS REPORTING PERIOD.

☐ THE FOLLOWING DEVIATIONS OCCURRED THIS REPORTING PERIOD

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

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

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

Form Completed by: _____

Title / Position: _____

Date: _____

Phone: _____

**Attachment D**

# Subpart UUU—Standards of Performance for Calciners and Dryers in Mineral Industries

SSM No.: 123-35760-00019
SPM No.: 123-35799-00019

**§60.730 Applicability and designation of affected facility.**

(a) The affected facility to which the provisions of this subpart apply is each calciner and dryer at a mineral processing plant. Feed and product conveyors are not considered part of the affected facility. For the brick and related clay products industry, only the calcining and drying of raw materials prior to firing of the brick are covered.

(b) An affected facility that is subject to the provisions of subpart LL, Metallic Mineral Processing Plants, is not subject to the provisions of this subpart. Also, the following processes and process units used at mineral processing plants are not subject to the provisions of this subpart: vertical shaft kilns in the magnesium compounds industry; the chlorination-oxidation process in the titanium dioxide industry; coating kilns, mixers, and aerators in the roofing granules industry; and tunnel kilns, tunnel dryers, apron dryers, and grinding equipment that also dries the process material used in any of the 17 mineral industries (as defined in §60.731, “Mineral processing plant”).

(c) The owner or operator of any facility under paragraph (a) of this section that commences construction, modification, or reconstruction after April 23, 1986, is subject to the requirements of this subpart.

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**§60.731 Definitions.**

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

*Calciner* means the equipment used to remove combined (chemically bound) water and/or gases from mineral material through direct or indirect heating. This definition includes expansion furnaces and multiple hearth furnaces.

*Control device* means the air pollution control equipment used to reduce particulate matter emissions released to the atmosphere from one or more affected facilities.

*Dryer* means the equipment used to remove uncombined (free) water from mineral material through direct or indirect heating.

*Installed in series* means a calciner and dryer installed such that the exhaust gases from one flow through the other and then the combined exhaust gases are discharged to the atmosphere.

*Mineral processing plant* means any facility that processes or produces any of the following minerals, their concentrates or any mixture of which the majority (>50 percent) is any of the following minerals or a combination of these minerals: alumina, ball clay, bentonite, diatomite, feldspar, fire clay, fuller's earth, gypsum, industrial sand, kaolin, lightweight aggregate, magnesium compounds, perlite, roofing granules, talc, titanium dioxide, and vermiculite.

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**§60.732 Standards for particulate matter.**

Each owner or operator of any affected facility that is subject to the requirements of this subpart shall comply with the emission limitations set forth in this section on and after the date on which the initial performance test required by §60.8 is completed, but not later than 180 days after the initial startup, whichever date comes first. No emissions shall be discharged into the atmosphere from any affected facility that:

(a) Contains particulate matter in excess of 0.092 gram per dry standard cubic meter (g/dscm) [0.040 grain per dry standard cubic foot (gr/dscf)] for calciners and for calciners and dryers installed in series and in excess of 0.057 g/dscm (0.025 gr/dscf) for dryers; and

(b) Exhibits greater than 10 percent opacity, unless the emissions are discharged from an affected facility using a wet scrubbing control device.

[57 FR 44503, Sept. 28, 1992, as amended at 65 FR 61778, Oct. 17, 2000]

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**§60.733 Reconstruction.**

The cost of replacement of equipment subject to high temperatures and abrasion on processing equipment shall not be considered in calculating either the “fixed capital cost of the new components” or the “fixed capital cost that would be required to construct a comparable new facility” under §60.15. Calciner and dryer equipment subject to high temperatures and abrasion are: end seals, flights, and refractory lining.

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**§60.734 Monitoring of emissions and operations.**

(a) With the exception of the process units described in paragraphs (b), (c), and (d) of this section, the owner or operator of an affected facility subject to the provisions of this subpart who uses a dry control device to comply with the mass emission standard shall install, calibrate, maintain, and operate a continuous monitoring system to measure and record the opacity of emissions discharged into the atmosphere from the control device.

(b) In lieu of a continuous opacity monitoring system, the owner or operator of a ball clay vibrating grate dryer, a bentonite rotary dryer, a diatomite flash dryer, a diatomite rotary calciner, a feldspar rotary dryer, a fire clay rotary dryer, an industrial sand fluid bed dryer, a kaolin rotary calciner, a perlite rotary dryer, a roofing granules fluid bed dryer, a roofing granules rotary dryer, a talc rotary calciner, a titanium dioxide spray dryer, a titanium dioxide fluid bed dryer, a vermiculite fluid bed dryer, or a vermiculite rotary dryer who uses a dry control device may have a certified visible emissions observer measure and record three 6-minute averages of the opacity of visible emissions to the atmosphere each day of operation in accordance with Method 9 of appendix A of part 60.

(c) The owner or operator of a ball clay rotary dryer, a diatomite rotary dryer, a feldspar fluid bed dryer, a fuller's earth rotary dryer, a gypsum rotary dryer, a gypsum flash calciner, gypsum kettle calciner, an industrial sand rotary dryer, a kaolin rotary dryer, a kaolin multiple hearth furnace, a perlite expansion furnace, a talc flash dryer, a talc rotary dryer, a titanium dioxide direct or indirect rotary dryer or a vermiculite expansion furnace who uses a dry control device is exempt from the monitoring requirements of this section.

(d) The owner or operator of an affected facility subject to the provisions of this subpart who uses a wet scrubber to comply with the mass emission standard for any affected facility shall install, calibrate, maintain, and operate monitoring devices that continuously measure and record the pressure loss of the gas stream through the scrubber and the scrubbing liquid flow rate to the scrubber. The pressure loss monitoring device must be certified by the manufacturer to be accurate within 5 percent of water column gauge pressure at the level of operation. The liquid flow rate monitoring device must be certified by the manufacturer to be accurate within 5 percent of design scrubbing liquid flow rate.

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**§60.735 Recordkeeping and reporting requirements.**

(a) Records of the measurements required in §60.734 of this subpart shall be retained for at least 2 years.

(b) Each owner or operator who uses a wet scrubber to comply with §60.732 shall determine and record once each day, from the recordings of the monitoring devices in §60.734(d), an arithmetic average over a 2-hour period of both the change in pressure of the gas stream across the scrubber and the flowrate of the scrubbing liquid.

(c) Each owner or operator shall submit written reports semiannually of exceedances of control device operating parameters required to be monitored by §60.734 of this subpart. For the purpose of these reports, exceedances are defined as follows:

(1) All 6-minute periods during which the average opacity from dry control devices is greater than 10 percent; or

(2) Any daily 2-hour average of the wet scrubber pressure drop determined as described in §60.735(b) that is less than 90 percent of the average value recorded according to §60.736(c) during the most recent performance test that demonstrated compliance with the particulate matter standard; or

(3) Each daily wet scrubber liquid flow rate recorded as described in §60.735(b) that is less than 80 percent or greater than 120 percent of the average value recorded according to §60.736(c) during the most recent performance test that demonstrated compliance with the particulate matter standard.

(d) The requirements of this section remain in force until and unless the Agency, in delegating enforcement authority to a State under section 111(c) of the Clean Air Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such State. In that event, affected facilities within the State will be relieved of the obligation to comply with this section provided that they comply with the requirements established by the State.

[57 FR 44503, Sept. 28, 1992, as amended at 58 FR 40591, July 29, 1993]

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**§60.736 Test methods and procedures.**

(a) In conducting the performance tests required in §60.8, the owner or operator shall use the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in §60.8(b).

(b) The owner or operator shall determine compliance with the particulate matter standards in §60.732 as follows:

(1) Method 5 shall be used to determine the particulate matter concentration. The sampling time and volume for each test run shall be at least 2 hours and 1.70 dscm.

(2) Method 9 and the procedures in §60.11 shall be used to determine opacity from stack emissions.

(c) During the initial performance test of a wet scrubber, the owner or operator shall use the monitoring devices of §60.734(d) to determine the average change in pressure of the gas stream across the scrubber and the average flowrate of the scrubber liquid during each of the particulate matter runs. The arithmetic averages of the three runs shall be used as the baseline average values for the purposes of §60.735(c).

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**§60.737 Delegation of authority.**

(a) In delegating implementation and enforcement authority to a State under section 111(c) of the Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authorities which will not be delegated to States: No restrictions.

**Indiana Department of Environmental Management**

**Office of Air Quality**

Technical Support Document (TSD) for a Part 70 Significant Source and 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) |
| Operation Permit No.: | T123-33768-00019 |
| Operation Permit Issuance Date: | July 17, 2014 |
| Significant Source Modification No.: | 123-35760-00019 |
| Significant Permit Modification No.: | 123-35799-00019 |
| Permit Reviewer: | Mehul Sura |

## Existing Approvals

The source was issued Part 70 Operating Permit No. T123-33768-00019 on July 17, 2014. There have been no subsequent approvals issued.

## 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 July 20, 2012, for the 2008 8-hour ozone standard.[1] |
| $PM_{2.5}$ | Unclassifiable or attainment effective April 5, 2005, for the annual $PM_{2.5}$ standard. |
| $PM_{2.5}$ | Unclassifiable or attainment effective December 13, 2009, for the 24-hour $PM_{2.5}$ standard. |
| $PM_{10}$ | 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.

(a) Ozone Standards
Volatile organic compounds (VOC) and Nitrogen Oxides ($NO_x$) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and $NO_x$ emissions are considered when evaluating the rule applicability relating to ozone. Perry County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and $NO_x$ emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

(b) $PM_{2.5}$
Perry County has been classified as attainment for $PM_{2.5}$. Therefore, direct $PM_{2.5}$, $SO_2$, and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

(c) Other Criteria Pollutants
Perry County has been classified as attainment or unclassifiable in Indiana for all other

pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

**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 - Existing Source**

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:

| Process/ Emission Unit | Potential To Emit of the Entire Before Modification (tons/year) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | PM | $PM_{10}$* | $PM_{2.5}$** | $SO_2$ | $NO_x$ | VOC | CO | GHGs | Total HAPs | Worst Single HAP |
| **Total PTE of Entire Source** | > 100 | > 100 | > 100 | > 100 | > 100 | > 100 | > 100 | > 100,000 | > 25 | > 10 |

* Under the Part 70 Permit program (40 CFR 70), PM10 and PM2.5, not particulate matter (PM), are each considered as a regulated air pollutant".
**$PM_{2.5}$ listed is direct $PM_{2.5}$.

(a) This existing source is a major stationary source, under PSD (326 IAC 2-2), because a PSD regulated pollutant, excluding GHGs, is 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(ff)(1).

(b) This existing source is a major source of HAPs, as defined in 40 CFR 63.2, 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).

(c) These emissions are based upon T123-33768-00019, issued on July 17, 2014.

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

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

## Description of Proposed Modification

The Office of Air Quality (OAQ) has reviewed a modification application, submitted by Waupaca Foundry, Inc. Plant 5 on April 27, 2015, to add a new sand reclamation system (P27). The reclaimed sand from this new sand reclamation system (P27) will be used for Phase I and Phase II processes. The description of the new sand reclamation system (P27) is as follows:

Sand Reclamation System for Phase I and Phase II processes

One (1) sand reclamation system, identified as P27, approved in 2015 for construction, with a maximum throughput rate 9 tons of spent sand per hour, consisting of:

(1) Lump crushing and screening equipment listed below, controlled by baghouse C27A and venting to stack S07:

- (i) One (1) lump crusher
- (ii) One (1) sand screen
- (iii) Two (2) bucket elevators
- (iv) One (1) sand and clay separator

(2) Thermal reclamation equipment listed below, controlled by baghouse C27B and venting to stack S07:

- (i) One (1) thermal sand reclaimer, equipped with 10 MMbtu/hr natural gas fired oven
- (ii) One (1) sand cooler
- (iii) One (1) sand and clay separator
- (iv) Two (2) bucket elevators

Under NSPS, Subpart UUU, the thermal sand reclaimer is considered a calciner.

(3) Two (2) iron separators, without control and exhausting inside.

Baghouses C27A and C27B vent to an existing stack S07.

## 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 Modification to an Existing Source

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. This table reflects the PTE before controls. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit. If the control equipment has been

determined to be integral, the table reflects the PTE after consideration of the integral control device.

| Emission Unit | Increase in PTE Before Controls of the Modification (tons/year) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | PM | PM10 | PM2.5 | SO2 | NOX | VOC | CO | lead | Be | GHGs |
| sand reclamation system (P27) | 143.09 | 22.47 | 22.47 | 0.03 | 6.31 | 9.86 | 30.75 | 0.01 | 0.0002 | 48,486.60 |

(a) Significant Source Modification – approval to construct

This source modification is subject to:

(i) 326 IAC 2-7-10.5(g)(4)(A) because the PTE of PM, PM10 and PM2.5, each, is greater than 25, 15 and 10 tons per year, respectively.

(b) Significant Permit Modification – approval to operate

This modification will be incorporated into the Part 70 Operating Permit through a significant permit modification issued pursuant to 326 IAC 2-7-12(d) because this modification requires significant changes to the permit conditions, such as adding PSD minor limits, testing, compliance monitoring and NSPS, Subpart UUU requirements in the permit.

**Permit Level Determination – PSD**

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

| | Project Emissions (ton/yr) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Process / Emission Unit | PM | $PM_{10}$ | $PM_{2.5}$* | $SO_2$ | $NO_X$ | VOC | CO | GHGs | lead | Be |
| sand reclamation system (P27) (excluding two (2) iron separators) | 7.45 (1) | 7.45 (1) | 7.45 (1) | 0.03 | 6.31 | 9.9 (1) | 99.9 (1) | 48,486.6 | 0.01 | 0.0002 |
| two (2) iron separators | 1.18 | 1.18 | 1.18 | - | - | - | - | - | - | - |
| Total for Modification | 8.63 | 8.63 | 8.63 | 0.03 | 6.31 | 9.9 | 99.90 | 48,486.6 | 0.01 | 0.0002 |
| PSD Significant Thresholds | 25 | 15 | 10 | 40 | 40 | 40 | 100 | 75,000 $CO_2e$ | 0.6 | 0.0004 |
| *PM2.5 listed is direct PM2.5. | | | | | | | | | | |

(1) PTE is based on the following limits proposed by the source:

| Emission Unit | Emission Limits (lbs/hr) | | | | |
|---|---|---|---|---|---|
| | PM | PM10 | PM2.5 | VOC | CO |
| sand reclamation system (P27) (excluding two (2) iron separators) | 1.7* | 1.7* | 1.7* | 2.26** | 22.8*** |

(a) PM = PM10 = PM2.5

* Limits are after control. Please refer to Page 22 of TSD Appendix A for the details of these limits.

Limited PTE = 1.7 lb/hr = 7.45 tons/yr

Compliance with the above PM, PM10 and PM2.5 limits in conjunction with the PM, PM10 and PM2.5 emissions from the two (2) iron separators will limit the PM, PM10, and PM2.5 emission from the sand reclamation system (P27) to less than 25, 15 and 10 tons per twelve (12) consecutive month period, respectively, and render 326 IAC 2-2 not applicable.

The baghouses (C27A and C27B) shall be in operation and control particulate emissions at all times the sand reclamation system (P27) is in operation, in order to comply with the PM, PM10 and PM2.5 limits.

(b) VOC and HAPs

** The VOC uncontrolled emission rate provided by the source is 0.25 lbs/ton of reclaimed sand. This emission rate results to a PTE of 9.86 tons per year of VOC emissions as shown below.

VOC PTE = 0.25 lb/ton x 78,840 tons/year x 1 ton/2000 lb = 9.86 tons/year

These emissions are based on the test data of the similar thermal sand reclaimer located at Waupaca Foundry, Inc. Plant 23 in Wisconsin, and therefore, it is considered an alternative emission factor and source specific.

The source requested IDEM that the VOC is used as surrogate for the organic HAPs. Therefore, VOC PTE is limited to less than 10 tons per year, instead of 25 tons per year so that the requirements of 326 IAC 8-1-6 (New facilities; general reduction requirements) and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP)) do not apply to the sand reclamation system (P27). Please refer 326 IAC 2-2 and 326 IAC 8-1-6 rule applicability in 'State Rule Applicability – Individual Facilities' section of this TSD for the details of this these rule applicability.

Limited PTE VOC = 2.26 lb/hr = 9.9 tons/yr

Compliance with the above VOC limit will limit the VOC and CO emissions from the sand reclamation system (P27) to less than 40 tons per twelve (12) consecutive month period, respectively, and render 326 IAC 2-2 not applicable.

(c) CO

*** The CO uncontrolled emission rate provided by the source is 0.78 lbs/ton of reclaimed sand. This emission rate results to a PTE of 30.75 tons per

year of CO emissions as shown below.

PTE CO = 0.78 lb/ton x 78,840 tons/year x 1 ton/2000 lb
= 30.75 tons/year

This emission rate is based on the test data of the similar thermal sand reclaimer located at Waupaca Foundry, Inc. Plant 23 in Wisconsin. This emission rate is considered an alternative emission factor and source specific.

In order to make 100 tons per year CO PTE enforceable, IDEM has determined to include 22.8 lbs/hr CO limit in the permit. Please refer to Page 22 of TSD Appendix A for the detailed derivation of 22.8 lbs/hr CO limit.

Limited PTE CO = 22.8 lbs/hr = 99.86 tons/yr

Compliance with the above VOC and CO limits will limit the VOC and CO emissions from the sand reclamation system (P27) to less than 40 and 100 tons per twelve (12) consecutive month period, respectively, and render 326 IAC 2-2 not applicable.

This modification to an existing major PSD stationary source is not major because:

(a) The emissions increase of each PSD regulated pollutant, excluding GHGs, are less than the PSD significant thresholds; and

(b) The emissions increase of GHGs from this modification to an existing major PSD source are less than seventy-five thousand (75,000) tons of $CO_2$ equivalent ($CO_2e$) emissions per year.

Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply.

| | **Potential To Emit of the Entire After Modification (tons/year)** | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Process/ Emission Unit | PM | $PM_{10}$* | $PM_{2.5}$** | $SO_2$ | $NO_x$ | VOC | CO | GHGs | Total HAPs | Worst Single HAP |
| **Total PTE of Entire Source** | > 100 | > 100 | > 100 | > 100 | > 100 | > 100 | > 100 | > 100,000 | > 25 | > 10 |

* Under the Part 70 Permit program (40 CFR 70), PM10 and PM2.5, not particulate matter (PM), are each considered as a regulated air pollutant".
**$PM_{2.5}$ listed is direct $PM_{2.5}$.

Please refer TSD Appendix A of this TSD for the details of the PTE of the entire source after issuance of this modification.

Please refer TSD Appendix B for the existing and proposed emission unit list and corresponding D Section after issuance of this modification.

## Federal Rule Applicability Determination

**New Source Performance Standards (NSPS)**

(a) Subpart OOO—Standards of Performance for Nonmetallic Mineral Processing Plants

The proposed sand reclamation system (P27) is not subject to the requirements of this rule because this sand reclamation system (P27) has a capacity less than 25 tons per hour.

(b) Subpart UUU—Standards of Performance for Calciners and Dryers in Mineral Industries

The proposed sand reclamation system (P27) is considered mineral processing plant under this NSPS because it is used to process sand and clay.

The sand in the sand cooler is air dried and does not use direct or indirect heating. Therefore, the sand cooler is not considered Dryer for the purpose of this NSPS and therefore, it is not subject to the requirements of this NSPS.

The thermal sand reclaimer is considered a calciner under this NSPS (326 IAC 12 and 40 CFR Part 60) because it is used to remove combined (chemically bound) water and/or gases from the sand material through direct or indirect heating. Therefore, the thermal sand reclaimer is considered affected facility under this NSPS.

All other equipment specified under the sand reclamation system (P27) are considered feed and product conveying equipment under this NSPS, therefore, the remaining equipment is not subject to the requirements of this NSPS.

Nonapplicable portions of the NSPS will not be included in the permit. The following requirements shall apply to the thermal sand reclaimer:

(a) 40 CFR 60.730
(b) 40 CFR 60.731
(c) 40 CFR 60.732
(d) 40 CFR 60.733
(e) 40 CFR 60.734
(f) 40 CFR 60.735
(g) 40 CFR 60.736
(h) 40 CFR 60.737

This is a new applicable requirement.

40 CFR 60.732 specifies testing requirements.

This NSPS requires to monitor opacity for the thermal sand reclaimer by either installing continuous opacity monitor (COM) or performing Method 9 visible emissions (VE) observation on each day of operation. The source operates another foundry in Wisconsin (Waupaca Foundry, Inc. Plant 2/3). The source requested EPA to use Bag leak detection systems (BLDS) as an alternative monitoring method in lieu of COM or Method 9 VE reading as specified in 40 CFR 60, Subpart UUU for this Wisconsin foundry(Waupaca Foundry, Inc. Plant 2/3). EPA approved this request in April 2013 through a formal letter. On the basis of this letter, the source has requested IDEM to use BLDS (in lieu of COM or Method 9 VE reading as specified in 40 CFR 60, Subpart UUU) for the proposed thermal sand reclaimer. Based on the EPA letter (please refer Appendix C of this TSD), the source is approved to use BLDS in lieu of COM or Method 9 VE reading specified in 40 CFR 60.734 60 for the proposed thermal sand reclaimer.

However, if the BLDS is down for a period of at least 24 hours, the source has to comply with the NSPS requirement.

(c) There are no other NSPS (326 IAC 12 and 40 CFR Part 60) included in due to this proposed modification.

**National Emission Standards for Hazardous Air Pollutants (NESHAP)**

There are no NESHAP (326 IAC 14, 326 IAC 20 and 40 CFR Part 63) included in due to this proposed modification.

**Compliance Assurance Monitoring (CAM)**
Pursuant to 40 CFR 64.2, Compliance Assurance Monitoring (CAM) is applicable to new or modified emission units that involve a pollutant-specific emission unit and meet 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.

The following table is used to identify the applicability of each of the criteria, under 40 CFR 64.1, to each new or modified emission unit involved:

The sand reclamation system (P27) is not equipped with SO2, NOx, VOC, CO, single HAP and combined HAPs add-on controls. Therefore, CAM for SO2, NOx, VOC, CO, single HAP and combined HAPs does not apply to the sand reclamation system (P27).

The sand reclamation system (P27) is equipped with particulate add-on control. Therefore, CAM for PM, PM10 and PM2.5 has been evaluated as below.

| CAM Applicability Analysis | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Emission Unit** | **pollutants** | **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) |
| sand reclamation system (P27) | PM | baghouses (C27A and C27B) | Y | >100 | <100 | 100 | Y | N |
| | PM10 | | Y | >100 | <100 | 100 | Y | N |
| | PM2.5 | | Y | >100 | <100 | 100 | Y | N |

Based on this evaluation, the requirements of 40 CFR Part 64, CAM are applicable to sand reclamation system (P27) for PM, PM10, PM2.5 upon issuance of the Title V Renewal. A CAM plan must be submitted as part of the Renewal application.

**State Rule Applicability Determination**

**326 IAC 2-2 (PSD)**
PSD applicability is discussed under the Permit Level Determination – PSD section.

**326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))**
The source has provided metallic HAPs emissions from the thermal sand reclaimer but not provided organic HAPs emissions from the sand reclamation system (P27). The following HAPs limits will be included in the permit:

| Emission Unit | single HAP (lbs/hr) | combined HAPs (lbs/hr) |
|---|---|---|
| sand reclamation system (P27) | 2.26 | 5.68 |

Compliance with these limits will limit the single HAP and combined HAPs emissions from the sand reclamation system (P27) to less than 10 and 25 tons per year, respectively, and render the requirements of 326 IAC 2-4.1 not applicable.

Please refer Page 22 of TSD Appendix A for the detailed derivation of these limits.

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

**326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)**
Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the allowable particulate matter (PM) rate from the sand reclamation system (P27) shall not exceed 17.87 pounds per hour.

The pound per hour limitation was calculated as follows:

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

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

The controlled emissions from sand reclamation system (P27) is less than the limit, therefore, the sand reclamation system (P27) can comply with this rule. Please refer TSD Appendix A for details of the controlled emission rate.

The baghouses (C27A and C27B) shall be in operation and control particulate emissions at all times the sand reclamation system (P27) is in operation, in order to comply with these limits.

**326 IAC 8-1-6 (New facilities; general reduction requirements)**
The source has proposed 2.26 lbs/hr of VOC limit for the sand reclamation system (P27). In order to render 326 IAC 8-1-6 not applicable, the Permittee shall comply with the following limit:

| Emission Unit | VOC (lbs/hr) |
|---|---|
| sand reclamation system (P27) | 2.26 |

Compliance with this limit will limit the VOC emissions from the sand reclamation system (P27) less 25 tons per twelve (12) consecutive month period and render 326 IAC 8-1-6 not applicable.

Please refer Page 22 of TSD Appendix A for the detailed derivation of this limit.

The above limit is also specified under 'Permit Level Determination – PSD' section of this TSD.

## Compliance Determination and Monitoring Requirements

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

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

**Compliance Monitoring Requirements**

| Control | emission unit | Parameter * | Frequency |
|---|---|---|---|
| baghouses (C27A and C27B) | sand reclamation system (P27) | Bag leak detection using Bag leak detection systems (BLDS) | continuously |

* The pressure drop monitoring requirement for the baghouses (C27A and C27B) are not included because these baghouses are equipped with BLDS.

In the event BLDSs is malfunctioning or is down for maintenance or repairs for a period of at least twenty-four (24) hours, the Permittee shall comply with the requirements under NSPS 40 CFR Part 60, Subpart UUU.

This monitoring condition is necessary for the baghouses because these baghouses must operate properly to ensure compliance with 326 IAC 2-2, 326 IAC 6-3 and 326 IAC 2-7 (Part 70).

| emission unit | Parameter | Frequency |
|---|---|---|
| thermal sand reclaimer | operating temperature | continuously |

These monitoring condition is necessary because the combustion temperature of the thermal sand reclaimer must be maintained properly to ensure compliance with 326 IAC 2-2, 326 IAC 8-1-6 and 326 IAC 2-7 (Part 70).

**Testing requirements**

| Emission Unit | Control Device | Pollutant | Timeframe for Testing | Frequency of Testing |
|---|---|---|---|---|
| sand reclamation system (P27) | baghouses (C27A and C27B) | PM | no later than 180 days after the startup of the sand reclamation system (P27) | once every five (5) years |
| | | PM10 (filterable and condensable, combined) | | |
| | | PM2.5 (filterable and condensable, combined) | | |
| | none | VOC | | one-time testing only |
| | | CO | | |

The metallic HAPs emissions from the sand reclamation system (P27) are negligible. Therefore, Lead and Beryllium testing requirement has not been included. It is assumed that the VOC is surrogate for the organic HAPs, therefore, the HAPs testing requirements have not been included.

The sand reclamation system (P27) is exhausting to stack S07. There are also other existing emission units exhausting to the stack S07. The source may be required to isolate the emissions from the sand

reclamation system (P27) to demonstrate the compliance with the limits for the sand reclamation system (P27).

There are also separate limits and testing requirements under the NSPS 40 CFR Part 60, Subpart UUU.

**Proposed Changes**

The changes listed below have been made to Part 70 Operating Permit No. T123-33768-00019. Deleted language appears as ~~strikethroughs~~ and new language appears in **bold**:

(a) Section B - Annual Compliance Certification and C.19 General Reporting Requirements have been revised for clarification.

(b) Section B - Emergency Provisions has been revised for to add reference to Southwest Regional Office.

(c) Part 70 Quarterly Report Forms have been updated to remove the words 'Month 1', 'Month 2' and 'Month 3'.

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

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

Phase I

. . .

Phase I Casting & Finishing

(b) Four (4) Phase I production lines, consisting of the following:

(1) Line 1 (constructed in 1996, modified in 1998, modified in 2007, and modified in 2011)

. . .

(C) . . .

Under 40 CFR 63, Subpart EEEEE (NESHAP for Iron and Steel Foundries) the Phase I Line 1 pouring/mold cooling, shakeout, and cast cooling operations are affected facilities.

~~Note that the~~**The** shakeout and cast cooling operations do not have specific applicable requirements under this NESHAP for existing affected facilities.

. . .

(2) Line 2 (constructed in 1996, and modified in 2011)

. . .

(C) . . .

. . .

~~Note that the~~**The** shakeout and cast cooling operations do not have specific

applicable requirements under this NESHAP for existing affected facilities.

. . .

(3) Line 3 (constructed in 1996, and modified in 2011)

. . .

(C) . . .

. . .

~~Note that the~~**The** shakeout and cast cooling operations do not have specific applicable requirements under this NESHAP for existing affected facilities.

. . .

(4) Line 4 (constructed in 1996, modified in 2011, and approved in 2014 for modification)

. . .

(C) . . .

. . .

~~Note that the~~**The** shakeout and cast cooling operations do not have specific applicable requirements under this NESHAP for existing affected facilities.

. . .

Phase I Sand Handling & Ancillary Operations

. . .

Phase I Core Making Operations

. . .

(9) . . .

. . .

~~Note that the~~**The** coremaking operations do not have specific applicable requirements under this NESHAP, because the requirements under this NESHAP only apply to triethylamine (TEA) cold box or core making lines at iron and steel foundries.

Phase I Ladle Operations

. . .

(12) . . .

~~Note:~~ A portion of the ladle filling & iron transport operation, identified as P85, is released inside the building and not ventilated to baghouse C44.

. . .

Phase II

. . .

Phase II Casting & Finishing

(e) Four (4) Phase II production lines, consisting of the following:

(1) Line 5 (constructed in 1998, and modified in 2011)

. . ..

(C) . . .

. . .

~~Note that the~~**The** shakeout and cast cooling operations do not have specific applicable requirements under this NESHAP for existing affected facilities.

. . .

(2) Line 6 (constructed in 1998, and modified in 2011)

. . .

(C) . . .

. . .

~~Note that the~~**The** shakeout and cast cooling operations do not have specific applicable requirements under this NESHAP for existing affected facilities.

. . .

(3) Line 7 (constructed in 1998, and modified in 2011)

. . .

(C) . . .

. . .

~~Note that the~~**The** shakeout and cast cooling operations do not have specific applicable requirements under this NESHAP for existing affected facilities.

. . .

(4) Line 8 (constructed in 1998, and modified in 2011)

. . .

(C) . . .

. . .

~~Note that the~~**The** shakeout and cast cooling operations do not have specific applicable requirements under this NESHAP for existing affected facilities.

. . .

Phase II Sand Handling & Ancillary Operations

(f) Sand handling operations and ancillary operations, consisting of the following:

. . .

Phase II Ductile Iron Treatment

(14) . . .

~~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.

. . .

Phase II Core Making

. . .

(18) . . .

. . .

~~Note that the~~**The** coremaking operations do not have specific applicable requirements under this NESHAP, because the requirements under this NESHAP only apply to triethylamine (TEA) cold box or core making lines at iron and steel foundries.

. . .

Core Room Expansion I

. . .

(i) . . .

. . .

~~Note that the~~**The** coremaking operations do not have specific applicable requirements under this NESHAP, because the requirements under this NESHAP only apply to triethylamine (TEA) cold box or core making lines at iron and steel foundries.

Core Room Expansion II

. . .

(k) . . .

. . .

~~Note that the~~**The** coremaking operations do not have specific applicable requirements under this NESHAP, because the requirements under this NESHAP only apply to triethylamine (TEA) cold

box or core making lines at iron and steel foundries.

. . .

**Sand Reclamation System for Phase I and Phase II processes**

**(l) One (1) sand reclamation system, identified as P27, approved in 2015 for construction, with a maximum throughput rate 9 tons of spent sand per hour, consisting of:**

**(1) Lump crushing and screening equipment listed below, controlled by baghouse C27A and venting to stack S07:**

**(i) One (1) lump crusher**
**(ii) One (1) sand screen**
**(iii) Two (2) bucket elevators**
**(iv) One (1) sand and clay separator**

**(2) Thermal reclamation equipment listed below, controlled by baghouse C27B and venting to stack S07:**

**(i) One (1) thermal sand reclaimer, equipped with 10 MMbtu/hr natural gas fired oven**
**(ii) One (1) sand cooler**
**(iii) One (1) sand and clay separator**
**(iv) Two (2) bucket elevators**

**Under NSPS, Subpart UUU, the thermal sand reclaimer is considered a calciner.**

**(3) Two (2) iron separators, without control and exhausting inside.**

. . .

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~~**The initial certification shall cover the time period from the date of final permit issuance through December 31 of the same year. All subsequent** 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:

. . .

. . .

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

(a) . . .

(b) . . .

(4) For each emergency lasting one (1) hour or more, the Permittee notified IDEM, OAQ **or Southwest Regional Office** within four (4) daytime business hours after the beginning of the emergency, or after the emergency was discovered or reasonably should have been discovered;

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

(5) . . .

. . .

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] [40 CFR 64][326 IAC 3-8]

. . .

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

. . .

**SECTION D.2 EMISSIONS UNIT OPERATION CONDITIONS**

**Emissions Unit Description: Stacks S01, S04, and S07**

Phase I Casting & Finishing

(b) Four (4) Phase I production lines, consisting of the following:

(1) . . .

~~Note that the~~**The** shakeout and cast cooling operations do not have specific applicable requirements under this NESHAP for existing affected facilities.

. . .

(2) Line 2 (constructed in 1996, and modified in 2011)

. . .

~~Note that the~~**The** shakeout and cast cooling operations do not have specific applicable requirements under this NESHAP for existing affected facilities~~.~~

. . .

(3) Line 3 (constructed in 1996, and modified in 2011)

. . .

~~Note that the~~**The** shakeout and cast cooling operations do not have specific applicable

requirements under this NESHAP for existing affected facilities.

. . .

(4) Line 4 (constructed in 1996, modified in 2011, and approved in 2014 for modification)

. . .

~~Note that the~~**The** shakeout and cast cooling operations do not have specific applicable requirements under this NESHAP for existing affected facilities.

. . .

. . .

. . .

**SECTION D.3 EMISSIONS UNIT OPERATION CONDITIONS**

**Emissions Unit Description: Stacks 15 & 16**

. . .

Phase II Casting & Finishing

(e) Four (4) Phase II production lines, consisting of the following:

(1) . . .

~~Note that the~~**The** shakeout and cast cooling operations do not have specific applicable requirements under this NESHAP for existing affected facilities..

. . .

(2) Line 6 (constructed in 1998, and modified in 2011)

. . .

~~Note that the~~**The** shakeout and cast cooling operations do not have specific applicable requirements under this NESHAP for existing affected facilities.

. . .

(3) Line 7 (constructed in 1998, and modified in 2011)

. . .

~~Note that the~~**The** shakeout and cast cooling operations do not have specific applicable requirements under this NESHAP for existing affected facilities.

. . .

(4) Line 8 (constructed in 1998, and modified in 2011)

. . .

~~Note that the~~**The** shakeout and cast cooling operations do not have specific applicable requirements under this NESHAP for existing affected facilities.

. . .

Phase II Sand Handling & Ancillary Operations

. . .

Phase II Ductile Iron Treatment

(14) . . .

~~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.

. . .

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

. . .

**SECTION D.4 EMISSIONS UNIT OPERATION CONDITIONS**

**Emissions Unit Description: Core Making (Stacks S08, S11, S14, S17, S48, S48A, and S48B)**

Phase I Sand Handling & Ancillary Operations

(c) Sand handling operations and ancillary operations, consisting of the following:

Phase I Core Making Operations

. . .

~~Note that the~~**The** coremaking operations do not have specific applicable requirements under this NESHAP, because the requirements under this NESHAP only apply to triethylamine (TEA) cold box or core making lines at iron and steel foundries.

Phase II Sand Handling & Ancillary Operations

(f) Sand handling operations and ancillary operations, consisting of the following:

Phase II Core Making

. . .

~~Note that the~~**The** coremaking operations do not have specific applicable requirements under this NESHAP, because the requirements under this NESHAP only apply to triethylamine (TEA) cold box or core making lines at iron and steel foundries.

Core Room Expansion I

. . .

~~Note that the~~**The** coremaking operations do not have specific applicable requirements under this NESHAP, because the requirements under this NESHAP only apply to triethylamine (TEA) cold box or core making lines at iron and steel foundries.

Core Room Expansion II

. . .

~~Note that the~~**The** coremaking operations do not have specific applicable requirements under this NESHAP, because the requirements under this NESHAP only apply to triethylamine (TEA) cold box or core making lines at iron and steel foundries.

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

. . .

**SECTION D.5 EMISSIONS UNIT OPERATION CONDITIONS**

**Emissions Unit Description: Stack S44**

Phase I Sand Handling & Ancillary Operations

(c) Sand handling operations and ancillary operations, consisting of the following:

. . .

Phase I Ladle Operations

. . .

~~Note:~~ A portion of the ladle filling & iron transport operation, identified as P85, is released inside the building and not ventilated to baghouse C44.

. . .

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

. . .

**SECTION D.9 EMISSIONS UNIT OPERATION CONDITIONS**

**Emissions Unit Description:**

**Sand Reclamation System for Phase I and Phase II processes**

**(l) One (1) sand reclamation system, identified as P27, approved in 2015 for construction, with a maximum throughput rate 9 tons of spent sand per hour, consisting of:**

**(1) Lump crushing and screening equipment listed below, controlled by baghouse**

**C27A and venting to stack S07:**

**(i) One (1) lump crusher**
**(ii) One (1) sand screen**
**(iii) Two (2) bucket elevators**
**(iv) One (1) sand and clay separator**

**(2) Thermal reclamation equipment listed below, controlled by baghouse C27B and venting to stack S07:**

**(i) One (1) thermal sand reclaimer, equipped with 10 MMbtu/hr natural gas fired oven**
**(ii) One (1) sand cooler**
**(iii) One (1) sand and clay separator**
**(iv) Two (2) bucket elevators**

**Under NSPS, Subpart UUU, the thermal sand reclaimer is considered a calciner.**

**(3) Two (2) iron separators, without control and exhausting inside.**

**(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 PSD Minor [326 IAC 2-2], BACT avoidance Limit [326 IAC 8-1-6] and HAPs Minor Limits [326 IAC 2-4.1]**

**In order to render the requirements of 326 IAC 2-2, 326 IAC 8-1-6 and 326 IAC 2-4.1 not applicable, the Permittee shall comply with the following limits for the sand reclamation system (P27):**

**(a) The total PM emissions after control (baghouses (C27A and C27B)) shall not exceed 1.7 pounds per hour.**

**(b) The total PM10 emissions after control (baghouses (C27A and C27B)) shall not exceed 1.7 pounds per hour.**

**(c) The total PM2.5 emissions after control (baghouses (C27A and C27B)) shall not exceed 1.7 pounds per hour.**

**(d) The VOC emissions shall not exceed 2.26 pounds per hour.**

**(e) The CO emissions shall not exceed 22.8 pounds per hour.**

**(f) The single HAP emissions shall not exceed 2.26 pounds per hour.**

**(g) The combined HAPs emissions shall not exceed 5.68 pounds per hour.**

**Compliance with the above PM, PM10 and PM2.5 limits in conjunction with the PM, PM10 and PM2.5 emissions from the two (2) iron separators will limit the PM, PM10, and PM2.5 emission from the sand reclamation system (P27) to less than 25, 15 and 10 tons per twelve (12) consecutive month period, respectively, and render 326 IAC 2-2 not applicable to this 2015 modification.**

**Compliance with the above VOC and CO limits will limit the VOC and CO emissions from the sand reclamation system (P27) to less than 40 and 100 tons per twelve (12)**

**consecutive month period, respectively, and render 326 IAC 2-2 not applicable to this 2015 modification and 326 IAC 8-1-6 not applicable to the sand reclamation system (P27).**

**Compliance with the above HAPs limits will limit the single HAP and combined HAPs emissions from the sand reclamation system (P27) less 10 and 25 tons per twelve (12) consecutive month period, respectively, and render 326 IAC 2-4.1 not applicable to the sand reclamation system (P27).**

**D.9.2 Particulate [326 IAC 6-3-2]**

**Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the allowable particulate matter (PM) rate from the sand reclamation system (P27) shall not exceed 17.87 pounds per hour.**

**The pound per hour limitation was calculated as follows:**

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

**E = 4.10 P0.67** **where E = rate of emission in pounds per hour, and P = process weight rate in tons per hour**

**D.9.3 Preventive Maintenance Plan [326 IAC 2-7-5(13)]**

**A Preventive Maintenance Plan is required for this facility and its control devices. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.**

**Compliance Determination Requirements**

**D.9.4 Testing Requirements [326 IAC 2-7-6(1),(6)] [326 IAC 2-1.1-11]**

**(a) In order to demonstrate the compliance status with Conditions D.9.1(a) through (c), the Permittee shall perform PM, PM10 and PM2.5 testing for the baghouses (C27A and C27B) equipped on the sand reclamation system (P27) no later than one hundred eighty (180) days after the initial startup of the sand reclamation system (P27). The test shall be repeated at least once every five (5) years from the date of this valid compliance demonstration.**

**PM10 and PM2.5 includes filterable and condensable PM.**

**(b) In order to demonstrate the compliance status with Conditions D.9.1(d) and (e), the Permittee shall perform VOC and CO testing for the sand reclamation system (P27) no later than one hundred eighty (180) days after the initial startup of the sand reclamation system (P27).**

**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 obligation with regard to the performance testing required by this condition.**

**D.9.5 Particulate Control**

**In order to comply with Conditions D.9.1(a) through (c) and D.9.2, the baghouses (C27A and C27B) for particulate control shall be in operation and control emissions from the sand reclamation system (P27) at all times that the sand reclamation system (P27) is in operation.**

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

**D.9.6 Thermal Sand Reclaimer Temperature**

**(a) A continuous monitoring system shall be calibrated, maintained, and operated on the thermal sand reclaimer for measuring operating temperature. For the purpose of this condition, continuous means no less often than once per fifteen (15) minutes. The output of this system shall be recorded as 3-hour average. From the date of startup until the stack test results are available, the Permittee shall operate the thermal sand reclaimer at or above the 3-hour average temperature of 1,300°F.**

**(b) The Permittee shall determine the 3-hour average temperature from the most recent valid stack test that demonstrates compliance with limits in Conditions D.9.1(d) and (e).**

**(c) On and after the date the stack test results are available, the Permittee shall operate the thermal sand reclaimer at or above the 3-hour average temperature as observed during the compliant stack test.**

**D.9.7 Bag leak detection systems (BLDSs)**

**(a) The Permittee shall install and operate continuous Bag leak detection systems (BLDSs) for the baghouses (C27A and C27B).**

**The BLDS shall meet the following requirements:**

**(i) The BLDSs must be certified by the manufacturer to be capable of detecting particulate matter emissions.**

**(ii) The BLDS sensor must provide output of relative particulate matter loading.**

**(iii) The BLDS must be equipped with an alarm system that will alarm when an increase in relative particulate loading is detected over a preset level.**

**(iv) The BLDS shall be installed and operated in a manner consistent with available written guidance from the U.S. Environmental Protection Agency or, in the absence of such written guidance, the manufacturer's written specifications and recommendations for installation, operation, and adjustment of the system.**

**(v) The initial adjustment of the system shall, at a 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.**

**(vi) In no event shall the sensitivity be increased by more than 100 percent or decreased by more than 50 percent over a 365 day period unless such adjustment follows a complete baghouse inspection, which demonstrates the baghouse is in good operating condition.**

**(vii) The bag detector must be installed downstream of the baghouses.**

**(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.9.8 Visible Emissions Notations**

**(a) In the event BLDSs is malfunctioning or is down for maintenance or repairs for a period of twenty-four (24) hours, visible emission notations of the baghouses (C27A and C27B) stack S07 exhaust shall be performed at least once per day during normal daylight operations. 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. Observation of abnormal emissions that do not violate an applicable opacity limit is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit. Section C – Response to Excursions and Exceedances contains the Permittee's obligations with regard to the reasonable response steps required by this condition.**

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

**D.9.9 Record Keeping Requirements**

**(a) To document the compliance status with Condition D.9.6, the Permittee shall maintain the continuous temperature records for the thermal sand reclaimer and the 3-hour average temperature used to demonstrate compliance during the most recent compliant stack test.**

**(b) To document compliance with Condition D.9.7, the Permittee shall maintain records of each alarm.**

**(c) To document the compliance status with Condition D.9.8, the Permittee shall maintain following:**

**(1) Records of the date and time period during which the BLDSs malfunction occurred or was down for maintenance or repairs, and**

**(2) Daily records of visible emission notations of the stack S07.**

**The Permittee shall include in its daily record when a visible emission notation is not taken when BLDSs malfunction occurred or was down and the reason for the lack of visible emission notation (e.g. the process did not operate that day).**

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

**SECTION E.1 EMISSIONS UNIT OPERATION CONDITIONS**

**Emissions Unit Description:**

. . .

Phase I Casting & Finishing

(b) Four (4) Phase I production lines, consisting of the following:

. . .

~~Note that the~~**The** shakeout and cast cooling operations do not have specific applicable requirements under this NESHAP for existing affected facilities.

(2) Line 2 (constructed in 1996, and modified in 2011)

. . .

~~Note that the~~**The** shakeout and cast cooling operations do not have specific applicable requirements under this NESHAP for existing affected facilities.

(3) Line 3 (constructed in 1996, and modified in 2011)

. . .

~~Note that the~~**The** shakeout and cast cooling operations do not have specific applicable requirements under this NESHAP for existing affected facilities.

(4) Line 4 (constructed in 1996, modified in 2011, and approved in 2014 for modification)

. . .

~~Note that the~~**The** shakeout and cast cooling operations do not have specific applicable requirements under this NESHAP for existing affected facilities.

Phase I Sand Handling & Ancillary Operations

(c) Sand handling operations and ancillary operations, consisting of the following:

Phase I Core Making Operations

. . .

~~Note that the~~**The** coremaking operations do not have specific applicable requirements under this NESHAP, because the requirements under this NESHAP only apply to triethylamine (TEA) cold box or core making lines at iron and steel foundries.

Phase II Metal Melting

. . .

Phase II Casting & Finishing

(e) Four (4) Phase II production lines, consisting of the following:

. . .

~~Note that the~~**The** shakeout and cast cooling operations do not have specific applicable requirements under this NESHAP for existing affected facilities.

(2) Line 6 (constructed in 1998, and modified in 2011)

. . .

~~Note that the~~**The** shakeout and cast cooling operations do not have specific applicable requirements under this NESHAP for existing affected facilities.

(3) Line 7 (constructed in 1998, and modified in 2011)

. . .

~~Note that the~~**The** shakeout and cast cooling operations do not have specific applicable requirements under this NESHAP for existing affected facilities.

(4) Line 8 (constructed in 1998, and modified in 2011)

. . .

~~Note that the~~**The** shakeout and cast cooling operations do not have specific applicable requirements under this NESHAP for existing affected facilities.

Phase II Sand Handling & Ancillary Operations

(f) Sand handling operations and ancillary operations, consisting of the following:

Phase II Core Making

. . .

~~Note that the~~**The** coremaking operations do not have specific applicable requirements under this NESHAP, because the requirements under this NESHAP only apply to triethylamine (TEA) cold box or core making lines at iron and steel foundries.

Core Room Expansion I

. . .

(i) . . .

. . .

~~Note that the~~**The** coremaking operations do not have specific applicable requirements under this NESHAP, because the requirements under this NESHAP only apply to triethylamine (TEA) cold box or core making lines at iron and steel foundries.

Core Room Expansion II

. . .

~~Note that the~~**The** coremaking operations do not have specific applicable requirements under this NESHAP, because the requirements under this NESHAP only apply to triethylamine (TEA) cold box or

core making lines at iron and steel foundries.

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

. . .

**SECTION E.3 EMISSIONS UNIT OPERATION CONDITIONS**

**Emissions Unit Description:**

**Sand Reclamation System for Phase I and Phase II processes**

**(l) One (1) sand reclamation system, identified as P27, approved in 2015 for construction, with a maximum throughput rate 9 tons of spent sand per hour, consisting of:**

**(2) Thermal reclamation equipment listed below, controlled by baghouse C27B and venting to stack S07:**

**(i) One (1) thermal sand reclaimer, equipped with 10 MMbtu/hr natural gas fired oven**

**Under NSPS, Subpart UUU, the thermal sand reclaimer is considered a calciner.**

**(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)]**

**E.3.1 General Provisions Relating to NESHAP [326 IAC 20-1] [40 CFR 63, Subpart A]**

**(a) Pursuant to 40 CFR 60.1, the Permittee shall comply with the provisions of 40 CFR Part 60 Subpart A – General Provisions, which are incorporated by reference as 326 IAC 12-1, for the above listed emissions units, except as otherwise specified in 40 CFR Part 60, Subpart UUU.**

**(b) Pursuant to 40 CFR 60.4, the Permittee shall submit all required notifications and reports 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**

**E.3.2 New Source Performance Standard for Calciners and Dryers in Mineral Industries Requirements [326 IAC 12] [40 CFR Part 60, Subpart UUU]**

**Pursuant to 40 CFR Part 60, Subpart UUU, the Permittee shall comply with the provisions of 40 CFR Part 60, Subpart UUU, which are incorporated by reference as 326 IAC 12 (included as Attachment C to this permit), for the thermal sand reclaimer as specified as follows:**

**(a) 40 CFR 60.730**
**(b) 40 CFR 60.731**
**(c) 40 CFR 60.732**
**(d) 40 CFR 60.733**
**(e) 40 CFR 60.734***
**(f) 40 CFR 60.735**
**(g) 40 CFR 60.736**
**(h) 40 CFR 60.737**

*** Based on the EPA letter, the source is approved to use BLDS in lieu of COM or Method 9 VE reading specified in 40 CFR 60.734 60 for the thermal sand reclaimer. These BLDS requirements are specified in Condition D.9.7 of this permit.**

**E.3.3 Testing Requirements [40 CFR Part 60, Subpart UUU]**

**In order to demonstrate compliance with Condition E.3.2, not later than five (5) years from the most recent compliant stack test, the Permittee shall perform the stack testing required under NESHAP 40 CFR 60, Subpart UUU, utilizing methods as approved by the Commissioner.**

**This testing shall be repeated at least once every five (5) 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 obligation with regard to the performance testing required by this condition.**

## Conclusion and Recommendation

The construction and operation of this proposed modification shall be subject to the conditions of the attached proposed Part 70 Significant Source Modification No. 123-35760-00019 and Significant Permit Modification No. 123-35799-00019, respectively. The staff recommend to the Commissioner that this Part 70 Significant Source and 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 Permit Guide on the Internet at: http://www.in.gov/idem/5881.htm; and the Citizens' Guide to IDEM on the Internet at: http://www.in.gov/idem/6900.htm.

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

Company Name: Waupaca Foundry, Inc. Plant 5
Address City IN Zip: 9856 State Highway 66, Tell City, Indiana 47586
SSM No: 123-35760-00019
SPM No. 123-35799-00019
Reviewer: Mehul Sura

| | | | | | Potential Emissions after Limits (tons/yr) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Stack ID** | **Process** | **Year of Construction (Modification)** | **Process ID** | **Control Device** | **PM** | **SO2** | **NOx** | **VOC** | **CO** | **GHGs as CO2e[11]** | **Lead** | **Beryllium** |
| S01 | Line 1 Pouring/Mold Cooling [1] | 1996 (1998, 2007, 2011) | P01 | Three (3) Baghouses (C01, C02, C03) | 140.20 | 8.67 | 17.30 | 688.54 | 2,657.35 | | 1.40 | 0.0026 |
| | Line 1 Shakeout | 1996 (1998, 2007, 2011) | P02 | | | | | | | | | |
| | Line 1 Cast Cooling [2] | 1996 (1998, 2007, 2011) | P03 | | | | | | | | | |
| | Line 1 Pick and Sort | 1996 (1998, 2007, 2011) | P04 | | | | | | | | | |
| | Line 2 Pouring/Mold Cooling | 1996 (2011) | P06 | | | | | | | | | |
| | Line 2 Shakeout | 1996 (2011) | P07 | | | | | | | | | |
| | Line 2 Cast Cooling | 1996 (2011) | P08 | | | | | | | | | |
| | Line 3 Pouring/Mold Cooling | 1996 (2011) | P11 | | | | | | | | | |
| | Line 3 Shakeout | 1996 (2011) | P12 | | | | | | | | | |
| | Line 3 Cast Cooling | 1996 (2011) | P13 | | | | | | | | | |
| | Line 4 Pouring/Mold Cooling | 1996 (2011, 2014) | P16 | | | | | | | | | |
| | Line 4 Shakeout | 1996 (2011, 2014) | P17 | | | | | | | | | |
| | Line 4 Cast Cooling | 1996 (2011, 2014) | P18 | | | | | | | | | |
| | Line 4 Pick and Sort | 1996 (2011, 2014) | P19 | | | | | | | | | |
| | Phase I Return Sand Handling/Screening | 1996 | P21 | | | | | | | | | |
| | Phase I Sand Cooling/Water Addition | 1996 | P22 | | | | | | | | | |
| | Phase I Sand Mulling/Handling | 1996 | P23 | | | | | | | | | |
| | Phase I Spent Sand Handling/Processing | 1996 | P24 | | | | | | | | | |
| | Phase I Air makeup units * | 1996 | P52 | | | | | | | | | |
| | Phase I Line 1 Ladle Cleaning | 1996 (2013) | P86A | | | | | | | | | |
| | Phase I Line 4 Ladle Cleaning | 1996 (2013) | P86B | | | | | | | | | |
| S04 | Line 1 Pouring/Mold Cooling [1] | 1996 (1998, 2007, 2011) | P01 | | 7.53 | 1.45 | 0.74 | | 370.11 | | 0.01 | 0.0001 |
| | Line 1 Cast Cooling [2] | 1996 (1998, 2007, 2011) | P03 | | | | | | | | | |
| S07 | Line 1 Cleaning/Grinding | 1996 (1998, 2007, 2011) | P05 | Baghouse (C07) | 34.16 | - | - | - | - | | 0.04 | 0.0007 |
| | Line 2 Pick and Sort | 1996 (2011) | P09 | | | | | | | | | |
| | Line 2 Cleaning/Grinding | 1996 (2011) | P10 | | | | | | | | | |
| | Line 3 Pick and Sort | 1996 (2011) | P14 | | | | | | | | | |
| | Line 3 Cleaning/Grinding | 1996 (2011) | P15 | | | | | | | | | |
| | Line 4 Cleaning/Grinding | 1996 (2011, 2014) | P20 | | | | | | | | | |
| | Phase I Metallic Returns Handling | 1996 | P25 | | | | | | | | | |
| | sand reclamation system (P27) | 2015 | P27 | Baghouses (C27A and C27B) | 8.63 ** | 0.03 | 6.31 | 9.90 | 99.90 | | - | - |
| S08 | Phase I Core sand handling | 1996 | P40 | Baghouse (C08) | 2.63 | - | - | 9.90 | 99.90 | | - | - |
| | Phase II phenolic-urethane core sand handling | 1998 (2008) | P42 | | | | | | | | | |
| S09 | Phase I gray iron cupola | 1996 (2011) | P30 | Baghouse (C09A), Incinerator (C11A), & Lime injection system (C12A) | 54.66 | 192.72 | 385.44 | 17.52 | 350.40 | | 2.37 | 0.007 |
| | Phase II cupola iron melting system | 1998 (2011) | P33 | Baghouse (C09B), Recuperative Incinerator (C11B), & Lime injection system (C12B) | | | | | | | | |
| S11 | Phase I Core manufacturing | 1996 | P41 | No control | 1.01 | 0.04 | 10.29 | 20.60 | 2.58 | | - | - |
| | Phase I Core machine & oven | 1996 | P51 | No control | | | | | | | - | - |
| S12 | Phase I Ladle preheating operation | 1996 | P53 | No control | 0.70 | 0.03 | 7.05 | 0.29 | 1.75 | | - | - |
| S14 | Phase II phenolic-urethane core making [14] | 1998 (2001, 2003) | P43 | Packed bed scrubber (C14) | - | - | - | 45.60 | - | | - | - |
| | Phase II phenolic-urethane core making [14] | 1998 (2001, 2003) | P44 | | - | - | - | | - | | - | - |
| | Core Room Expansion II phenolic-urethane core making [13] | 2008 | P45A | | - | - | - | 10.51 | - | | - | - |
| S15 | Line 5 Pouring/Mold Cooling | 1998 (2011) | P60 | Baghouse (C15) | 135.34 | 8.85 | 4.42 | 619.33 | 2,391.48 | 662,527 | 0.15 | 0.003 |
| | Line 5 Shakeout [3] | 1998 (2011) | P61 | | | | | | | | | |
| | Line 5 Cast Cooling | 1998 (2011) | P62 | | | | | | | | | |
| | Line 6 Pouring/Mold Cooling | 1998 (2011) | P65 | | | | | | | | | |
| | Line 6 Shakeout [4] | 1998 (2011) | P66 | | | | | | | | | |
| | Line 6 Cast Cooling [5] | 1998 (2011) | P67 | | | | | | | | | |
| | Line 7 Pouring/Mold Cooling | 1998 (2011) | P70 | | | | | | | | | |
| | Line 7 Shakeout [6] | 1998 (2011) | P71 | | | | | | | | | |
| | Line 7 Cast Cooling [7] | 1998 (2011) | P72 | | | | | | | | | |
| | Line 8 Pouring/Mold Cooling | 1998 (2011) | P75 | | | | | | | | | |
| | Phase II Return Sand Handling/Screening [8] | 1998 (2011) | P80 | | | | | | | | | |
| | Phase II Sand Mulling and Handling | 1998 (2011) | P81 | | | | | | | | | |
| | Phase II Sand Blending and Cooling | 1998 (2011) | P82 | | | | | | | | | |
| | Phase II Spent Sand and Dust Handling | 1998 (2011) | P83 | | | | | | | | | |
| | Phase II Metal Returns Handling System [9] | 1998 (2011) | P84 | | | | | | | | | |
| | Tumbleblast shotblast machine | 2001 | P55 | | | | | | | | | |
| | Phase II Ductile Iron Treatment Ladle Cleaning [10] | 1998 (2011) | n/a | | | | | | | | | |
| | Phase II two (2) ductile iron treatment stations | 1998 (2001, 2011) | P35 | Baghouses C15 and C35 | | | | | | | | |
| | Phase II Ladle Preheating | 1996 | P53B | No control | | | | | | | | |
| | Phase II air make-up units | 1998 (2011) | P54 | No control | | | | | | | | |
| S16 | Line 5 Shakeout [3] | 1998 (2011) | P61 | Baghouse (C16) | 75.34 | - | - | | 262.80 | | 0.08 | 0.002 |
| | Line 5 Pick and Sort | 1998 (2011) | P63 | | | | | | | | | |
| | Line 5 Cleaning/ Grinding | 1998 (2011) | P64 | | | | | | | | | |
| | Line 6 Shakeout [4] | 1998 (2011) | P66 | | | | | | | | | |
| | Line 6 Cast Cooling [5] | 1998 (2011) | P67 | | | | | | | | | |
| | Line 6 Pick and Sort | 1998 (2011) | P68 | | | | | | | | | |
| | Line 6 Cleaning/ Grinding | 1998 (2011) | P69 | | | | | | | | | |
| | Line 7 Shakeout [6] | 1998 (2011) | P71 | | | | | | | | | |
| | Line 7 Cast Cooling [7] | 1998 (2011) | P72 | | | | | | | | | |
| | Line 7 Pick and Sort | 1998 (2011) | P73 | | | | | | | | | |
| | Line 7 Cleaning/ Grinding | 1998 (2011) | P74 | | | | | | | | | |
| | Line 8 Shakeout | 1998 (2011) | P76 | | | | | | | | | |
| | Line 8 Cast Cooling | 1998 (2011) | P77 | | | | | | | | | |
| | Line 8 Pick and Sort | 1998 (2011) | P78 | | | | | | | | | |
| | Line 8 Cleaning/ Grinding | 1998 (2011) | P79 | | | | | | | | | |
| | Phase II Return Sand Handling/Screening [8] | 1998 (2011) | P80 | | | | | | | | | |
| | Phase II Metal Returns Handling System [9] | 1998 (2011) | P84 | | | | | | | | | |
| | Phase I Autogrinder | 2008 | P87 | | | | | | | | | |
| S17 | Core Room Expansion I phenolic-urethane core making process [12] | 2005 | P47 | Packed bed scrubber (C17) | - | - | - | 39.40 | - | | - | - |
| S44 | Phase I charge and make-up operation | 1996 | P32 | Baghouse (C44) | 30.05 | - | - | - | - | | - | 0.00001 |
| | Phase I Ladle filling & iron transport system | 1996 | P85 | | | | | | | | - | - |
| | Phase I Melt Area Ladle Cleaning | 1996 | P86 | | | | | | | | - | - |
| | Phase I Iron bath desulfurization | 2011 | P34 | | | | | | | | 0.003 | 0.00004 |
| | Phase II Melt Area Ladle Cleaning | 1998 (2011) | n/a | | | | | | | | | - |
| | Phase II enclosed cupola charge make-up and handling unit | 1998 (2011) | n/a | | | | | | | | 0.0002 | - |
| | Phase II ladle filling and iron transport operation | 1998 (2011) | n/a | | | | | | | | | - |
| S48 | Core Room Expansion I natural gas-fired core drying ovens and air make-up units [12] | 2005 | P48 | No control | 0.10 | 0.03 | 0.29 | 4.49 | 5.34 | | - | - |
| S48A | Core Room Expansion II natural gas-fired core drying oven [13] | 2008 | P48A | No control | 0.04 | 0.00 | 2.20 | 0.10 | 1.80 | | - | - |
| S48B | Core Room Expansion II natural gas-fired core drying oven [13] | 2008 | P48B | No control | | | | | | | | |
| No stack; exhausting inside the building | Phase I Line 2 Ladle Cleaning | 1996 | n/a | No control | 43.80 | - | - | - | - | | - | - |
| | Phase I Line 3 Ladle Cleaning | 1996 | n/a | No control | 43.80 | - | - | - | - | | - | - |
| | Phase II Line 5 Ladle Cleaning | 1998 | n/a | No control | 43.80 | - | - | - | - | | - | - |
| | Phase II Line 6 Ladle Cleaning | 1998 | n/a | No control | 43.80 | - | - | - | - | | - | - |
| | Phase II Line 7 Ladle Cleaning | 1998 | n/a | No control | 43.80 | - | - | - | - | | - | - |
| | Phase II Line 8 Ladle Cleaning | 1998 | n/a | No control | 43.80 | - | - | - | - | | - | - |
| | Phase II Ductile Iron Treatment Ladle Cleaning [10] | 1998 (2011) | n/a | No control | 43.80 | - | - | - | - | | - | - |
| | Phase II raw material handling [16] | 1998 (2011) | n/a | No control | 7.58 | - | - | - | - | | - | - |
| | Phase II Pattern shop | 1998 | P50 | Baghouse | 0.92 | - | - | - | - | | - | - |
| | Two (2) autogrinders [15] | 2012 | P87A | Baghouse (C87A) | 5.81 | - | - | - | - | | - | - |
| | Core Room Expansion I phenolic-urethane core sand handling | 2005 (2008) | P46 | Baghouse (C18) | 2.63 | - | - | - | - | | - | - |

| | **PM** | **SO2** | **NOx** | **VOC** | **CO** | **GHGs as CO2e** | **Lead** | **Beryllium** |
|---|---|---|---|---|---|---|---|---|
| **Total (tons/yr)** | **813.93** | **211.81** | **434.05** | **1,466.18** | **6,243.41** | **662,527** | **4.05** | **0.02** |

| | |
|---|---|
| **Total HAPs** | **>25** |
| **Worst Case Single HAP** | **>10** |

**Notes:**

* The Phase I Air makeup units (PS2) are uncontrolled, but exhausting to Stack S01.

** Please refer page 22 of this Appendix for the PM10 and PM2.5 emissions.

(1) Line 1 Pouring/Mold Cooling is exhausting to stacks S01 and S04

(2) Line 1 Cast Cooling is exhausting to stacks S01 and S04

(3) Line 5 Shakeout exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)

(4) Line 6 Shakeout exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)

(5) Line 6 Cast Cooling exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)

(6) Line 7 Shakeout exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)

(7) Line 7 Cast Cooling exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)

(8) Phase II Return Sand Handling/Screening exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)

(9) Phase II Metal Returns Handling System exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)

(10) The ductile treatment operation includes locations where treatment occurs and iron is transferred. Fumes in the treatment area are captured but those in the metal transfer area are not. Burn bar usage for this operation has been split 25/75 to allow separate emission estimates for the captured emissions (Baghouse C15) versus emissions exhausting indoors.

(11) GHG emissions include coke combustion from cupolas, Casting Lines 1-8, and natural gas combustion

(12) Limited PTE from TSD to SSM No. 123-21238-00019, issued on December 22, 2005.

(13) Limited PTE from TSD to SSM No. 1123-26878-00019, issued on December 2, 2008

(14) Limited PTE from TSD to SSM No. 123-16456-00019, issued on May 13, 2003.

(15) PM emissions are unlimited PTE, from MSM No. 123-31689-00019, issued on April 25, 2012.

(16) PM emissions are unlimited PTE, from CP 123-4593-00019, issued on January 19, 1996

**Methodology:**

Limited Emissions (ton/yr) = Emission Limit (lb/hr) * 8,760 hours/yr * 1 ton/2,000 lb

**Appendix A: Emission Calculations**
**PM Limits**

Company Name: Waupaca Foundry, Inc. Plant 5
Address City IN Zip: 9856 State Highway 66, Tell City, Indiana 47586
SSM No: 123-35760-00019
SPM No. 123-35799-00019
Reviewer: Mehul Sura

| Stack ID | Process | Year of Construction (Modification) | Process ID | Control Device | Throughput (tons/hr) | PM Emission Limits for Individual Process (lb/hr) | Particulate Emission Limitation for stack (gr/dscf) | PM Stack Limit (lb/hr) |
|---|---|---|---|---|---|---|---|---|
| S01 | Line 1 Pouring/Mold Cooling [1] | 1996 (1998, 2007, 2011) | P01 | Three (3) Baghouses (C01, C02, C03) | 38 | 1.50 | 0.005 | 32.01 |
| | Line 1 Shakeout | 1996 (1998, 2007, 2011) | P02 | | 38 | 1.71 | | |
| | Line 1 Cast Cooling [2] | 1996 (1998, 2007, 2011) | P03 | | 38 | 1.93 | | |
| | Line 1 Pick and Sort | 1996 (1998, 2007, 2011) | P04 | | 38 | 1.33 | | |
| | Line 2 Pouring/Mold Cooling | 1996 (2011) | P06 | | 17 | 1.50 | | |
| | Line 2 Shakeout | 1996 (2011) | P07 | | 17 | 1.71 | | |
| | Line 2 Cast Cooling | 1996 (2011) | P08 | | 17 | 1.93 | | |
| | Line 3 Pouring/Mold Cooling | 1996 (2011) | P11 | | 17 | 1.50 | | |
| | Line 3 Shakeout | 1996 (2011) | P12 | | 17 | 1.71 | | |
| | Line 3 Cast Cooling | 1996 (2011) | P13 | | 17 | 0.43 | | |
| | Line 4 Pouring/Mold Cooling | 1996 (2011, 2014) | P16 | | 40 | 2.44 | | |
| | Line 4 Shakeout | 1996 (2011, 2014) | P17 | | 40 | 1.71 | | |
| | Line 4 Cast Cooling | 1996 (2011, 2014) | P18 | | 40 | 0.43 | | |
| | Line 4 Pick and Sort | 1996 (2011, 2014) | P19 | | 40 | 1.71 | | |
| | Phase I Return Sand Handling/Screening | 1996 | P21 | | 522 | 0.94 | | |
| | Phase I Sand Cooling/Water Addition | 1996 | P22 | | 522 | 4.24 | | |
| | Phase I Sand Mulling/Handling | 1996 | P23 | | 522 | 1.63 | | |
| | Phase I Spent Sand Handling/Processing | 1996 | P24 | | 54 | 2.74 | | |
| | Phase I Air makeup units | 1996 | P52 | | 65.6 MMBtu/hr | 0.90 lb/hr and 3.94 tons/yr * | | |
| | Phase I Line 1 Ladle Cleaning | 1996 (2013) | P86A | | 100 lbs burn bars/hr | 0.64 | 0.005 | |
| | Phase I Line 4 Ladle Cleaning | 1996 (2013) | P86B | | 100 lbs burn bars/hr | 0.64 | | |

**Notes:**
* The Phase I Air makeup units (P52) are uncontrolled, but exhausting to Stack S01.
(1) Line 1 Pouring/Mold Cooling is exhausting to stacks S01 and S04
(2) Line 1 Cast Cooling is exhausting to stacks S01 and S04

| Stack ID | Process | Year of Construction (Modification) | Process ID | Control Device | Throughput (tons/hr) | PM Emission Limits for Individual Process (lb/hr) | Particulate Emission Limitation for stack (gr/dscf) | PM Stack Limit (lb/hr) |
|---|---|---|---|---|---|---|---|---|
| S04 | Line 1 Pouring/Mold Cooling [1] | 1996 (1998, 2007, 2011) | P01 | Three (3) Baghouses (C01, C02, C03) | 38 | - | 0.005 | 1.72 |
| | Line 1 Cast Cooling [2] | 1996 (1998, 2007, 2011) | P03 | | 38 | - | | |

**Notes:**
(1) Line 1 Pouring/Mold Cooling is exhausting to stacks S01 and S04
(2) Line 1 Cast Cooling is exhausting to stacks S01 and S04

| Stack ID | Process | Year of Construction (Modification) | Process ID | Control Device | Throughput (tons/hr) | PM Emission Limits for Individual Process (lb/hr) | Particulate Emission Limitation for stack (gr/dscf) | PM Stack Limit (lb/hr) |
|---|---|---|---|---|---|---|---|---|
| S07 | Line 1 Cleaning/Grinding | 1996 (1998, 2007, 2011) | P05 | Baghouse (C07) | 27 | 0.69 | 0.005 | 7.8 |
| | Line 2 Pick and Sort | 1996 (2011) | P09 | | 17 | 1.71 | | |
| | Line 2 Cleaning/Grinding | 1996 (2011) | P10 | | 17 | 0.69 | | |
| | Line 3 Pick and Sort | 1996 (2011) | P14 | | 17 | 2.10 | | |
| | Line 3 Cleaning/Grinding | 1996 (2011) | P15 | | 17 | 0.69 | | |
| | Line 4 Cleaning/Grinding | 1996 (2011, 2014) | P20 | | 40 | 0.69 | | |
| | Phase I Metallic Returns Handling | 1996 | P25 | | 33 | 1.29 | | |

**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

**Appendix A: Emission Calculations**
**PM Limits**

**Company Name:** Waupaca Foundry, Inc. Plant 5
**Address City IN Zip:** 9856 State Highway 66, Tell City, Indiana 47586
**Permit Number:** T123-33768-00019
**Reviewer:** Sarah Street

| Stack ID | Process | Year of Construction (Modification) | Process ID | Control Device | Throughput (tons/hr) | PM Emission Limits for Individual Process (lb/hr) | Particulate Emission Limitation for stack (gr/dscf) | PM Stack Limit (lb/hr) |
|---|---|---|---|---|---|---|---|---|
| S08 | Phase I Core sand handling | 1996 | P40 | Baghouse (C08) | 16 | - | - | 0.6 |
| | Phase II phenolic-urethane core sand handling | 1998 (2008) | P42 | | 32 | 0.60 | - | |

| Stack ID | Process | Year of Construction (Modification) | Process ID | Control Device | Throughput (tons/hr) | PM Emission Limit (lb/ton) | Particulate Emission Limitation for stack (gr/dscf) | PM Stack Limit (lb/hr) |
|---|---|---|---|---|---|---|---|---|
| S09 | Phase I gray iron cupola | 1996 (2011) | P30 | Baghouse (C09A), Incinerator (C11A), & Lime injection system (C12A) | 100 | 0.078 | - | 12.48 |
| | Phase II cupola iron melting system | 1998 (2011) | P33 | Baghouse (C09B), Recuperative Incinerator (C11B), & Lime injection system (C12B) | 100 | | | |

| Stack ID | Process | Year of Construction (Modification) | Process ID | Control Device | Throughput (tons/hr) | PM Emission Limits for Individual Process (lb/hr) | Particulate Emission Limitation for stack (gr/dscf) | PM Stack Limit (lb/hr) |
|---|---|---|---|---|---|---|---|---|
| S11 | Phase I Core manufacturing | 1996 | P41 | No control | 16 | - | - | 0.23 lb/hr and 1.0 tons/yr |
| | Phase I Core machine & oven | 1996 | P51 | No control | 16.8 MMBtu/hr | - | - | |

| Stack ID | Process | Year of Construction (Modification) | Process ID | Control Device | Throughput (tons/hr) | PM Emission Limits for Individual Process (lb/ton) | Particulate Emission Limitation for stack (gr/dscf) | PM Stack Limit (lb/hr) |
|---|---|---|---|---|---|---|---|---|
| S12 | Phase I Ladle preheating operation | 1996 | P53 | No control | 11.5 MMBtu/hr | - | - | 0.16 |

**Methodology:**
Emission Limits (lb/hr) = Emission Limits for Individual Process (lb/ton) x Throughput (tons/yr)

**Appendix A: Emission Calculations**
**PM Limits**

**Company Name:** Waupaca Foundry, Inc. Plant 5
**Address City IN Zip:** 9856 State Highway 66, Tell City, Indiana 47586
**Permit Number:** T123-33768-00019
**Reviewer:** Sarah Street

| Stack ID | Process | Year of Construction (Modification) | Process ID | Control Device | Throughput (tons/hr) | PM Emission Limits for Individual Process (lb/hr) | Particulate Emission Limitation for stack (gr/dscf) | PM Stack Limit (lb/hr) |
|---|---|---|---|---|---|---|---|---|
| S15 | Line 5 Pouring/Mold Cooling | 1998 (2011) | P60 | Baghouse (C15) | 28 | - | 0.005 | 30.90 |
| | Line 5 Shakeout (3) | 1998 (2011) | P61 | | 28 | - | | |
| | Line 5 Cast Cooling | 1998 (2011) | P62 | | 28 | - | | |
| | Line 6 Pouring/Mold Cooling | 1998 (2011) | P65 | | 20 | - | | |
| | Line 6 Shakeout (4) | 1998 (2011) | P66 | | 20 | - | | |
| | Line 6 Cast Cooling (5) | 1998 (2011) | P67 | | 20 | - | | |
| | Line 7 Pouring/Mold Cooling | 1998 (2011) | P70 | | 33 | - | | |
| | Line 7 Shakeout (6) | 1998 (2011) | P71 | | 33 | - | | |
| | Line 7 Cast Cooling (7) | 1998 (2011) | P72 | | 33 | - | | |
| | Line 8 Pouring/Mold Cooling | 1998 (2011) | P75 | | 20 | - | | |
| | Phase II Return Sand Handling/Screening (8) | 1998 (2011) | P80 | | 660 | - | | |
| | Phase II Sand Mulling and Handling | 1998 (2011) | P81 | | 660 | - | | |
| | Phase II Sand Blending and Cooling | 1998 (2011) | P82 | | 660 | - | | |
| | Phase II Spent Sand and Dust Handling | 1998 (2011) | P83 | | 55 | - | | |
| | Phase II Metal Returns Handling System (9) | 1998 (2011) | P84 | | 44 | - | | |
| | Tumbleblast shotblast machine | 2001 | P55 | | 20 | - | | |
| | Phase II Ductile Iron Treatment Ladle Cleaning (10) | 1998 (2011) | n/a | | 100 lbs burn bars/hr | - | | |
| | Phase II two (2) ductile iron treatment stations | 1998 (2001, 2011) | P35 | Baghouses C15 and C35 | 100 | - | | |
| | Phase II Ladle Preheating | 1996 | P53B | No control | 11.5 MMBtu/hr | - | | |
| | Phase II air make-up units | 1998 (2011) | P54 | No control | 80 MMBtu/hr | - | | |

**Notes:**
(3) Line 5 Shakeout exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(4) Line 6 Shakeout exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(5) Line 6 Cast Cooling exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(6) Line 7 Shakeout exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(7) Line 7 Cast Cooling exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(8) Phase II Return Sand Handling/Screening exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(9) Phase II Metal Returns Handling System exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)

(10) The ductile treatment operation includes locations where treatment occurs and iron is transferred. Fumes in the treatment area are captured but those in the metal transfer area are not. Burn bar usage for this operation has been split 25/75 to allow separate emission estimates for the captured emissions (Baghouse C15) versus emissions exhausting indoors.

| Stack ID | Process | Year of Construction (Modification) | Process ID | Control Device | Throughput (tons/hr) | PM Emission Limits for Individual Process (lb/hr) | Particulate Emission Limitation for stack (gr/dscf) | PM Stack Limit (lb/hr) |
|---|---|---|---|---|---|---|---|---|
| S16 | Line 5 Shakeout (3) | 1998 (2011) | P61 | Baghouse (C16) | 28 | - | 0.005 | 17.2 |
| | Line 5 Pick and Sort | 1998 (2011) | P63 | | 28 | - | | |
| | Line 5 Cleaning/ Grinding | 1998 (2011) | P64 | | 28 | - | | |
| | Line 6 Shakeout (4) | 1998 (2011) | P66 | | 20 | - | | |
| | Line 6 Cast Cooling (5) | 1998 (2011) | P67 | | 20 | - | | |
| | Line 6 Pick and Sort | 1998 (2011) | P68 | | 20 | - | | |
| | Line 6 Cleaning/ Grinding | 1998 (2011) | P69 | | 20 | - | | |
| | Line 7 Shakeout (6) | 1998 (2011) | P71 | | 33 | - | | |
| | Line 7 Cast Cooling (7) | 1998 (2011) | P72 | | 33 | - | | |
| | Line 7 Pick and Sort | 1998 (2011) | P73 | | 33 | - | | |
| | Line 7 Cleaning/ Grinding | 1998 (2011) | P74 | | 33 | - | | |
| | Line 8 Shakeout | 1998 (2011) | P76 | | 20 | - | | |
| | Line 8 Cast Cooling | 1998 (2011) | P77 | | 20 | - | | |
| | Line 8 Pick and Sort | 1998 (2011) | P78 | | 20 | - | | |
| | Line 8 Cleaning/ Grinding | 1998 (2011) | P79 | | 20 | - | | |
| | Phase II Return Sand Handling/Screening (8) | 1998 (2011) | P80 | | 660 | - | | |
| | Phase II Metal Returns Handling System (9) | 1998 (2011) | P84 | | 44 | - | | |
| | Phase I Autogrinder | 2008 | P87 | | 22.5 | 0.60 | | |

**Notes:**
(3) Line 5 Shakeout exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(4) Line 6 Shakeout exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(5) Line 6 Cast Cooling exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(6) Line 7 Shakeout exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(7) Line 7 Cast Cooling exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(8) Phase II Return Sand Handling/Screening exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(9) Phase II Metal Returns Handling System exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)

**Appendix A: Emission Calculations**
**PM Limits**

**Company Name:** Waupaca Foundry, Inc. Plant 5
**Address City IN Zip:** 9856 State Highway 66, Tell City, Indiana 47586
**Permit Number:** T123-33768-00019
**Reviewer:** Sarah Street

| Stack ID | Process | Year of Construction (Modification) | Process ID | Control Device | Throughput (tons/hr) | PM Emission Limits for Individual Process (lb/hr) | Particulate Emission Limitation for stack (gr/dscf) | PM Stack Limit (lb/hr) |
|---|---|---|---|---|---|---|---|---|
| S44 | Phase I charge and make-up operation | 1996 | P32 | Baghouse (C44) | 100 | - | - | 6.86 |
| | Phase I Ladle filling & iron transport system | 1996 | P85 | | 100 | - | - | |
| | Phase I Melt Area Ladle Cleaning | 1996 | P86 | | 100 lbs burn bars/hr | - | - | |
| | Phase I Iron bath desulfurization | 2011 | P34 | | 100 | - | - | |
| | Phase II Melt Area Ladle Cleaning | 1998 (2011) | n/a | | 100 lbs burn bars/hr | - | - | |
| | Phase II enclosed cupola charge make-up and handling unit | 1998 (2011) | n/a | | 114 | - | - | |
| | Phase II ladle filling and iron transport operation | 1998 (2011) | n/a | | 188 | - | - | |

| Stack ID | Process | Year of Construction (Modification) | Process ID | Control Device | Throughput (tons/hr) | PM Emission Limits for Individual Process (lb/hr) | Particulate Emission Limitation for stack (gr/dscf) | PM Stack Limit (lb/hr) |
|---|---|---|---|---|---|---|---|---|
| S48 | Core Room Expansion I natural gas-fired core drying ovens and air make-up units | 2005 | P48 | No control | 12.2 MMBtu/hr | - | - | - |
| S48A | Core Room Expansion II natural gas-fired core drying oven | 2008 | P48A | No control | 2.5 MMBtu/hr | - | - | - |
| S48B | Core Room Expansion II natural gas-fired core drying oven | 2008 | P48B | No control | 2.5 MMBtu/hr | - | - | - |

| Stack ID | Process | Year of Construction (Modification) | Process ID | Control Device | Throughput (tons/hr) | PM Emission Limits for Individual Process (lb/hr) | Particulate Emission Limitation for stack (gr/dscf) | PM Stack Limit (lb/hr) |
|---|---|---|---|---|---|---|---|---|
| No stack; exhausting inside the building | Phase I Line 2 Ladle Cleaning | 1996 | n/a | No control | 100 lbs burn bars/hr | - | - | - |
| | Phase I Line 3 Ladle Cleaning | 1996 | n/a | No control | 100 lbs burn bars/hr | - | - | - |
| | Phase II Line 5 Ladle Cleaning | 1998 | n/a | No control | 100 lbs burn bars/hr | - | - | - |
| | Phase II Line 6 Ladle Cleaning | 1998 | n/a | No control | 100 lbs burn bars/hr | - | - | - |
| | Phase II Line 7 Ladle Cleaning | 1998 | n/a | No control | 100 lbs burn bars/hr | - | - | - |
| | Phase II Line 8 Ladle Cleaning | 1998 | n/a | No control | 100 lbs burn bars/hr | - | - | - |
| | Phase II Ductile Iron Treatment Ladle Cleaning (10) | 1998 (2011) | n/a | No control | 100 lbs burn bars/hr | - | - | - |
| | Phase II raw material handling | 1998 (2011) | n/a | No control | 150 (iron), 1.5 (alloys), 15 (coke), 4.5 (limestone) | - | - | - |
| | Phase II Pattern shop | 1998 | P50 | Baghouse | 10 patterns/hour | 0.21 | 0.005 | - |
| | Two (2) autogrinders | 2012 | P87A | Baghouse (C87A) | 2 | 4.2 lb/hr (each) -- 326 IAC 6-3-2 limit | - | - |
| | Core Room Expansion I phenolic-urethane core sand handling | 2005 (2008) | P46 | Baghouse (C18) | 51 | 0.60 | - | - |

**Notes:**

(10) The ductile treatment operation includes locations where treatment occurs and iron is transferred. Fumes in the treatment area are captured but those in the metal transfer area are not. Burn bar usage for this operation has been split 25/75 to allow separate emission estimates for the captured emissions (Baghouse C15) versus emissions exhausting indoors.

**Appendix A: Emission Calculations**
**SO2 Limits**

Company Name: Waupaca Foundry, Inc. Plant 5
Address City IN Zip: 9856 State Highway 66, Tell City, Indiana 47586
SSM No: 123-35760-00019
SPM No. 123-35799-00019
Reviewer: Mehul Sura

| Stack ID | Process | Year of Construction (Modification) | Process ID | Control Device | Throughput (tons/hr) | SO2 Emission Limits for Individual Process (lb/ton) | SO2 Emission Limits for Individual Process (lb/hr) | SO2 Stack Limit (lb/hr) |
|---|---|---|---|---|---|---|---|---|
| S01 | Line 1 Pouring/Mold Cooling (1) | 1996 (1998, 2007, 2011) | P01 | Three (3) Baghouses (C01, C02, C03) | 38 | 0.02 | 0.43 | 1.98 |
| | Line 1 Shakeout | 1996 (1998, 2007, 2011) | P02 | | 38 | - | - | |
| | Line 1 Cast Cooling (2) | 1996 (1998, 2007, 2011) | P03 | | 38 | - | - | |
| | Line 1 Pick and Sort | 1996 (1998, 2007, 2011) | P04 | | 38 | - | - | |
| | Line 2 Pouring/Mold Cooling | 1996 (2011) | P06 | | 17 | 0.02 | 0.34 | |
| | Line 2 Shakeout | 1996 (2011) | P07 | | 17 | - | - | |
| | Line 2 Cast Cooling | 1996 (2011) | P08 | | 17 | - | - | |
| | Line 3 Pouring/Mold Cooling | 1996 (2011) | P11 | | 17 | 0.02 | 0.34 | |
| | Line 3 Shakeout | 1996 (2011) | P12 | | 17 | - | - | |
| | Line 3 Cast Cooling | 1996 (2011) | P13 | | 17 | - | - | |
| | Line 4 Pouring/Mold Cooling | 1996 (2011, 2014) | P16 | | 40 | 0.02 | 0.80 | |
| | Line 4 Shakeout | 1996 (2011, 2014) | P17 | | 40 | - | - | |
| | Line 4 Cast Cooling | 1996 (2011, 2014) | P18 | | 40 | - | - | |
| | Line 4 Pick and Sort | 1996 (2011, 2014) | P19 | | 40 | - | - | |
| | Phase I Return Sand Handling/Screening | 1996 | P21 | | 522 | - | - | |
| | Phase I Sand Cooling/Water Addition | 1996 | P22 | | 522 | - | - | |
| | Phase I Sand Mulling/Handling | 1996 | P23 | | 522 | - | - | |
| | Phase I Spent Sand Handling/Processing | 1996 | P24 | | 54 | - | - | |
| | Phase I Air makeup units | 1996 | P52 | | 65.6 MMBtu/hr | 0.60 | 0.04 | |
| | Phase I Line 1 Ladle Cleaning | 1996 (2013) | P86A | | 100 lbs burn bars/hr | - | - | |
| | Phase I Line 4 Ladle Cleaning | 1996 (2013) | P86B | | 100 lbs burn bars/hr | - | - | |

**Notes:**
(1) Line 1 Pouring/Mold Cooling is exhausting to stacks S01 and S04
(2) Line 1 Cast Cooling is exhausting to stacks S01 and S04

| Stack ID | Process | Year of Construction (Modification) | Process ID | Control Device | Throughput (tons/hr) | SO2 Emission Limits for Individual Process (lb/ton) | SO2 Emission Limits for Individual Process (lb/hr) | SO2 Stack Limit (lb/hr) |
|---|---|---|---|---|---|---|---|---|
| S04 | Line 1 Pouring/Mold Cooling (1) | 1996 (1998, 2007, 2011) | P01 | Three (3) Baghouses (C01, C02, C03) | 38 | 0.02 | 0.33 | 0.33 |
| | Line 1 Cast Cooling (2) | 1996 (1998, 2007, 2011) | P03 | | 38 | - | - | |

**Notes:**
(1) Line 1 Pouring/Mold Cooling is exhausting to stacks S01 and S04
(2) Line 1 Cast Cooling is exhausting to stacks S01 and S04

| Stack ID | Process | Year of Construction (Modification) | Process ID | Control Device | Throughput (tons/hr) | SO2 Emission Limits for Individual Process (lb/ton) | SO2 Emission Limits for Individual Process (lb/hr) | SO2 Stack Limit (lb/hr) |
|---|---|---|---|---|---|---|---|---|
| S09 | Phase I gray iron cupola | 1996 (2011) | P30 | Baghouse (C09A), Incinerator (C11A), & Lime injection system (C12A) | 100 | 0.22 | - | 44.00 |
| | Phase II cupola iron melting system | 1998 (2011) | P33 | Baghouse (C09B), Recuperative Incinerator (C11B), & Lime injection system (C12B) | 100 | | | |

**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

**Appendix A: Emission Calculations**
**SO2 Limits**

**Company Name:** **Waupaca Foundry, Inc. Plant 5**
**Address City IN Zip:** **9856 State Highway 66, Tell City, Indiana 47586**
**Permit Number:** **T123-33768-00019**
**Reviewer:** **Sarah Street**

| Stack ID | Process | Year of Construction (Modification) | Process ID | Control Device | Throughput (tons/hr) | SO2 Emission Limits for Individual Process (lb/ton) | SO2 Emission Limits for Individual Process (lb/hr) | SO2 Stack Limit (lb/hr) |
|---|---|---|---|---|---|---|---|---|
| S11 | Phase I Core manufacturing | 1996 | P41 | No control | 16 | - | - | 0.01 lb/hr and 0.044 tons/yr |
| | Phase I Core machine & oven | 1996 | P51 | No control | 16.8 MMBtu/hr | - | - | |

| Stack ID | Process | Year of Construction (Modification) | Process ID | Control Device | Throughput (tons/hr) | SO2 Emission Limits for Individual Process (lb/ton) | SO2 Emission Limits for Individual Process (lb/hr) | SO2 Stack Limit (lb/hr) |
|---|---|---|---|---|---|---|---|---|
| S12 | Phase I Ladle preheating operation | 1996 | P53 | No control | 11.5 MMBtu/hr | - | - | 0.0069 |

| Stack ID | Process | Year of Construction (Modification) | Process ID | Control Device | Throughput (tons/hr) | SO2 Emission Limits for Individual Process (lb/ton) | SO2 Emission Limits for Individual Process (lb/hr) | SO2 Stack Limit (lb/hr) |
|---|---|---|---|---|---|---|---|---|
| S15 | Line 5 Pouring/Mold Cooling | 1998 (2011) | P60 | Baghouse (C15) | 28 | 0.02 | 0.56 | 2.02 |
| | Line 5 Shakeout [3] | 1998 (2011) | P61 | | 28 | - | - | |
| | Line 5 Cast Cooling | 1998 (2011) | P62 | | 28 | - | - | |
| | Line 6 Pouring/Mold Cooling | 1998 (2011) | P65 | | 20 | 0.02 | 0.40 | |
| | Line 6 Shakeout [4] | 1998 (2011) | P66 | | 20 | - | - | |
| | Line 6 Cast Cooling [5] | 1998 (2011) | P67 | | 20 | - | - | |
| | Line 7 Pouring/Mold Cooling | 1998 (2011) | P70 | | 33 | 0.02 | 0.66 | |
| | Line 7 Shakeout [6] | 1998 (2011) | P71 | | 33 | - | - | |
| | Line 7 Cast Cooling [7] | 1998 (2011) | P72 | | 33 | - | - | |
| | Line 8 Pouring/Mold Cooling | 1998 (2011) | P75 | | 20 | 0.02 | 0.40 | |
| | Phase II Return Sand Handling/Screening (8) | 1998 (2011) | P80 | | 660 | - | - | |
| | Phase II Sand Mulling and Handling | 1998 (2011) | P81 | | 660 | - | - | |
| | Phase II Sand Blending and Cooling | 1998 (2011) | P82 | | 660 | - | - | |
| | Phase II Spent Sand and Dust Handling | 1998 (2011) | P83 | | 55 | - | - | |
| | Phase II Metal Returns Handling System [9] | 1998 (2011) | P84 | | 44 | - | - | |
| | Tumbleblast shotblast machine | 2001 | P55 | | 20 | - | - | |
| | Phase II Ductile Iron Treatment Ladle Cleaning [10] | 1998 (2011) | n/a | | 100 lbs burn bars/hr | - | - | |
| | Phase II two (2) ductile iron treatment stations | 1998 (2001, 2011) | P35 | Baghouses C15 and C35 | 100 | - | - | |
| | Phase II Ladle Preheating | 1996 | P53B | No control | 11.5 MMBtu/hr | - | - | |
| | Phase II air make-up units | 1998 (2011) | P54 | No control | 80 MMBtu/hr | - | - | |

**Notes:**
(3) Line 5 Shakeout exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(4) Line 6 Shakeout exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(5) Line 6 Cast Cooling exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(6) Line 7 Shakeout exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(7) Line 7 Cast Cooling exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(8) Phase II Return Sand Handling/Screening exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(9) Phase II Metal Returns Handling System exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)

(10) The ductile treatment operation includes locations where treatment occurs and iron is transferred. Fumes in the treatment area are captured but those in the metal transfer area are not. Burn bar usage for this operation has been split 25/75 to allow separate emission estimates for the captured emissions (Baghouse C15) versus emissions exhausting indoors.

**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

**Appendix A: Emission Calculations**
**NOx Limits**

Company Name: Waupaca Foundry, Inc. Plant 5
Address City IN Zip: 9856 State Highway 66, Tell City, Indiana 47586
SSM No: 123-35760-00019
SPM No. 123-35799-00019
Reviewer: Mehul Sura

| Stack ID | Process | Year of Construction (Modification) | Process ID | Control Device | Throughput (tons/hr) | NOx Emission Limits for Individual Process (lb/ton) | NOx Emission Limits for Individual Process (lb/hr) | NOx Stack Limit (lb/hr) |
|---|---|---|---|---|---|---|---|---|
| S01 | Line 1 Pouring/Mold Cooling [1] | 1996 (1998, 2007, 2011) | P01 | Three (3) Baghouses (C01, C02, C03) | 38 | 0.01 | 0.23 | 3.95 |
| | Line 1 Shakeout | 1996 (1998, 2007, 2011) | P02 | | 38 | - | - | |
| | Line 1 Cast Cooling [2] | 1996 (1998, 2007, 2011) | P03 | | 38 | - | - | |
| | Line 1 Pick and Sort | 1996 (1998, 2007, 2011) | P04 | | 38 | - | - | |
| | Line 2 Pouring/Mold Cooling | 1996 (2011) | P06 | | 17 | 0.01 | 0.17 | |
| | Line 2 Shakeout | 1996 (2011) | P07 | | 17 | - | - | |
| | Line 2 Cast Cooling | 1996 (2011) | P08 | | 17 | - | - | |
| | Line 3 Pouring/Mold Cooling | 1996 (2011) | P11 | | 17 | 0.01 | 0.17 | |
| | Line 3 Shakeout | 1996 (2011) | P12 | | 17 | - | - | |
| | Line 3 Cast Cooling | 1996 (2011) | P13 | | 17 | - | - | |
| | Line 4 Pouring/Mold Cooling | 1996 (2011, 2014) | P16 | | 40 | 0.01 | 0.40 | |
| | Line 4 Shakeout | 1996 (2011, 2014) | P17 | | 40 | - | - | |
| | Line 4 Cast Cooling | 1996 (2011, 2014) | P18 | | 40 | - | - | |
| | Line 4 Pick and Sort | 1996 (2011, 2014) | P19 | | 40 | - | - | |
| | Phase I Return Sand Handling/Screening | 1996 | P21 | | 522 | - | - | |
| | Phase I Sand Cooling/Water Addition | 1996 | P22 | | 522 | - | - | |
| | Phase I Sand Mulling/Handling | 1996 | P23 | | 522 | - | - | |
| | Phase I Spent Sand Handling/Processing | 1996 | P24 | | 54 | - | - | |
| | Phase I Air makeup units | 1996 | P52 | | 65.6 MMBtu/hr | 0.01 | 2.98 | |
| | Phase I Line 1 Ladle Cleaning | 1996 (2013) | P86A | | 100 lbs burn bars/hr | - | - | |
| | Phase I Line 4 Ladle Cleaning | 1996 (2013) | P86B | | 100 lbs burn bars/hr | - | - | |

**Notes:**
(1) Line 1 Pouring/Mold Cooling is exhausting to stacks S01 and S04
(2) Line 1 Cast Cooling is exhausting to stacks S01 and S04

| Stack ID | Process | Year of Construction (Modification) | Process ID | Control Device | Throughput (tons/hr) | NOx Emission Limits for Individual Process (lb/ton) | NOx Emission Limits for Individual Process (lb/hr) | NOx Stack Limit (lb/hr) |
|---|---|---|---|---|---|---|---|---|
| S04 | Line 1 Pouring/Mold Cooling [1] | 1996 (1998, 2007, 2011) | P01 | Three (3) Baghouses (C01, C02, C03) | 38 | 0.01 | 0.17 | 0.17 |
| | Line 1 Cast Cooling [2] | 1996 (1998, 2007, 2011) | P03 | | 38 | - | - | |

**Notes:**
(1) Line 1 Pouring/Mold Cooling is exhausting to stacks S01 and S04
(2) Line 1 Cast Cooling is exhausting to stacks S01 and S04

| Stack ID | Process | Year of Construction (Modification) | Process ID | Control Device | Throughput (tons/hr) | NOx Emission Limits for Individual Process (lb/ton) | NOx Emission Limits for Individual Process (lb/hr) | NOx Stack Limit (lb/hr) |
|---|---|---|---|---|---|---|---|---|
| S09 | Phase I gray iron cupola | 1996 (2011) | P30 | Baghouse (C09A), Incinerator (C11A), & Lime injection system (C12A) | 100 | 0.44 | - | 88.00 |
| | Phase II cupola iron melting system | 1998 (2011) | P33 | Baghouse (C09B), Recuperative Incinerator (C11B), & Lime injection system (C12B) | 100 | | | |

**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

**Appendix A: Emission Calculations**
**NOx Limits**

**Company Name:** Waupaca Foundry, Inc. Plant 5
**Address City IN Zip:** 9856 State Highway 66, Tell City, Indiana 47586
**Permit Number:** T123-33768-00019
**Reviewer:** Sarah Street

| Stack ID | Process | Year of Construction (Modification) | Process ID | Control Device | Throughput (tons/hr) | NOx Emission Limits for Individual Process (lb/ton) | NOx Emission Limits for Individual Process (lb/hr) | NOx Stack Limit (lb/hr) |
|---|---|---|---|---|---|---|---|---|
| S11 | Phase I Core manufacturing | 1996 | P41 | No control | 16 | - | - | 2.35 lb/hr and 10.3 tons/yr |
| | Phase I Core machine & oven | 1996 | P51 | No control | 16.8 MMBtu/hr | - | - | |

| Stack ID | Process | Year of Construction (Modification) | Process ID | Control Device | Throughput (tons/hr) | NOx Emission Limits for Individual Process (lb/ton) | NOx Emission Limits for Individual Process (lb/hr) | NOx Stack Limit (lb/hr) |
|---|---|---|---|---|---|---|---|---|
| S12 | Phase I Ladle preheating operation | 1996 | P53 | No control | 11.5 MMBtu/hr | - | - | 1.61 |

| Stack ID | Process | Year of Construction (Modification) | Process ID | Control Device | Throughput (tons/hr) | NOx Emission Limits for Individual Process (lb/ton) | NOx Emission Limits for Individual Process (lb/hr) | NOx Stack Limit (lb/hr) |
|---|---|---|---|---|---|---|---|---|
| S15 | Line 5 Pouring/Mold Cooling | 1998 (2011) | P60 | Baghouse (C15) | 28 | 0.01 | 0.28 | 1.01 |
| | Line 5 Shakeout [3] | 1998 (2011) | P61 | | 28 | - | - | |
| | Line 5 Cast Cooling | 1998 (2011) | P62 | | 28 | - | - | |
| | Line 6 Pouring/Mold Cooling | 1998 (2011) | P65 | | 20 | 0.01 | 0.20 | |
| | Line 6 Shakeout [4] | 1998 (2011) | P66 | | 20 | - | - | |
| | Line 6 Cast Cooling [5] | 1998 (2011) | P67 | | 20 | - | - | |
| | Line 7 Pouring/Mold Cooling | 1998 (2011) | P70 | | 33 | 0.01 | 0.33 | |
| | Line 7 Shakeout [6] | 1998 (2011) | P71 | | 33 | - | - | |
| | Line 7 Cast Cooling [7] | 1998 (2011) | P72 | | 33 | - | - | |
| | Line 8 Pouring/Mold Cooling | 1998 (2011) | P75 | | 20 | 0.01 | 0.20 | |
| | Phase II Return Sand Handling/Screening (8) | 1998 (2011) | P80 | | 660 | - | - | |
| | Phase II Sand Mulling and Handling | 1998 (2011) | P81 | | 660 | - | - | |
| | Phase II Sand Blending and Cooling | 1998 (2011) | P82 | | 660 | - | - | |
| | Phase II Spent Sand and Dust Handling | 1998 (2011) | P83 | | 55 | - | - | |
| | Phase II Metal Returns Handling System [9] | 1998 (2011) | P84 | | 44 | - | - | |
| | Tumbleblast shotblast machine | 2001 | P55 | | 20 | - | - | |
| | Phase II Ductile Iron Treatment Ladle Cleaning [10] | 1998 (2011) | n/a | | 100 lbs burn bars/hr | - | - | |
| | Phase II two (2) ductile iron treatment stations | 1998 (2001, 2011) | P35 | Baghouses C15 and C35 | 100 | - | - | |
| | Phase II Ladle Preheating | 1996 | P53B | No control | 11.5 MMBtu/hr | 0.01 | - | |
| | Phase II air make-up units | 1998 (2011) | P54 | No control | 80 MMBtu/hr | 0.01 | - | |

**Notes:**
(3) Line 5 Shakeout exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(4) Line 6 Shakeout exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(5) Line 6 Cast Cooling exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(6) Line 7 Shakeout exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(7) Line 7 Cast Cooling exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(8) Phase II Return Sand Handling/Screening exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(9) Phase II Metal Returns Handling System exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(10) The ductile treatment operation includes locations where treatment occurs and iron is transferred. Fumes in the treatment area are captured but those in the metal transfer area are not. Burn bar usage for this operation has been split 25/75 to allow separate emission estimates for the captured emissions (Baghouse C15) versus emissions exhausting indoors.

**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

**Appendix A: Emission Calculations**
**VOC Limits**

Company Name: Waupaca Foundry, Inc. Plant 5
Address City IN Zip: 9856 State Highway 66, Tell City, Indiana 47586
SSM No: 123-35760-00019
SPM No. 123-35799-00019
Reviewer: Mehul Sura

| Stack ID | Process | Year of Construction (Modification) | Process ID | Control Device | Throughput (tons/hr) | VOC Emission Limits for Individual Process (lb/ton) | VOC Emission Limit for Individual Process (lb/hr) | VOC Stack Limit (lb/hr) |
|---|---|---|---|---|---|---|---|---|
| S01 | Line 1 Pouring/Mold Cooling (1) | 1996 (1998, 2007, 2011) | P01 | Three (3) Baghouses (C01, C02, C03) | 38 | 1.40 | 29.82 | 157.2 (combined for S01 and S04) |
| | Line 1 Shakeout | 1996 (1998, 2007, 2011) | P02 | | 38 | | | |
| | Line 1 Cast Cooling (2) | 1996 (1998, 2007, 2011) | P03 | | 38 | - | - | |
| | Line 1 Pick and Sort | 1996 (1998, 2007, 2011) | P04 | | 38 | - | - | |
| | Line 2 Pouring/Mold Cooling | 1996 (2011) | P06 | | 17 | 1.40 | 23.80 | |
| | Line 2 Shakeout | 1996 (2011) | P07 | | 17 | | | |
| | Line 2 Cast Cooling | 1996 (2011) | P08 | | 17 | - | - | |
| | Line 3 Pouring/Mold Cooling | 1996 (2011) | P11 | | 17 | 1.40 | 23.80 | |
| | Line 3 Shakeout | 1996 (2011) | P12 | | 17 | | | |
| | Line 3 Cast Cooling | 1996 (2011) | P13 | | 17 | - | - | |
| | Line 4 Pouring/Mold Cooling | 1996 (2011, 2014) | P16 | | 40 | 1.40 | 56.00 | |
| | Line 4 Shakeout | 1996 (2011, 2014) | P17 | | 40 | | | |
| | Line 4 Cast Cooling | 1996 (2011, 2014) | P18 | | 40 | - | - | |
| | Line 4 Pick and Sort | 1996 (2011, 2014) | P19 | | 40 | - | - | |
| | Phase I Return Sand Handling/Screening | 1996 | P21 | | 522 | - | - | |
| | Phase I Sand Cooling/Water Addition | 1996 | P22 | | 522 | - | - | |
| | Phase I Sand Mulling/Handling | 1996 | P23 | | 522 | - | - | |
| | Phase I Spent Sand Handling/Processing | 1996 | P24 | | 54 | - | - | |
| | Phase I Air makeup units | 1996 | P52 | | 65.6 MMBtu/hr | - | 0.40 | |
| | Phase I Line 1 Ladle Cleaning | 1996 (2013) | P86A | | 100 lbs burn bars/hr | - | - | |
| | Phase I Line 4 Ladle Cleaning | 1996 (2013) | P86B | | 100 lbs burn bars/hr | - | - | |

**Notes:**
(1) Line 1 Pouring/Mold Cooling is exhausting to stacks S01 and S04
(2) Line 1 Cast Cooling is exhausting to stacks S01 and S04

| Stack ID | Process | Year of Construction (Modification) | Process ID | Control Device | Throughput (tons/hr) | VOC Emission Limits for Individual Process (lb/ton) | VOC Emission Limit for Individual Process (lb/hr) | VOC Stack Limit (lb/hr) |
|---|---|---|---|---|---|---|---|---|
| S04 | Line 1 Pouring/Mold Cooling (1) | 1996 (1998, 2007, 2011) | P01 | Three (3) Baghouses (C01, C02, C03) | 38 | 1.40 | 23.38 | 157.2 (combined for S01 and S04) |
| | Line 1 Cast Cooling (2) | 1996 (1998, 2007, 2011) | P03 | | 38 | - | - | |

**Notes:**
(1) Line 1 Pouring/Mold Cooling is exhausting to stacks S01 and S04
(2) Line 1 Cast Cooling is exhausting to stacks S01 and S04

| Stack ID | Process | Year of Construction (Modification) | Process ID | Control Device | Throughput (tons/hr) | VOC Emission Limits for Individual Process (lb/ton) | VOC Emission Limit for Individual Process (lb/hr) | VOC Stack Limit (lb/hr) |
|---|---|---|---|---|---|---|---|---|
| S09 | Phase I gray iron cupola | 1996 (2011) | P30 | Baghouse (C09A), Incinerator (C11A), & Lime injection system (C12A) | 100 | 0.02 | - | 4.00 |
| | Phase II cupola iron melting system | 1998 (2011) | P33 | Baghouse (C09B), Recuperative Incinerator (C11B), & Lime injection system (C12B) | 100 | | | |

**Methodology:**
Emission Limits (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

**Appendix A: Emission Calculations**
**VOC Limits**

**Company Name:** Waupaca Foundry, Inc. Plant 5
**Address City IN Zip:** 9856 State Highway 66, Tell City, Indiana 47586
**Permit Number:** T123-33768-00019
**Reviewer:** Sarah Street

| Stack ID | Process | Year of Construction (Modification) | Process ID | Control Device | Throughput (tons/hr) | VOC Emission Limits for Individual Process (lb/ton) | VOC Emission Limit for Individual Process (lb/hr) | VOC Stack Limit (lb/hr) |
|---|---|---|---|---|---|---|---|---|
| S11 | Phase I Core manufacturing | 1996 | P41 | No control | 16 | - | 4.6 lb/hr and 20.2 tons/yr | - |
| | Phase I Core machine & oven | 1996 | P51 | No control | 16.8 MMBtu/hr | - | 0.10 lb/hr and 0.43 tons/yr | - |

| Stack ID | Process | Year of Construction (Modification) | Process ID | Control Device | Throughput (tons/hr) | VOC Emission Limits for Individual Process (lb/ton) | VOC Emission Limit for Individual Process (lb/hr) | VOC Stack Limit (lb/hr) |
|---|---|---|---|---|---|---|---|---|
| S12 | Phase I Ladle preheating operation | 1996 | P53 | No control | 11.5 MMBtu/hr | - | - | 0.06621 |

| Stack ID | Process | Year of Construction (Modification) | Process ID | Control Device | Throughput (tons/hr) | VOC Emission Limits for Individual Process (lb/ton) | VOC Emission Limit for Individual Process (lb/hr) | VOC Stack Limit (lb/hr) |
|---|---|---|---|---|---|---|---|---|
| S14 | Phase II phenolic-urethane core making | 1998 (2001, 2003) | P43 | Packed bed scrubber (C14) | 20 | 45.60 tons/yr; 326 IAC 8-1-6 (BACT) | | |
| | Phase II phenolic-urethane core making | 1998 (2001, 2003) | P44 | | 12 | | | |
| | Core Room Expansion II phenolic-urethane core machine | 2008 | P45A | | 6 | 10.51 tons/yr; 326 IAC 2-2 (PSD BACT) 326 IAC 8-1-6 (BACT) | | |

| Stack ID | Process | Year of Construction (Modification) | Process ID | Control Device | Throughput (tons/hr) | VOC Emission Limits for Individual Process (lb/ton) | VOC Emission Limit for Individual Process (lb/hr) | VOC Stack Limit (lb/hr) |
|---|---|---|---|---|---|---|---|---|
| S15 | Line 5 Pouring/Mold Cooling | 1998 (2011) | P60 | Baghouse (C15) | 28 | 1.40 | - | 141.4 (combined for S15 and S16) |
| | Line 5 Shakeout [3] | 1998 (2011) | P61 | | 28 | | - | |
| | Line 5 Cast Cooling | 1998 (2011) | P62 | | 28 | - | - | |
| | Line 6 Pouring/Mold Cooling | 1998 (2011) | P65 | | 20 | 1.40 | - | |
| | Line 6 Shakeout [4] | 1998 (2011) | P66 | | 20 | | - | |
| | Line 6 Cast Cooling [5] | 1998 (2011) | P67 | | 20 | - | - | |
| | Line 7 Pouring/Mold Cooling | 1998 (2011) | P70 | | 33 | 1.40 | - | |
| | Line 7 Shakeout [6] | 1998 (2011) | P71 | | 33 | | - | |
| | Line 7 Cast Cooling [7] | 1998 (2011) | P72 | | 33 | - | - | |
| | Line 8 Pouring/Mold Cooling | 1998 (2011) | P75 | | 20 | 1.40 | - | |
| | Phase II Return Sand Handling/Screening (8) | 1998 (2011) | P80 | | 660 | - | - | |
| | Phase II Sand Mulling and Handling | 1998 (2011) | P81 | | 660 | - | - | |
| | Phase II Sand Blending and Cooling | 1998 (2011) | P82 | | 660 | - | - | |
| | Phase II Spent Sand and Dust Handling | 1998 (2011) | P83 | | 55 | - | - | |
| | Phase II Metal Returns Handling System [9] | 1998 (2011) | P84 | | 44 | - | - | |
| | Tumbleblast shotblast machine | 2001 | P55 | | 20 | - | - | |
| | Phase II Ductile Iron Treatment Ladle Cleaning [10] | 1998 (2011) | n/a | | 100 lbs burn bars/hr | - | - | |
| | Phase II two (2) ductile iron treatment stations | 1998 (2001, 2011) | P35 | Baghouses C15 and C35 | 100 | - | - | |
| | Phase II Ladle Preheating | 1996 | P53B | No control | 11.5 MMBtu/hr | - | - | |
| | Phase II air make-up units | 1998 (2011) | P54 | No control | 80 MMBtu/hr | - | - | |

**Notes:**
(3) Line 5 Shakeout exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(4) Line 6 Shakeout exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(5) Line 6 Cast Cooling exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(6) Line 7 Shakeout exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(7) Line 7 Cast Cooling exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(8) Phase II Return Sand Handling/Screening exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(9) Phase II Metal Returns Handling System exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)

(10) The ductile treatment operation includes locations where treatment occurs and iron is transferred. Fumes in the treatment area are captured but those in the metal transfer area are not. Burn bar usage for this operation has been split 25/75 to allow separate emission estimates for the captured emissions (Baghouse C15) versus emissions exhausting indoors.

**Methodology:**
Emission Limits (lb/hr) = Emission Limits for Individual Process (lb/ton) x Throughput (tons/yr)

**Appendix A: Emission Calculations**
**VOC Limits**

**Company Name:** **Waupaca Foundry, Inc. Plant 5**
**Address City IN Zip:** **9856 State Highway 66, Tell City, Indiana 47586**
**Permit Number:** **T123-33768-00019**
**Reviewer:** **Sarah Street**

| Stack ID | Process | Year of Construction (Modification) | Process ID | Control Device | Throughput (tons/hr) | VOC Emission Limits for Individual Process (lb/ton) | VOC Emission Limit for Individual Process (lb/hr) | VOC Stack Limit (lb/hr) |
|---|---|---|---|---|---|---|---|---|
| S16 | Line 5 Shakeout (3) | 1998 (2011) | P61 | Baghouse (C16) | 28 | 1.40 | - | 141.4 (combined for S15 and S16) |
| | Line 5 Pick and Sort | 1998 (2011) | P63 | | 28 | - | - | |
| | Line 5 Cleaning/ Grinding | 1998 (2011) | P64 | | 28 | - | - | |
| | Line 6 Shakeout (4) | 1998 (2011) | P66 | | 20 | 1.40 | - | |
| | Line 6 Cast Cooling (5) | 1998 (2011) | P67 | | 20 | - | - | |
| | Line 6 Pick and Sort | 1998 (2011) | P68 | | 20 | - | - | |
| | Line 6 Cleaning/ Grinding | 1998 (2011) | P69 | | 20 | - | - | |
| | Line 7 Shakeout (6) | 1998 (2011) | P71 | | 33 | 1.40 | - | |
| | Line 7 Cast Cooling (7) | 1998 (2011) | P72 | | 33 | - | - | |
| | Line 7 Pick and Sort | 1998 (2011) | P73 | | 33 | - | - | |
| | Line 7 Cleaning/ Grinding | 1998 (2011) | P74 | | 33 | - | - | |
| | Line 8 Shakeout | 1998 (2011) | P76 | | 20 | 1.40 | - | |
| | Line 8 Cast Cooling | 1998 (2011) | P77 | | 20 | - | - | |
| | Line 8 Pick and Sort | 1998 (2011) | P78 | | 20 | - | - | |
| | Line 8 Cleaning/ Grinding | 1998 (2011) | P79 | | 20 | - | - | |
| | Phase II Return Sand Handling/Screening (8) | 1998 (2011) | P80 | | 660 | - | - | |
| | Phase II Metal Returns Handling System (9) | 1998 (2011) | P84 | | 44 | - | - | |
| | Phase I Autogrinder | 2008 | P87 | | 22.5 | - | - | |

**Notes:**
(3) Line 5 Shakeout exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(4) Line 6 Shakeout exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(5) Line 6 Cast Cooling exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(6) Line 7 Shakeout exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(7) Line 7 Cast Cooling exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(8) Phase II Return Sand Handling/Screening exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(9) Phase II Metal Returns Handling System exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)

| Stack ID | Process | Year of Construction (Modification) | Process ID | Control Device | Throughput (tons/hr) | VOC Emission Limits for Individual Process (lb/ton) | VOC Emission Limit for Individual Process (lb/hr) | VOC Stack Limit (lb/hr) |
|---|---|---|---|---|---|---|---|---|
| S17 | Core Room Expansion I phenolic-urethane core making process | 2005 | P47 | Packed bed scrubber (C17) | 90 | 39.4 tons/yr; 326 IAC 8-1-6 BACT Limit, PSD Minor Limit | | |

**Methodology:**
Emission Limits (lb/hr) = Emission Limits for Individual Process (lb/ton) x Throughput (tons/yr)

**Appendix A: Emission Calculations**
**CO Limits**

Company Name: Waupaca Foundry, Inc. Plant 5
Address City IN Zip: 9856 State Highway 66, Tell City, Indiana 47586
SSM No: 123-35760-00019
SPM No. 123-35799-00019
Reviewer: Mehul Sura

| Stack ID | Process | Year of Construction (Modification) | Process ID | Control Device | Throughput (tons/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 (1) | 1996 (1998, 2007, 2011) | P01 | Three (3) Baghouses (C01, C02, C03) | 38 | 5.00 | 106.5 | 606.7 |
| | Line 1 Shakeout | 1996 (1998, 2007, 2011) | P02 | | 38 | 1.00 | 38 | |
| | Line 1 Cast Cooling (2) | 1996 (1998, 2007, 2011) | P03 | | 38 | - | - | |
| | Line 1 Pick and Sort | 1996 (1998, 2007, 2011) | P04 | | 38 | - | - | |
| | Line 2 Pouring/Mold Cooling | 1996 (2011) | P06 | | 17 | 5.00 | 85 | |
| | Line 2 Shakeout | 1996 (2011) | P07 | | 17 | 1.00 | 17 | |
| | Line 2 Cast Cooling | 1996 (2011) | P08 | | 17 | - | - | |
| | Line 3 Pouring/Mold Cooling | 1996 (2011) | P11 | | 17 | 5.00 | 85 | |
| | Line 3 Shakeout | 1996 (2011) | P12 | | 17 | 1.00 | 17 | |
| | Line 3 Cast Cooling | 1996 (2011) | P13 | | 17 | - | - | |
| | Line 4 Pouring/Mold Cooling | 1996 (2011, 2014) | P16 | | 40 | 5.00 | 200 | |
| | Line 4 Shakeout | 1996 (2011, 2014) | P17 | | 40 | 1.00 | 40 | |
| | Line 4 Cast Cooling | 1996 (2011, 2014) | P18 | | 40 | - | - | |
| | Line 4 Pick and Sort | 1996 (2011, 2014) | P19 | | 40 | - | - | |
| | Phase I Return Sand Handling/Screening | 1996 | P21 | | 522 | - | - | |
| | Phase I Sand Cooling/Water Addition | 1996 | P22 | | 522 | - | - | |
| | Phase I Sand Mulling/Handling | 1996 | P23 | | 522 | - | - | |
| | Phase I Spent Sand Handling/Processing | 1996 | P24 | | 54 | - | - | |
| | Phase I Air makeup units | 1996 | P52 | | 65.6 MMBtu/hr | - | 18.2 | |
| | Phase I Line 1 Ladle Cleaning | 1996 (2013) | P86A | | 100 lbs burn bars/hr | - | - | |
| | Phase I Line 4 Ladle Cleaning | 1996 (2013) | P86B | | 100 lbs burn bars/hr | - | - | |

**Notes:**
(1) Line 1 Pouring/Mold Cooling is exhausting to stacks S01 and S04
(2) Line 1 Cast Cooling is exhausting to stacks S01 and S04

| Stack ID | Process | Year of Construction (Modification) | Process ID | Control Device | Throughput (tons/hr) | CO Emission Limits for Individual Process (lb/ton) | CO Emission Limits for Individual Process (lb/hr) | CO Stack Limit (lb/hr) |
|---|---|---|---|---|---|---|---|---|
| S04 | Line 1 Pouring/Mold Cooling (1) | 1996 (1998, 2007, 2011) | P01 | Three (3) Baghouses (C01, C02, C03) | 38 | 5.00 | 84.5 | 84.5 |
| | Line 1 Cast Cooling (2) | 1996 (1998, 2007, 2011) | P03 | | 38 | - | - | |

**Notes:**
(1) Line 1 Pouring/Mold Cooling is exhausting to stacks S01 and S04
(2) Line 1 Cast Cooling is exhausting to stacks S01 and S04

| Stack ID | Process | Year of Construction (Modification) | Process ID | Control Device | Throughput (tons/hr) | CO Emission Limits for Individual Process (lb/ton) | CO Emission Limits for Individual Process (lb/hr) | CO Stack Limit (lb/hr) |
|---|---|---|---|---|---|---|---|---|
| S09 | Phase I gray iron cupola | 1996 (2011) | P30 | Baghouse (C09A), Incinerator (C11A), & Lime injection system (C12A) | 100 | 0.40 | - | 80.00 |
| | Phase II cupola iron melting system | 1998 (2011) | P33 | Baghouse (C09B), Recuperative Incinerator (C11B), & Lime injection system (C12B) | 100 | | | |

| Stack ID | Process | Year of Construction (Modification) | Process ID | Control Device | Throughput (tons/hr) | CO Emission Limits for Individual Process (lb/ton) | CO Emission Limits for Individual Process (lb/hr) | CO Stack Limit (lb/hr) |
|---|---|---|---|---|---|---|---|---|
| S11 | Phase I Core manufacturing | 1996 | P41 | No control | 16 | - | - | 0.59 lb/hr and 2.58 tons/yr |
| | Phase I Core machine & oven | 1996 | P51 | No control | 16.8 MMBtu/hr | - | - | |

**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

**Appendix A: Emission Calculations**
**CO Limits**

**Company Name:** Waupaca Foundry, Inc. Plant 5
**Address City IN Zip:** 9856 State Highway 66, Tell City, Indiana 47586
**Permit Number:** T123-33768-00019
**Reviewer:** Sarah Street

| Stack ID | Process | Year of Construction (Modification) | Process ID | Control Device | Throughput (tons/hr) | CO Emission Limits for Individual Process (lb/ton) | CO Emission Limits for Individual Process (lb/hr) | CO Stack Limit (lb/hr) |
|---|---|---|---|---|---|---|---|---|
| S12 | Phase I Ladle preheating operation | 1996 | P53 | No control | 11.5 MMBtu/hr | - | - | 0.40 |

| Stack ID | Process | Year of Construction (Modification) | Process ID | Control Device | Throughput (tons/hr) | CO Emission Limits for Individual Process (lb/ton) | CO Emission Limits for Individual Process (lb/hr) | CO Stack Limit (lb/hr) |
|---|---|---|---|---|---|---|---|---|
| S15 | Line 5 Pouring/Mold Cooling | 1998 (2011) | P60 | Baghouse (C15) | 28 | 5.00 | - | 546.00 |
| | Line 5 Shakeout (3) | 1998 (2011) | P61 | | 28 | 1.00 | - | |
| | Line 5 Cast Cooling | 1998 (2011) | P62 | | 28 | - | - | |
| | Line 6 Pouring/Mold Cooling | 1998 (2011) | P65 | | 20 | 5.00 | - | |
| | Line 6 Shakeout (4) | 1998 (2011) | P66 | | 20 | 1.00 | - | |
| | Line 6 Cast Cooling (5) | 1998 (2011) | P67 | | 20 | - | - | |
| | Line 7 Pouring/Mold Cooling | 1998 (2011) | P70 | | 33 | 5.00 | - | |
| | Line 7 Shakeout (6) | 1998 (2011) | P71 | | 33 | 1.00 | - | |
| | Line 7 Cast Cooling (7) | 1998 (2011) | P72 | | 33 | - | - | |
| | Line 8 Pouring/Mold Cooling | 1998 (2011) | P75 | | 20 | 5.00 | - | |
| | Phase II Return Sand Handling/Screening (8) | 1998 (2011) | P80 | | 660 | - | - | |
| | Phase II Sand Mulling and Handling | 1998 (2011) | P81 | | 660 | - | - | |
| | Phase II Sand Blending and Cooling | 1998 (2011) | P82 | | 660 | - | - | |
| | Phase II Spent Sand and Dust Handling | 1998 (2011) | P83 | | 55 | - | - | |
| | Phase II Metal Returns Handling System (9) | 1998 (2011) | P84 | | 44 | - | - | |
| | Tumbleblast shotblast machine | 2001 | P55 | | 20 | - | - | |
| | Phase II Ductile Iron Treatment Ladle Cleaning (10) | 1998 (2011) | n/a | | 100 lbs burn bars/hr | - | - | |
| | Phase II two (2) ductile iron treatment stations | 1998 (2001, 2011) | P35 | Baghouses C15 and C35 | 100 | - | - | |
| | Phase II Ladle Preheating | 1996 | P53B | No control | 11.5 MMBtu/hr | - | - | |
| | Phase II air make-up units | 1998 (2011) | P54 | No control | 80 MMBtu/hr | - | - | |

**Notes:**
(3) Line 5 Shakeout exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(4) Line 6 Shakeout exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(5) Line 6 Cast Cooling exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(6) Line 7 Shakeout exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(7) Line 7 Cast Cooling exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(8) Phase II Return Sand Handling/Screening exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(9) Phase II Metal Returns Handling System exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)

(10) The ductile treatment operation includes locations where treatment occurs and iron is transferred. Fumes in the treatment area are captured but those in the metal transfer area are not. Burn bar usage for this operation has been split 25/75 to allow separate emission estimates for the captured emissions (Baghouse C15) versus emissions exhausting indoors.

| Stack ID | Process | Year of Construction (Modification) | Process ID | Control Device | Throughput (tons/hr) | CO Emission Limits for Individual Process (lb/ton) | CO Emission Limits for Individual Process (lb/hr) | CO Stack Limit (lb/hr) |
|---|---|---|---|---|---|---|---|---|
| S16 | Line 5 Shakeout (3) | 1998 (2011) | P61 | Baghouse (C16) | 28 | 1.00 | - | 60.00 |
| | Line 5 Pick and Sort | 1998 (2011) | P63 | | 28 | - | - | |
| | Line 5 Cleaning/ Grinding | 1998 (2011) | P64 | | 28 | - | - | |
| | Line 6 Shakeout (4) | 1998 (2011) | P66 | | 20 | 1.00 | - | |
| | Line 6 Cast Cooling (5) | 1998 (2011) | P67 | | 20 | - | - | |
| | Line 6 Pick and Sort | 1998 (2011) | P68 | | 20 | - | - | |
| | Line 6 Cleaning/ Grinding | 1998 (2011) | P69 | | 20 | - | - | |
| | Line 7 Shakeout (6) | 1998 (2011) | P71 | | 33 | 1.00 | - | |
| | Line 7 Cast Cooling (7) | 1998 (2011) | P72 | | 33 | - | - | |
| | Line 7 Pick and Sort | 1998 (2011) | P73 | | 33 | - | - | |
| | Line 7 Cleaning/ Grinding | 1998 (2011) | P74 | | 33 | - | - | |
| | Line 8 Shakeout | 1998 (2011) | P76 | | 20 | 1.00 | - | |
| | Line 8 Cast Cooling | 1998 (2011) | P77 | | 20 | - | - | |
| | Line 8 Pick and Sort | 1998 (2011) | P78 | | 20 | - | - | |
| | Line 8 Cleaning/ Grinding | 1998 (2011) | P79 | | 20 | - | - | |
| | Phase II Return Sand Handling/Screening (8) | 1998 (2011) | P80 | | 660 | - | - | |
| | Phase II Metal Returns Handling System (9) | 1998 (2011) | P84 | | 44 | - | - | |
| | Phase I Autogrinder | 2008 | P87 | | 22.5 | - | - | |

**Notes:**
(3) Line 5 Shakeout exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(4) Line 6 Shakeout exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(5) Line 6 Cast Cooling exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(6) Line 7 Shakeout exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(7) Line 7 Cast Cooling exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(8) Phase II Return Sand Handling/Screening exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(9) Phase II Metal Returns Handling System exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)

**Methodology:**
Emission Limits (lb/hr) = Emission Limits for Individual Process (lb/ton) x Throughput (tons/yr)

**Appendix A: Emission Calculations**
**HAP Limits**

Company Name: Waupaca Foundry, Inc. Plant 5
Address City IN Zip: 9856 State Highway 66, Tell City, Indiana 47586
SSM No: 123-35760-00019
SPM No. 123-35799-00019
Reviewer: Mehul Sura

| Stack ID | Process | Year of Construction (Modification) | Process ID | Control Device | Throughput (tons/hr) | Lead Stack Limit (lb/hr) | Beryllium Stack Limit (lb/hr) |
|---|---|---|---|---|---|---|---|
| S01 | Line 1 Pouring/Mold Cooling (1) | 1996 (1998, 2007, 2011) | P01 | Three (3) Baghouses (C01, C02, C03) | 38 | 0.32 | 0.0006 |
| | Line 1 Shakeout | 1996 (1998, 2007, 2011) | P02 | | 38 | | |
| | Line 1 Cast Cooling (2) | 1996 (1998, 2007, 2011) | P03 | | 38 | | |
| | Line 1 Pick and Sort | 1996 (1998, 2007, 2011) | P04 | | 38 | | |
| | Line 2 Pouring/Mold Cooling | 1996 (2011) | P06 | | 17 | | |
| | Line 2 Shakeout | 1996 (2011) | P07 | | 17 | | |
| | Line 2 Cast Cooling | 1996 (2011) | P08 | | 17 | | |
| | Line 3 Pouring/Mold Cooling | 1996 (2011) | P11 | | 17 | | |
| | Line 3 Shakeout | 1996 (2011) | P12 | | 17 | | |
| | Line 3 Cast Cooling | 1996 (2011) | P13 | | 17 | | |
| | Line 4 Pouring/Mold Cooling | 1996 (2011, 2014) | P16 | | 40 | | |
| | Line 4 Shakeout | 1996 (2011, 2014) | P17 | | 40 | | |
| | Line 4 Cast Cooling | 1996 (2011, 2014) | P18 | | 40 | | |
| | Line 4 Pick and Sort | 1996 (2011, 2014) | P19 | | 40 | | |
| | Phase I Return Sand Handling/Screening | 1996 | P21 | | 522 | | |
| | Phase I Sand Cooling/Water Addition | 1996 | P22 | | 522 | | |
| | Phase I Sand Mulling/Handling | 1996 | P23 | | 522 | | |
| | Phase I Spent Sand Handling/Processing | 1996 | P24 | | 54 | | |
| | Phase I Air makeup units * | 1996 | P52 | | 65.6 MMBtu/hr | | |
| | Phase I Line 1 Ladle Cleaning | 1996 (2013) | P86A | | 100 lbs burn bars/hr | | |
| | Phase I Line 4 Ladle Cleaning | 1996 (2013) | P86B | | 100 lbs burn bars/hr | | |

**Notes:**
* The Phase I Air makeup units (P52) are uncontrolled, but exhausting to Stack S01.
(1) Line 1 Pouring/Mold Cooling is exhausting to stacks S01 and S04
(2) Line 1 Cast Cooling is exhausting to stacks S01 and S04

| Stack ID | Process | Year of Construction (Modification) | Process ID | Control Device | Throughput (tons/hr) | Lead Stack Limit (lb/hr) | Beryllium Stack Limit (lb/hr) |
|---|---|---|---|---|---|---|---|
| S04 | Line 1 Pouring/Mold Cooling (1) | 1996 (1998, 2007, 2011) | P01 | Three (3) Baghouses (C01, C02, C03) | 38 | 0.002 | 0.00003 |
| | Line 1 Cast Cooling (2) | 1996 (1998, 2007, 2011) | P03 | | 38 | | |

**Notes:**
(1) Line 1 Pouring/Mold Cooling is exhausting to stacks S01 and S04
(2) Line 1 Cast Cooling is exhausting to stacks S01 and S04

| Stack ID | Process | Year of Construction (Modification) | Process ID | Control Device | Throughput (tons/hr) | Lead Stack Limit (lb/hr) | Beryllium Stack Limit (lb/hr) |
|---|---|---|---|---|---|---|---|
| S07 | Line 1 Cleaning/Grinding | 1996 (1998, 2007, 2011) | P05 | Baghouse (C07) | 27 | 0.008 | 0.00016 |
| | Line 2 Pick and Sort | 1996 (2011) | P09 | | 17 | | |
| | Line 2 Cleaning/Grinding | 1996 (2011) | P10 | | 17 | | |
| | Line 3 Pick and Sort | 1996 (2011) | P14 | | 17 | | |
| | Line 3 Cleaning/Grinding | 1996 (2011) | P15 | | 17 | | |
| | Line 4 Cleaning/Grinding | 1996 (2011, 2014) | P20 | | 40 | | |
| | Phase I Metallic Returns Handling | 1996 | P25 | | 33 | | |

**Appendix A: Emission Calculations**
**HAP Limits**

**Company Name:** **Waupaca Foundry, Inc. Plant 5**
**Address City IN Zip:** **9856 State Highway 66, Tell City, Indiana 47586**
**Permit Number:** **T123-33768-00019**
**Reviewer:** **Sarah Street**

| Stack ID | Process | Year of Construction (Modification) | Process ID | Control Device | Throughput (tons/hr) | Lead Stack Limit (lb/hr) | Beryllium Stack Limit (lb/hr) |
|---|---|---|---|---|---|---|---|
| S09 | Phase I gray iron cupola | 1996 (2011) | P30 | Baghouse (C09A), Incinerator (C11A), & Lime injection system (C12A) | 100 | 0.54 | 0.0016 |
| | Phase II cupola iron melting system | 1998 (2011) | P33 | Baghouse (C09B), Recuperative Incinerator (C11B), & Lime injection system (C12B) | 100 | | |

| Stack ID | Process | Year of Construction (Modification) | Process ID | Control Device | Throughput (tons/hr) | Lead Stack Limit (lb/hr) | Beryllium Stack Limit (lb/hr) |
|---|---|---|---|---|---|---|---|
| S15 | Line 5 Pouring/Mold Cooling | 1998 (2011) | P60 | Baghouse (C15) | 28 | 0.035 | 0.00069 |
| | Line 5 Shakeout [3] | 1998 (2011) | P61 | | 28 | | |
| | Line 5 Cast Cooling | 1998 (2011) | P62 | | 28 | | |
| | Line 6 Pouring/Mold Cooling | 1998 (2011) | P65 | | 20 | | |
| | Line 6 Shakeout [4] | 1998 (2011) | P66 | | 20 | | |
| | Line 6 Cast Cooling [5] | 1998 (2011) | P67 | | 20 | | |
| | Line 7 Pouring/Mold Cooling | 1998 (2011) | P70 | | 33 | | |
| | Line 7 Shakeout [6] | 1998 (2011) | P71 | | 33 | | |
| | Line 7 Cast Cooling [7] | 1998 (2011) | P72 | | 33 | | |
| | Line 8 Pouring/Mold Cooling | 1998 (2011) | P75 | | 20 | | |
| | Phase II Return Sand Handling/Screening (8) | 1998 (2011) | P80 | | 660 | | |
| | Phase II Sand Mulling and Handling | 1998 (2011) | P81 | | 660 | | |
| | Phase II Sand Blending and Cooling | 1998 (2011) | P82 | | 660 | | |
| | Phase II Spent Sand and Dust Handling | 1998 (2011) | P83 | | 55 | | |
| | Phase II Metal Returns Handling System [9] | 1998 (2011) | P84 | | 44 | | |
| | Tumbleblast shotblast machine | 2001 | P55 | | 20 | | |
| | Phase II Ductile Iron Treatment Ladle Cleaning [10] | 1998 (2011) | n/a | | 100 lbs burn bars/hr | | |
| | Phase II two (2) ductile iron treatment stations | 1998 (2001, 2011) | P35 | Baghouses C15 and C35 | 100 | 1,000 ppm and 0.0047 lbs/hr | 20 ppm and 0.00009 lbs/hr |
| | Phase II Ladle Preheating | 1996 | P53B | No control | 11.5 MMBtu/hr | combined with S15 | combined with S15 |
| | Phase II air make-up units | 1998 (2011) | P54 | No control | 80 MMBtu/hr | | |

**Notes:**
(3) Line 5 Shakeout exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(4) Line 6 Shakeout exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(5) Line 6 Cast Cooling exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(6) Line 7 Shakeout exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(7) Line 7 Cast Cooling exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(8) Phase II Return Sand Handling/Screening exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(9) Phase II Metal Returns Handling System exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)

(10) The ductile treatment operation includes locations where treatment occurs and iron is transferred. Fumes in the treatment area are captured but those in the metal transfer area are not. Burn bar usage for this operation has been split 25/75 to allow separate emission estimates for the captured emissions (Baghouse C15) versus emissions exhausting indoors.

**Appendix A: Emission Calculations**
**HAP Limits**

**Company Name:** Waupaca Foundry, Inc. Plant 5
**Address City IN Zip:** 9856 State Highway 66, Tell City, Indiana 47586
**Permit Number:** T123-33768-00019
**Reviewer:** Sarah Street

| Stack ID | Process | Year of Construction (Modification) | Process ID | Control Device | Throughput (tons/hr) | Lead Stack Limit (lb/hr) | Beryllium Stack Limit (lb/hr) |
|---|---|---|---|---|---|---|---|
| S16 | Line 5 Shakeout [3] | 1998 (2011) | P61 | Baghouse (C16) | 28 | 0.018 | 0.00036 |
| | Line 5 Pick and Sort | 1998 (2011) | P63 | | 28 | | |
| | Line 5 Cleaning/ Grinding | 1998 (2011) | P64 | | 28 | | |
| | Line 6 Shakeout [4] | 1998 (2011) | P66 | | 20 | | |
| | Line 6 Cast Cooling [5] | 1998 (2011) | P67 | | 20 | | |
| | Line 6 Pick and Sort | 1998 (2011) | P68 | | 20 | | |
| | Line 6 Cleaning/ Grinding | 1998 (2011) | P69 | | 20 | | |
| | Line 7 Shakeout [6] | 1998 (2011) | P71 | | 33 | | |
| | Line 7 Cast Cooling [7] | 1998 (2011) | P72 | | 33 | | |
| | Line 7 Pick and Sort | 1998 (2011) | P73 | | 33 | | |
| | Line 7 Cleaning/ Grinding | 1998 (2011) | P74 | | 33 | | |
| | Line 8 Shakeout | 1998 (2011) | P76 | | 20 | | |
| | Line 8 Cast Cooling | 1998 (2011) | P77 | | 20 | | |
| | Line 8 Pick and Sort | 1998 (2011) | P78 | | 20 | | |
| | Line 8 Cleaning/ Grinding | 1998 (2011) | P79 | | 20 | | |
| | Phase II Return Sand Handling/Screening (8) | 1998 (2011) | P80 | | 660 | | |
| | Phase II Metal Returns Handling System [9] | 1998 (2011) | P84 | | 44 | | |
| | Phase I Autogrinder | 2008 | P87 | | 22.5 | | |

**Notes:**
(3) Line 5 Shakeout exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(4) Line 6 Shakeout exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(5) Line 6 Cast Cooling exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(6) Line 7 Shakeout exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(7) Line 7 Cast Cooling exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(8) Phase II Return Sand Handling/Screening exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)
(9) Phase II Metal Returns Handling System exhausts to either Baghouse C15 (Stack S15) or Baghouse C16 (Stack S16)

| Stack ID | Process | Year of Construction (Modification) | Process ID | Control Device | Throughput (tons/hr) | Lead Stack Limit (lb/hr) | Beryllium Stack Limit (lb/hr) |
|---|---|---|---|---|---|---|---|
| S44 | Phase I charge and make-up operation | 1996 | P32 | Baghouse (C44) | 100 | - | 0.0000026 |
| | Phase I Ladle filling & iron transport system | 1996 | P85 | | 100 | - | - |
| | Phase I Melt Area Ladle Cleaning | 1996 | P86 | | 100 lbs burn bars/hr | - | - |
| | Phase I Iron bath desulfurization | 2011 | P34 | | 100 | 0.00064 | 0.00001 |
| | Phase II Melt Area Ladle Cleaning | 1998 (2011) | n/a | | 100 lbs burn bars/hr | 0.00004 | - |
| | Phase II enclosed cupola charge make-up and handling unit | 1998 (2011) | n/a | | 114 | | - |
| | Phase II ladle filling and iron transport operation | 1998 (2011) | n/a | | 188 | | - |

**Appendix A: Emission Calculations**
**Greenhouse Gas Emissions**

Company Name: Waupaca Foundry, Inc. Plant 5
Address City IN Zip: 9856 State Highway 66, Tell City, Indiana 47586
SSM No: 123-35760-00019
SPM No. 123-35799-00019
Reviewer: Mehul Sura

**I. Summary of source-wide Greenhouse Gas (GHG) emissions**

| | Potential GHGs as CO2e Emissions (tons/yr) |
|---|---|
| I. Casting Operations | 65,306 |
| II. Coke Combustion | 492,202 |
| III. Natural Gas Combustion | 105,019 |

**Total = 662,527**

See below for detailed calculations.
The GHGs from the one (1) emergencey diesel generator rated at 99 kW, are considered negligible.

**I. GHG emissions from Casting operations**

| Casting | | Maximum Throughput (tons/hr) | Maximum Throughput (tons/yr) | GHGs as CO2e Emission Factor (lb/ton) | Potential GHGs as CO2e Emissions (tons/yr) |
|---|---|---|---|---|---|
| Phase I Line 1 | P01 - Line 1 pouring/mold cooling operation<br>P03 - Line 1 cast cooling operation<br>P02 - Line 1 shakeout operation | 38.00 | 332,880 | 70.00 | 11,651 |
| Phase I Line 2 | P06 - Line 2 pouring/mold cooling operation<br>P08 - Line 2 cast cooling operation<br>P07 - Line 2 shakeout operation | 17.00 | 148,920 | 70.00 | 5,212 |
| Phase I Line 3 | P1 - Line 3 pouring/mold cooling operation<br>P13 - Line 3 cast cooling operation<br>P12 - Line 3 shakeout operation | 17.00 | 148,920 | 70.00 | 5,212 |
| Phase I Line 4 | P16 - Line 4 pouring/mold cooling operation<br>P18 - Line 4 cast cooling operation<br>P17 - Line 4 shakeout operation | 40.00 | 350,400 | 70.00 | 12,264 |
| Phase II Line 5 | P60 - Line 5 pouring/mold cooling operation<br>P62 - Line 5 cast cooling operation<br>P61 - Line 5 shakeout operation | 28.00 | 245,280 | 70.00 | 8,585 |
| Phase II Line 6 | P65 - Line 6 pouring/mold cooling operation<br>P67 - Line 6 cast cooling operation<br>P66 - Line 6 shakeout operation | 20.00 | 175,200 | 70.00 | 6,132 |
| Phase II Line 7 | P70 - Line 7 pouring/mold cooling operation<br>P72 - Line 7 cast cooling operation<br>P71 - Line 7 shakeout operation | 33.00 | 289,080 | 70.00 | 10,118 |
| Phase II Line 8 | P75 - Line 8 pouring/mold cooling operation<br>P77 - Line 8 cast cooling operation<br>P76 - Line 8 shakeout operation | 20.00 | 175,200 | 70.00 | 6,132 |
| | | | | **Total =** | 65,306 |

**Methodology**

GHGs as CO2e emissions is equal to CO2 emissions. CO2 emission factors from: Casting Emission Reduction Program (CERP), Carbon Monoxide and Carbon Dioxide Emissions in Metalcasting Pouring, Cooling and Shakeout Operations, March 2008, page 9. For shell mold process operations ((based on this document, 10 lb/ton is the emission factor for greensand casting operations)).
PTE (tons/yr) = Maximum Throughput (tons/yr) * Emission Factor (lb/ton) / 2,000 lb/ton

**Appendix A: Emission Calculations**
**Greenhouse Gas Emissions**

**Company Name: Waupaca Foundry, Inc. Plant 5**
**Address City IN Zip: 9856 State Highway 66, Tell City, Indiana 47586**
**Permit Number: T123-33768-00019**
**Reviewer: Sarah Street**

**II. GHG emissions from Coke Combustion in Cupolas**

| Potential Throughput tons/year | Max. Coke Usage (tons/hr) | |
|---|---|---|
| | 10 | Phase I gray iron cupola P30 |
| 175,200.0 | 10 | Phase II cupola iron melting system P33 |

| | Greenhouse Gas | | |
|---|---|---|---|
| | CO2 | CH4 | N2O |
| Emission Factor in lb/ton | 5,578.99 | 0.60 | 0.09 |
| Potential Emission in tons/yr | 488,719.85 | 52.68 | 7.66 |
| Summed Potential Emissions in tons/yr | 488,780 | | |
| CO2e Total in tons/yr | 492,202 | | |

**Methodology**
Pursuant to Table C-1 of 40 CFR Part 98 Subpart C, coke has a default high heat value of 24.8 MMBtu/ton
Emission Factors from Tables C-1 and 2 of 40 CFR Part 98 Subpart C and have been converted from kg/MMBtu to lb/ton.
Greenhouse Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Emission (tons/yr) = Throughput (tons/yr) x Emission Factor (lb/ton)/2,000 lb/ton
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).

**III. GHG emissions from Natural Gas Combustion**

| Heat Input Capacity MMBtu/hr | HHV mmBtu / mmscf | Potential Throughput MMCF/yr |
|---|---|---|
| 202.60 | 1020 | 1740.0 |

| Emission Unit | Capacity |
|---|---|
| Phase I air make-up units P52 | 65.60 |
| Phase I core oven P51 | 16.80 |
| Phase I ladle preheating operation P53 | 11.50 |
| Phase I ladle preheating operation P53B | 11.50 |
| Phase II air make-up units P54 | 80.00 |
| Core Room Expansion I core drying ovens & air make-up units P48 | 12.20 |
| Core Room Expansion II core dry oven P48A & P48B | 5.00 |

| | Greenhouse Gas | | |
|---|---|---|---|
| | CO2 | CH4 | N2O |
| Emission Factor in lb/MMcf | 120,000 | 2.3 | 2.2 |
| Potential Emission in tons/yr | 104,399 | 2.0 | 1.9 |
| Summed Potential Emissions in tons/yr | 104,403 | | |
| CO2e Total in tons/yr | 105,019 | | |

**Methodology**
All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas
The N2O Emission Factor for uncontrolled is 2.2. The N2O Emission Factor for low Nox burner is 0.64.
Emission Factors are from AP 42, Table 1.4-2 SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03.
Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (25) + N2O Potential Emission ton/yr x N2O GWP (298).

**Appendix A: Emission Calculations**
**Ladle Cleaning Operations**

Company Name: Waupaca Foundry, Inc. Plant 5
Address City IN Zip: 9856 State Highway 66, Tell City, Indiana 47586
SSM No: 123-35760-00019
SPM No. 123-35799-00019
Reviewer: Mehul Sura

| Emission Unit/Process | Control ID | Flow Rate of Baghouse Control (acfm) | Outlet Grain Loading (grain/dscf) | Uncontrolled PTE of PM | | Controlled PTE of PM | |
|---|---|---|---|---|---|---|---|
| | | | | (lbs/hr) | (tons/yr) | (lbs/hr) | (tons/yr) |
| Phase 1 Line 1 Ladle Cleaning | Baghouses C01-C03 | 15,000 | 0.005 | 642.86 | 2,815.71 | 0.64 | 2.82 |
| Phase 1 Line 4 Ladle Cleaning | Baghouses C01-C03 | 15,000 | 0.005 | 642.86 | 2,815.71 | 0.64 | 2.82 |
| | | | | **1,285.71** | **5,631.43** | **1.29** | **5.63** |

**Methodology**
Control Efficiency = 99.9%
Assume PM=PM10=PM2.5
Uncontrolled PTE of PM (lb/hr) = Controlled PTE of PM (lb/hr) / (100%-control efficiency(%))
Uncontrolled PTE of PM (ton/yr) = Controlled PTE of PM (ton/yr) / (100%-control efficiency(%))
PTE of PM (lbs/hr) = Air Flow Rate (acfm) * Outlet Grain Loading (gr/dscf) * 60 min/hr * 1 lb/7,000 gr
PTE of PM (tons/yr) = Air Flow Rate (acfm) * Outlet Grain Loading (gr/dscf) * 60 min/hr * 1 lb/7,000 gr * 8,760 hrs/yr * 1 ton/2,000 lbs

**Inventory of Ladle Cleaning Maintenance using Burn Bars**

| Description | Plant 5 Location | Process ID | Baghouse ID | Stack ID | Peak Usage (lbs/hr) | Average Usage (lbs/hr) | Average Usage (lbs/yr) | PM Factor [5] (lbs/lbs) | Uncontrolled PM PTE (lbs/hr) | Uncontrolled PM PTE (tons/yr) | Baghouse Capture [6] (%) | Controlled PM PTE (lbs/hr) | Controlled PM PTE (tons/yr) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phase 1 Melt Area Ladle Cleaning [1] | P30 | P86 | C44 | S44 | 100 | 7.1 | 61,800 | 0.1 | 10.00 | 43.80 | 99.9% | 0.01 | 0.0438 |
| Phase 2 Melt Area Ladle Cleaning [1] | P33 | n/a | C44 | S44 | 100 | 7.1 | 61,800 | 0.1 | 10.00 | 43.80 | 99.9% | 0.01 | 0.0438 |
| Phase 1 Line 1 Ladle Cleaning [2] | P01 | P86A | C01 - C03 | S01 | 100 | 0.6 | 5,150 | see calculations above | | | | | |
| Phase 1 Line 2 Ladle Cleaning [3] | P06 | n/a | n/a | n/a | 100 | 0.6 | 5,150 | 0.1 | 10.00 | 43.80 | 0% | 10.00 | 43.8000 |
| Phase 1 Line 3 Ladle Cleaning [3] | P11 | n/a | n/a | n/a | 100 | 0.6 | 5,150 | 0.1 | 10.00 | 43.80 | 0% | 10.00 | 43.8000 |
| Phase 1 Line 4 Ladle Cleaning [2] | P16 | P86B | C01 - C03 | S01 | 100 | 0.6 | 5,150 | see calculations above | | | | | |
| Phase 2 Line 5 Ladle Cleaning [3] | P60 | n/a | n/a | n/a | 100 | 1.2 | 10,300 | 0.1 | 10.00 | 43.80 | 0% | 10.00 | 43.8000 |
| Phase 2 Line 6 Ladle Cleaning [3] | P65 | n/a | n/a | n/a | 100 | 1.2 | 10,300 | 0.1 | 10.00 | 43.80 | 0% | 10.00 | 43.8000 |
| Phase 2 Line 7 Ladle Cleaning [3] | P70 | n/a | n/a | n/a | 100 | 1.2 | 10,300 | 0.1 | 10.00 | 43.80 | 0% | 10.00 | 43.8000 |
| Phase 2 Line 8 Ladle Cleaning [3] | P75 | n/a | n/a | n/a | 100 | 1.2 | 10,300 | 0.1 | 10.00 | 43.80 | 0% | 10.00 | 43.8000 |
| Phase 2 Ductile Iron Treatment Ladle Cleaning [4] | P35 | n/a | n/a | n/a | 100 | 1.8 | 15,450 | 0.1 | 10.00 | 43.80 | 0% | 10.00 | 43.8000 |
| Phase 2 Ductile Iron Treatment Ladle Cleaning [4] | P35 | n/a | C15 | S15 | 100 | 0.6 | 5,150 | 0.1 | 10.00 | 43.80 | 99.9% | 0.01 | 0.0438 |
| | | | | | | | | | | | | | |
| **Total** | | | | | | **23.5** | **206,000** | | **100.00** | **438.00** | | **70.03** | **306.73** |

**Methodology**
Assume PM=PM10=PM2.5
Average Usage (lbs/hr) = Average Usage (lbs/yr) / 8,760 hrs/yr
Uncontrolled PTE (lbs/hr) = Peak Usage (lbs/hr) * PM Factor (lbs/lbs)
Uncontrolled PTE (tons/yr) = Uncontrolled PTE (lbs/hr) * 8,760 hrs/yr / 2,000 lbs/ton
Controlled PTE (lbs/hr) = Uncontrolled PTE (lbs/hr) * (1-BH Capture (%))
Controlled PTE (tons/yr) = Uncontrolled PTE (tons/yr) * (1-BH Capture (%))

**Notes**
(1) These ladle cleaning operations currently vent to Baghouse C44.
(2) These ladle cleaning operations will vent to Baghouses C01-C03 as a result of this proposed modification.
(3) All casting line ladle cleaning is not ducted to baghouses for the following reasons: 1) ladle cleaning is a periodic, maintenance operation, 2) the small amount of fumes did not justify the expense, 3) the location of the cleaning makes fume capture difficult without interfering with production operations, and 4) the proposed capture of the Line 1 and 4 ladle cleaning fumes is a pilot project to determine if it will effectively capture fumes, and not interfere with production operations. If it is successful, similar capture systems will be considered for the other casting line ladle cleaning operations.
(4) The ductile treatment operation includes locations where treatment occurs and iron is transferred. Fumes in the treatment area are captured but those in the metal transfer area are not. Burn bar usage for this operation has been split 25/75 to allow separate emission estimates for the captured emissions (Baghouse C15) versus emissions exhausting indoors.
(5) There are no emission tests for ladle cleaning operations. For emissions reporting, Waupaca Foundry has assumed that PM emissions are 10% of the burn bar usage though the fumes are comprised of both the burn bar and material removed from the ladle.
(6) For the ladle cleaning operations which are captured and exhausted through a baghouse, Waupaca Foundry has assume that 99.9% of the fumes will be removed.

Appendix A: Emission Calculations
Emissions Summary
**sand reclamation system (P27)**

Company Name: Waupaca Foundry, Inc. Plant 5
Address City IN Zip: 9856 State Highway 66, Tell City, Indiana 47586
SSM No: 123-35760-00019
SPM No. 123-35799-00019
Reviewer: Mehul Sura

Maximum Sand Throughput (tons/hr) 9

| | Process | PM | PM10 | PM2.5 | SO2 | NOX | VOC | CO | lead | Be | single HAP | combined HAPs | GHGs |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| processes vented to baghouses (C27A and C27B) and combustion processes, combined | emission factor (lbs/ton) | 3.6 | 0.54 | 0.54 | - | 0.16 | 0.25 | 0.78 | 0.00025 | 0.000005 | see note #2 | | 1230 |
| | Potential Emissions (tons/yr) | 141.91 | 21.29 | 21.29 | 0.03 (see note #1) | 6.31 | 9.86 | 30.75 | 0.010 | 0.00020 | | | 48486.6 |
| | Permit Limit (lbs/hr) | 1.70 | 1.70 | 1.70 | - | - | 2.260 | 22.8 | - | - | 2.26 | 5.68 | - |
| | Limited Emissions (tons/yr) | 7.45 | 7.45 | 7.45 | - | - | 9.90 | 99.90 | - | - | 9.90 | 24.90 | 48486.6 |
| | baghouse control efficiency (%) | 99.00% | 99.00% | 99.00% | - | - | - | - | - | - | - | - | - |
| | controlled emission (lbs/hr) | 0.32 | 0.05 | 0.05 | - | - | - | - | - | - | - | - | - |
| emissions from the two (2) iron separators | emission factor (lbs/ton) | 0.03 | 0.03 | 0.03 | - | - | - | - | - | - | - | - | - |
| | Potential Emissions (tons/yr) | 1.18 | 1.18 | 1.18 | - | - | 0.000 | - | - | - | - | - | - |
| Total Potential Emissions (tons/yr) | | 143.09 | 22.47 | 22.47 | 0.03 | 6.31 | 9.86 | 30.75 | 0.01 | 0.0002 | 9.90 | 24.90 | 48486.60 |
| Total Limited Emissions (tons/year) | | 8.63 | 8.63 | 8.63 | 0.03 | 6.31 | 9.86 | 99.90 | 0.01 | 0.00 | 9.90 | 24.90 | 48486.60 |

Methodology
processes vented to baghouses (C27A and C27B) and combustion processes, combined
PM Emission factors is from AP 42 12.10-7. PM10 and PM2.5 Emission factors is from SCC# 30400350.

NOx and GHGs (CO2) emission factor have been provided by the source. Since these emission factors are higher than the emission factors specified in AP 42 Table 11.19.1-1, testing requirement will not be included in the permit to verify this emission factor.

VOC and CO emission factors, provided by the source, are from the test data of the similar thermal sand reclaimer located at Waupaca Foundry, Inc. Plant 23 in Wisconsin.
Lead and Beryllium emission factors are provided by the source.
Note #1: SO2 emissions are due to Natural Gas Combustion only.
Note #2: The source did not provide organic HAPs emissions due to combustion of organic material in the spent sand. Therefore, HAPs limits have been included in the permit and compliance with these limits will be verified through VOC (assumed as surrogate for HAPs) testing.
PM, PM10 and PM2.5 limits are proposed by the source.
Potential Emissions (tons/yr) = Maximum Sand Throughput (tons/hr) x Emission Factor (lb/ton) x [8760 (hrs/yr) / 2000 (lbs/ton)]
Limited Emissions (tons/yr) = Permit Limit (lbs/hr) x 8760 (hrs/yr) / 2000 (lbs/ton)
CO and HAPs limits are determined as follows:

| | CO | single HAP | combined HAPs |
|---|---|---|---|
| PSD significant level threshold (tons/year) | 99.9 | - | - |
| 326 IAC 2-4.1 threshold | - | 9.9 | 24.9 |
| Permit Limit (lb/hr) | 22.8 | 2.26 | 5.68 |

Permit Limit (lb/hr) = [threshold (tons/year) x 2000 (lbs/ton) / 8760 (hrs/yr)]

VOC limit is determined as follows:
It is assumed that the VOC is surrogate for the organic HAPs, therefore, VOC limit is made equal to single HAP limit.

emissions from the two (2) iron separators
PM10 Emission factor is from SCC# 30500202. It is assumed that PM10=PM=PM2.5
Potential Emissions (tons/yr) = Maximum Sand Throughput (tons/hr) x Emission Factor (lb/ton) x [8760 (hrs/yr) / 2000 (lbs/ton)]

**Natural Gas Combustion**

| Heat Input Capacity MMBtu/hr | mmBtu mmscf | Potential Throughput MMCF/yr |
|---|---|---|
| 10.0 | 1020 | 85.9 |

| | Pollutant | | | | | | |
|---|---|---|---|---|---|---|---|
| Emission Factor in lb/MMCF | PM* 1.9 | PM10* 7.6 | direct PM2.5* 7.6 | SO2 0.6 | NOx 100 **see below | VOC 5.5 | CO 84 |
| Potential Emission in tons/yr | 0.08 | 0.33 | 0.33 | 0.03 | 4.29 | 0.24 | 3.61 |

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.
PM2.5 emission factor is filterable and condensable PM2.5 combined.
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

**Methodology**
All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas
Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,020 MMBtu
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

**Hazardous Air Pollutants (HAPs)**

| | HAPs - Organics | | | | | |
|---|---|---|---|---|---|---|
| | Benzene | Dichloroben zene | Formaldehyde | Hexane | Toluene | **Total - Organics** |
| Emission Factor in lb/MMcf | 2.10E-03 | 1.20E-03 | 7.50E-02 | 1.80E+00 | 3.40E-03 | |
| Potential Emission in tons/yr | 9.02E-05 | 5.15E-05 | 3.22E-03 | 7.73E-02 | 1.46E-04 | **8.08E-02** |

| | HAPs - Metals | | | | | |
|---|---|---|---|---|---|---|
| | Lead | Cadmium | Chromium | Manganese | Nickel | **Total - Metals** |
| Emission Factor in lb/MMcf | 5.00E-04 | 1.10E-03 | 1.40E-03 | 3.80E-04 | 2.10E-03 | |
| Potential Emission in tons/yr | 2.15E-05 | 4.72E-05 | 6.01E-05 | 1.63E-05 | 9.02E-05 | **2.35E-04** |
| Methodology is the same as above. | | | | | **Total HAPs** | **0.08** |
| The five highest organic and metal HAPs emission factors are provided above. | | | | | **Worst HAP** | **0.08** |
| Additional HAPs emission factors are available in AP-42, Chapter 1.4. | | | | | | |

**Greenhouse Gases (GHGs)**

| | Greenhouse Gas | | |
|---|---|---|---|
| | CO2 | CH4 | N2O |
| Emission Factor in lb/MMcf | 120,000 | 2.3 | 2.2 |
| Potential Emission in tons/yr | 5,153 | 0.10 | 0.09 |
| Summed Potential Emissions in tons/yr | | 5,153 | |
| CO2e Total in tons/yr | | 5,184 | |

**Methodology**
The N2O Emission Factor for uncontrolled is 2.2. The N2O Emission Factor for low Nox burner is 0.64.
Emission Factors are from AP 42, Table 1.4-2 SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03.
Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (25) + N2O Potential Emission ton/yr x N2O GWP (298).

Appendix B
Technical Support Document (TSD) for a
Part 70 Significant Source and significant Permit Modification

## Source Background and Description

| | |
|---|---|
| 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) |
| Operation Permit No.: | T123-33768-00019 |
| Operation Permit Issuance Date: | July 17, 2014 |
| Significant Source Modification No.: | 123-35760-00019 |
| Significant Permit Modification No.: | 123-35799-00019 |
| Permit Reviewer: | Mehul Sura |

## Permit Organization by Emission Unit List

| Operations | Section A.2 | Permit D Section | Stack ID | Process | Process ID | Year of Construction (Modification) | Control Device(s) |
|---|---|---|---|---|---|---|---|
| Phase I Metal Melting | (a) | D.1 | S09 | Phase I gray iron cupola | P30 | 1996 (2011) | Baghouse (C09A), Incinerator (C11A), & Lime injection system (C12A) |
| Phase I Casting & Finishing | (b)(1)(A) | D.2 - Stacks S01, S04, and S07 | S01 and S04 | Line 1 Pouring/Mold Cooling | P01 | 1996 (1998, 2007, 2011) | Three (3) Baghouses (C01, C02, C03) |
| | (b)(1)(B) | | S01 | Line 1 Shakeout | P02 | 1996 (1998, 2007, 2011) | |
| | (b)(1)(C) | | S01 and S04 | Line 1 Cast Cooling | P03 | 1996 (1998, 2007, 2011) | |
| | (b)(1)(D) | | S01 | Line 1 Pick and Sort | P04 | 1996 (1998, 2007, 2011) | |
| | (b)(1)(E) | | S07 | Line 1 Cleaning/Grinding | P05 | 1996 (1998, 2007, 2011) | Baghouse (C07) |
| | (b)(2)(A) | | S01 | Line 2 Pouring/Mold Cooling | P06 | 1996 (2011) | Three (3) Baghouses (C01, C02, C03) |
| | (b)(2)(B) | | | Line 2 Shakeout | P07 | 1996 (2011) | |
| | (b)(2)(C) | | | Line 2 Cast Cooling | P08 | 1996 (2011) | |
| | (b)(2)(D) | | S07 | Line 2 Pick and Sort | P09 | 1996 (2011) | Baghouse (C07) |
| | (b)(2)(E) | | | Line 2 Cleaning/Grinding | P10 | 1996 (2011) | |
| | (b)(3)(A) | | S01 | Line 3 Pouring/Mold Cooling | P11 | 1996 (2011) | Three (3) Baghouses (C01, C02, C03) |
| | (b)(3)(B) | | | Line 3 Shakeout | P12 | 1996 (2011) | |
| | (b)(3)(C) | | | Line 3 Cast Cooling | P13 | 1996 (2011) | |
| | (b)(3)(D) | | S07 | Line 3 Pick and Sort | P14 | 1996 (2011) | Baghouse (C07) |
| | (b)(3)(E) | | | Line 3 Cleaning/Grinding | P15 | 1996 (2011) | |
| | (b)(4)(A) | | S01 | Line 4 Pouring/Mold Cooling | P16 | 1996 (2011, 2014) | Three (3) Baghouses (C01, C02, C03) |
| | (b)(4)(B) | | | Line 4 Shakeout | P17 | 1996 (2011, 2014) | |
| | (b)(4)(C) | | | Line 4 Cast Cooling | P18 | 1996 (2011, 2014) | |
| | (b)(4)(D) | | | Line 4 Pick and Sort | P19 | 1996 (2011, 2014) | |
| | (b)(4)(E) | | S07 | Line 4 Cleaning/Grinding | P20 | 1996 (2011, 2014) | Baghouse (C07) |
| Phase I Sand Handling | (c)(1) | | S01 | Phase I Return Sand Handling/Screening | P21 | 1996 | Three (3) Baghouses (C01, C02, C03) |
| | (c)(2) | | | Phase I Sand Cooling/Water | P22 | 1996 | |

| Operations | Section A.2 | Permit D Section | Stack ID | Process | Process ID | Year of Construction (Modification) | Control Device(s) |
|---|---|---|---|---|---|---|---|
| | | | | Addition | | | |
| | (c)(3) | | | Phase I Sand Mulling/Handling | P23 | 1996 | |
| | (c)(4) | | | Phase I Spent Sand Handling/Processing | P24 | 1996 | |
| Phase I Furnace Material Handling | (c)(5) | D.2 - Stacks S01, S04, and S07 | S07 | Phase I Metallic Returns Handling | P25 | 1996 | Baghouse (C07) |
| | (c)(6) | D.5 - Stack S44 | S44 | Phase I charge and make-up operation | P32 | 1996 | Baghouse (C44) |
| Phase I Core Making Operations | (c)(7) | D.4 - Core Making, Stacks S08, S11, S14, and S17 | S08 | Phase I Core sand handling | P40 | 1996 | Baghouse (C08) |
| | (c)(8) | | S11 | Phase I Core manufacturing | P41 | 1996 | No control |
| | (c)(9) | | | Phase I Core machine & oven | P51 | 1996 | No control |
| Phase I Ladle Operations | (c)(10) | D.6 - Stack S12 | S12 | Phase I Ladle preheating operation | P53 | 1996 | No control |
| | (c)(11) | D.3 - Stacks S15 and S16 | S15 | Phase II Ladle Preheating | P53B | 1996 | No control |
| | (c)(12) | D.5 - Stack S44 | S44 | Phase I Ladle filling & iron transport system | P85 | 1996 | Baghouse (C44) |
| | (c)(13) | | | Phase I Melt Area Ladle Cleaning | P86 | 1996 | |
| | (c)(14) | D.2 - Stacks S01, S04, and S07 | S01 | Phase I Line 1 Ladle Cleaning | P86A | 1996 (2013) | Three (3) Baghouses (C01, C02, C03) |
| | (c)(15) | D.7 | No stack; exhausting inside the building | Phase I Line 2 Ladle Cleaning | n/a | 1996 | No control |
| | (c)(16) | | | Phase I Line 3 Ladle Cleaning | n/a | 1996 | No control |
| | (c)(17) | D.2 - Stacks S01, S04, and S07 | S01 | Phase I Line 4 Ladle Cleaning | P86B | 1996 (2013) | Three (3) Baghouses (C01, C02, C03) |
| Phase I Ancillary Operations | (c)(18) | D.2 - Stacks S01, S04, and S07 | S01 | Phase I Air makeup units | P52 | 1996 | No control |
| | (c)(19) | D.5 - Stack S44 | S44 | Phase I Iron bath desulfurization | P34 | 2011 | Baghouse (C44) |
| | (c)(20) | D.3 - Stacks S15 and S16 | S16 | Phase I Autogrinder | P87 | 2008 | Baghouse (C16) |
| | (c)(21) | D.7 | No stack; exhausting inside the building | Two (2) autogrinders | P87A | 2012 | Baghouse (C87A) |
| Phase II Metal Melting | (d) | D.1 - Stack S09 | S09 | Phase II cupola iron melting system | P33 | 1998 (2011) | Baghouse (C09B), Recuperative Incinerator (C11B), & Lime injection system (C12B) |

| Operations | Section A.2 | Permit D Section | Stack ID | Process | Process ID | Year of Construction (Modification) | Control Device(s) |
|---|---|---|---|---|---|---|---|
| Phase II Casting & Finishing | (e)(1)(A) | D.3 - Stacks S15 and S16 | S15 | Line 5 Pouring/Mold Cooling | P60 | 1998 (2011) | Baghouse (C15) |
| | (e)(1)(B) | | S15 or S16 | Line 5 Shakeout | P61 | 1998 (2011) | Baghouse (C15) or Baghouse (C16) |
| | (e)(1)(C) | | S15 | Line 5 Cast Cooling | P62 | 1998 (2011) | Baghouse (C15) |
| | (e)(1)(D) | | S16 | Line 5 Pick and Sort | P63 | 1998 (2011) | Baghouse (C16) |
| | (e)(1)(E) | | | Line 5 Cleaning/ Grinding | P64 | 1998 (2011) | |
| | (e)(2)(A) | | S15 | Line 6 Pouring/Mold Cooling | P65 | 1998 (2011) | Baghouse (C15) |
| | (e)(2)(B) | | S15 or S16 | Line 6 Shakeout | P66 | 1998 (2011) | Baghouse (C15) or Baghouse (C16) |
| | (e)(2)(C) | | S15 or S16 | Line 6 Cast Cooling | P67 | 1998 (2011) | Baghouse (C15) or Baghouse (C16) |
| | (e)(2)(D) | | S16 | Line 6 Pick and Sort | P68 | 1998 (2011) | Baghouse (C16) |
| | (e)(2)(E) | | | Line 6 Cleaning/ Grinding | P69 | 1998 (2011) | |
| | (e)(3)(A) | | S15 | Line 7 Pouring/Mold Cooling | P70 | 1998 (2011) | Baghouse (C15) |
| | (e)(3)(B) | | S15 or S16 | Line 7 Shakeout | P71 | 1998 (2011) | Baghouse (C15) or Baghouse (C16) |
| | (e)(3)(C) | | S15 or S16 | Line 7 Cast Cooling | P72 | 1998 (2011) | Baghouse (C15) or Baghouse (C16) |
| | (e)(3)(D) | | S16 | Line 7 Pick and Sort | P73 | 1998 (2011) | Baghouse (C16) |
| | (e)(3)(E) | | | Line 7 Cleaning/ Grinding | P74 | 1998 (2011) | |
| | (e)(4)(A) | | | Line 8 Pouring/Mold Cooling | P75 | 1998 (2011) | |
| | (e)(4)(B) | | | Line 8 Shakeout | P76 | 1998 (2011) | |
| | (e)(4)(C) | | | Line 8 Cast Cooling | P77 | 1998 (2011) | |
| | (e)(4)(D) | | | Line 8 Pick and Sort | P78 | 1998 (2011) | |
| | (e)(4)(E) | | | Line 8 Cleaning/ Grinding | P79 | 1998 (2011) | |
| Phase II Sand Handling | (f)(1) | | S15 or S16 | Phase II Return Sand Handling/Screening | P80 | 1998 (2011) | Baghouse (C15) or Baghouse (C16) |
| | (f)(2) | | S15 | Phase II Sand Mulling and Handling | P81 | 1998 (2011) | Baghouse (C15) |
| | (f)(3) | | | Phase II Sand Blending and Cooling | P82 | 1998 (2011) | |
| | (f)(4) | | | Phase II Spent Sand and Dust Handling | P83 | 1998 (2011) | |
| Phase II Furnace Material Handling | (f)(5) | | S15 or S16 | Phase II Metal Returns Handling System | P84 | 1998 (2011) | Baghouse (C15) or Baghouse (C16) |
| | (f)(6) | D.5 - Stack S44 | S44 | Phase II enclosed cupola charge make-up and handling unit | n/a | 1998 (2011) | Baghouse (C44) |
| | (f)(7) | D.7 | No stack; exhausting inside the building | Phase II raw material handling | n/a | 1998 (2011) | No control |
| Phase II Ladle Operations | (f)(8) | D.5 - Stack S44 | S44 | Phase II ladle filling and iron transport operation | n/a | 1998 (2011) | Baghouse (C44) |
| | (f)(9) | | | Phase II Melt Area Ladle Cleaning | n/a | 1998 (2011) | |
| | (f)(10) | D.7 | No stack; exhausting inside the building | Phase II Line 5 Ladle Cleaning | n/a | 1998 | No control |
| | (f)(11) | | | Phase II Line 6 Ladle Cleaning | n/a | 1998 | No control |
| | (f)(12) | | | Phase II Line 7 Ladle Cleaning | n/a | 1998 | No control |
| | (f)(13) | | | Phase II Line 8 Ladle Cleaning | n/a | 1998 | No control |

| Operations | Section A.2 | Permit D Section | Stack ID | Process | Process ID | Year of Construction (Modification) | Control Device(s) |
|---|---|---|---|---|---|---|---|
| Phase II Ductile Iron Treatment | (f)(14) | D.3 - Stacks S15 and S16 | S15 or No stack; exhausting inside the building | Phase II Ductile Iron Treatment Ladle Cleaning | n/a | 1998 (2011) | Baghouse (C15) or No control |
| | (f)(15) | | S15 | Phase II two (2) ductile iron treatment stations | P35 | 1998 (2011) | Baghouses C15 and C35 |
| Phase II Core Making | (f)(16) | D.4 - Core Making, Stacks S08, S11, S14, and S17 | S08 | Phase II phenolic-urethane core sand handling | P42 | 1998 (2008) | Baghouse (C08) |
| | (f)(17) | | S14 | Phase II phenolic-urethane core making | P43 | 1998 (2001, 2003) | Packed bed scrubber (C14) |
| | (f)(18) | | | Phase II phenolic-urethane core making | P44 | 1998 (2001, 2003) | |
| Phase II Ancillary Operations | (f)(19) | D.3 - Stacks S15 and S16 | S15 | Phase II air make-up units | P54 | 1998 (2011) | No control |
| | (f)(20) | | | Tumbleblast shotblast machine | P55 | 2001 | Baghouse (C15) |
| | (f)(21) | D.7 | No stack; exhausting inside the building | Phase II Pattern shop | P50 | 1998 (2011) | Baghouse |
| Core Room Expansion I | (g) | D.4 - Core Making, Stacks S08, S11, S14, and S17 | No stack; exhausting inside the building | Core Room Expansion I phenolic-urethane core sand handling | P46 | 2005 (2008) | Baghouse (C18) |
| | (h) | | S17 | Core Room Expansion I phenolic-urethane core making process | P47 | 2005 | Packed bed scrubber (C17) |
| | (i) | | S48 | Core Room Expansion I natural gas-fired core drying ovens and air make-up units | P48 | 2005 | No control |
| Core Room Expansion II | (j) | | S14 | Core Room Expansion II phenolic-urethane core machine | P45A | 2008 | Packed bed scrubber (C14) |
| | (k) | | S48A & S48B | Core Room Expansion II natural gas-fired core drying ovens | P48A & P48B | 2008 | No control |
| Sand Reclamation System for Phase I and Phase II processes | (l) | D.9 - stack S07 | S07 | sand reclamation | P27 | (2015) | baghouses (C27A and C27B) |
| Insignificant Activities | Section A.3 | D.8 | n/a | Insignificant Activities | n/a | n/a | No control |

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

APR 12 2013

REPLY TO THE ATTENTION OF:

Bryant Esch
Environmental Coordinator
Thyssenkrupp Waupaca, Inc. – Plant 1
406 North Division Street
Waupaca, Wisconsin 54926

Re: Request for Alternative NSPS Monitoring Method for Plant 1 Process P40 – Sand Cooler Waupaca Foundry, Inc.

Dear Mr. Esch:

The purpose of this letter is to respond to the February 19, 2013, letter the U.S. Environmental Protection Agency received from Mr. Steve Klafka, Wingra Engineering, S.C., requesting the use of a Bag Leak Detection (BLD) system to monitor particulate matter emissions from a new sand cooler, P40 – Sand Cooler (P40), being installed at Thyssenkrupp Waupaca's Plant 1 foundry (Plant 1) at 406 North Division Street in Waupaca, Wisconsin.

Mr. Klafka's letter states that Plant 1 is a major source, subject to, among other things, Clean Air Act Title V permitting requirements and the National Emissions Standards for Hazardous Air Pollutants for Iron and Steel Foundries at 40 C.F.R. Part 63 Subpart EEEEE (the MACT). P40 is also subject to the New Source Performance Standards for Calciners and Dryers in Mineral Industries at 40 C.F.R. Part 60 Subpart UUU (Subpart UUU). NSPS Subpart UUU requires owners and operators of affected facilities to monitor opacity by either installing a continuous opacity monitor (COM) or performing Method 9 visible emissions (VE) observations on each day of operation. The MACT requires that owners and operators of affected sources monitor PM emissions with a BLD system on each baghouse. Waupaca Foundry chooses to install and operate BLD systems at all the baghouses at the foundry, whether subject to the MACT or not, and follows the September 1997 EPA BLD guidance ("Office of Air Quality Planning and Standards (OAQPS) Fabric Filter Bag Leak Detection Guidance") in operating, maintaining and monitoring the BLD systems at the facility.

Mr. Klafka's February 19, 2013, letter specifically requests that EPA approve use of a BLD system to monitor PM emissions from P40 in lieu of either a COM or Method 9 VE readings as specified by Subpart UUU. EPA reviewed the information in the letter, Waupaca's construction permit application for P40, and the draft permit for P40 put out

for public comment by Wisconsin Department of Natural Resources. EPA notes that Subpart EEEEE is incorporated in entirety in the draft permit. EPA concludes that a BLD system is an effective alternative to a COM or Method 9 VE readings for monitoring PM emissions from P40. Therefore, EPA approves the BLD system as an alternative monitoring method for the P40 - Sand Cooler, providing Waupaca installs, operates, maintains, monitors, keeps records, and submits reports for the P40 BLD system as specified by the MACT provisions applicable to BLD systems. If you have any questions, please feel free to contact Bonnie Bush at 312.353.6684 or bush.bonnie@epa.gov.

Sincerely,

Sara Breneman

Sara J. Breneman
Chief
Air Enforcement and Compliance Assurance Branch

cc: Steve Klafka, P.E.
Environmental Engineer
Wingra Engineering, S.C.

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**Michael R. Pence**
*Governor*

**Thomas W. Easterly**
*Commissioner*

July 30, 2015

Mr. Bryant Esch
Waupaca Foundry, Inc. Plant 5
PO Box 249
Waupaca, WI 54981

Re: Public Notice
Waupaca Foundry, Inc. Plant 5
Permit Level: Title V - Significant Source Modification & Title V - Significant Permit Modification
Permit Number: 123 - 35760 - 00019 & 123 - 35799 - 00019

Dear Mr. Esch:

Enclosed is a copy of your draft Title V - Significant Source Modification & Title V - Significant Permit Modification, Technical Support Document, emission calculations, and the Public Notice which will be printed in your local newspaper.

The Office of Air Quality (OAQ) has prepared two versions of the Public Notice Document. The abbreviated version will be published in the newspaper, and the more detailed version will be made available on the IDEM's website and provided to interested parties. Both versions are included for your reference. The OAQ has requested that the Perry County News in Tell City, Indiana publish the abbreviated version of the public notice no later than August 3, 2015. You will not be responsible for collecting any comments, nor are you responsible for having the notice published in the newspaper.

OAQ has submitted the draft permit package to the Tell City Perry County Public Library, 2328 Tell Street in Tell City IN. As a reminder, you are obligated by 326 IAC 2-1.1-6(c) to place a copy of the complete permit application at this library no later than ten (10) days after submittal of the application or additional information to our department. We highly recommend that even if you have already placed these materials at the library, that you confirm with the library that these materials are available for review and request that the library keep the materials available for review during the entire permitting process.

Please review the enclosed documents carefully. This is your opportunity to comment on the draft permit and notify the OAQ of any corrections that are needed before the final decision. Questions or comments about the enclosed documents should be directed to Mehul Sura, Indiana Department of Environmental Management, Office of Air Quality, 100 N. Senate Avenue, Indianapolis, Indiana, 46204 or call (800) 451-6027, and ask for extension 3-6868 or dial (317) 233-6868.

Sincerely,
Len Pogost

Len Pogost
Permits Branch
Office of Air Quality

Enclosures
PN Applicant Cover lette-2014. Dot4/10/14

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*Commissioner*

**ATTENTION: PUBLIC NOTICES, LEGAL ADVERTISING**

July 30, 2015

Perry County News
Attn: Classifieds
537 Main Street
Tell City, Indiana 47586

Enclosed, please find one Indiana Department of Environmental Management Notice of Public Comment for Waupaca Foundry, Inc. Plant 5, Perry County, Indiana.

Since our agency must comply with requirements which call for a Notice of Public Comment, we request that you print this notice one time, no later than August 3, 2015.

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

**To ensure proper payment, please reference account # 100174737.**

We are required by the Auditor's Office to request that you place the Federal ID Number on all claims. If you have any conflicts, questions, or problems with the publishing of this notice or if you do not receive complete public notice information for this notice, please call Len Pogost at 800-451-6027 and ask for extension 3-2803 or dial 317-233-2803.

Sincerely,

Len Pogost

Len Pogost
Permit Branch
Office of Air Quality

Permit Level: Title V - Significant Source Modification & Title V - Significant Permit Modification
Permit Number: 123 - 35760 - 00019 & 123 - 35799 - 00019

Enclosure
PN Newspaper.dot 6/13/2013

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**Thomas W. Easterly**
*Commissioner*

July 30, 2015

To: Tell City Perry County Public Library 2328 Tell Street Tell City IN

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

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

**Applicant Name: Waupaca Foundry, Inc. Plant 5**
**Permit Number: 123 - 35760 - 00019 & 123 - 35799 - 00019**

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

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

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

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

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

Enclosures
PN Library.dot 6/13/2013

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## Notice of Public Comment

**July 30, 2015**
**Waupaca Foundry, Inc. Plant 5**
**123 - 35760 - 00019 & 123 - 35799 - 00019**

Dear Concerned Citizen(s):

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

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

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

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

Enclosure
PN AAA Cover.dot 6/13/13

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*Governor*

**Thomas W. Easterly**
*Commissioner*

# AFFECTED STATE NOTIFICATION OF PUBLIC COMMENT PERIOD
# DRAFT INDIANA AIR PERMIT

July 30, 2015

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

**Permit Number:** **123 - 35760 - 00019 & 123 - 35799 - 00019**
**Applicant Name:** **Waupaca Foundry, Inc. Plant 5**
**Location:** **Tell City, Perry County, Indiana**

The public notice, draft permit and technical support documents can be accessed via the **IDEM Air Permits Online** site at:
http://www.in.gov/ai/appfiles/idem-caats/

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

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

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

# Mail Code 61-53

| | | | |
|---|---|---|---|
| IDEM Staff | LPOGOST 7/30/2015<br>Waupaca Foundry Inc 123 - 35760 - 00019 & 123 - 35799 - 00019 draft/ | | AFFIX STAMP HERE IF USED AS CERTIFICATE OF MAILING |
| Name and address of Sender |  | Indiana Department of Environmental Management<br>Office of Air Quality – Permits Branch<br>100 N. Senate<br>Indianapolis, IN 46204 | Type of Mail:<br>**CERTIFICATE OF MAILING ONLY** |

| Line | Article Number | Name, Address, Street and Post Office Address | Postage | Handing Charges | Act. Value (If Registered) | Insured Value | Due Send if COD | R.R. Fee | S.D. Fee | S.H. Fee | Rest. Del. Fee<br>Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | Bryant Esch Waupaca Foundry Inc PO Box 249 Waupaca WI 54981 (Source CAATS) | | | | | | | | | |
| 2 | | Bruce E Tesch Plant Manager Waupaca Foundry Inc 9856 State Highway 66 Tell City IN 47589 *(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 | | Tell City Perry County Public Library 2328 Tell Street Tell City IN 47586-1717 *(Library)* | | | | | | | | | |
| 10 | | Mr. Mark Wilson Evansville Courier & Press P.O. Box 268 Evansville IN 47702-0268 *(Affected Party)* | | | | | | | | | |
| 11 | | John Blair 800 Adams Ave Evansville IN 47713 *(Affected Party)* | | | | | | | | | |
| 12 | | Steven Klafka Wingra Engineering S.C. 303 South Paterson Street Madison WI 53703 *(Consultant)* | | | | | | | | | |
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