**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT**
*We Protect Hoosiers and Our Environment.*

*Mitchell E. Daniels Jr.*
**Governor**

*Thomas W. Easterly*
**Commissioner**

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

TO: Interested Parties / Applicant

DATE: August 20, 2012

RE: Dalton Corporation Warsaw Manufacturing Facility / 085-30768-00003

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

# Notice of Decision: Approval – Effective Immediately

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

If you wish to challenge this decision, IC 4-21.5-3-7 and IC 13-15-6-1(b) or IC 13-15-6-1(a) require that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office of Environmental Adjudication, 100 North Senate Avenue, Government Center North, Suite N 501E, Indianapolis, IN 46204.

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

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

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

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

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



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

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

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

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

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

Enclosures
FNTVOP.dot12/3/07

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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# Part 70 Operating Permit Renewal
# OFFICE OF AIR QUALITY

## Dalton Corporation, Warsaw Manufacturing Facility
## 1900 E. Jefferson Street
## Warsaw, Indiana 46580

(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.: T085-30768-00003 | |
|---|---|
| Issued by:<br>Tripurari Sinha<br>Tripurari P. Sinha, Ph. D., Section Chief<br>Permits Branch<br>Office of Air Quality | Issuance Date: August 20, 2012<br>Expiration Date: August 20, 2017 |

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**E.1 NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS (NESHAP)**

**REQUIREMENTS [326 IAC 2-7-5(1)]**

E.1.1 General Provisions Relating to National Emission Standards for Hazardous Air Pollutants under 40 CFR Part 63 [326 IAC 20-1] [40 CFR Part 63, Subpart A]
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## SECTION A SOURCE SUMMARY

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

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

The Permittee owns and operates a stationary gray iron foundry.

| | |
|---|---|
| Source Address: | 1900 E. Jefferson Street, Warsaw, Indiana 46580 |
| General Source Phone Number: | (574) 267-8111 |
| SIC Code: | 3321 |
| County Location: | Kosciusko |
| Source Location Status: | Attainment for all criteria pollutants |
| Source Status: | Part 70 Operating Permit Program<br>Major Source, under PSD Rules<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(15)]

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

**SECTION D.1**

(1) **Cupola Charge Handling**
Cupola Charge Handling operations, constructed prior to 1977, with a nominal charging capacity of 53.45 tons per hour of solid metal, coke, and limestone.

Emissions from the Cupola Charge Handling operations are uncontrolled.

**SECTION D.2**

(2) **Cupola Melt Furnace**
One (1) Cupola Melt Furnace, constructed prior to 1977, with a nominal capacity of 48.5 tons per hour of metal melted, and a maximum heat input capacity of 69.95 million British thermal units (MMBtu) per hour.

Particulate emissions are captured and controlled by Wet Scrubber A and Wet Electrostatic Precipitator WESP (for NESHAP EEEEE compliance). Carbon monoxide emissions are captured and controlled by three (3) natural gas fired afterburners, each with a maximum heat input capacity of 5.0 million British thermal units (MMBtu) per hour. Emissions exhaust through Stack A.

Fugitive particulate emissions from the Cupola Charge Door are captured and controlled by Baghouse #14, exhausting through Stack AD.

(3) **Hot Blast Preheater**
One natural gas fired Hot Blast Preheater, constructed in 1981, with a maximum heat input capacity of 22 million British thermal units (MMBtu) per hour for preheating the blast air for the Cupola Melt Furnace.

**SECTION D.3**

(4) **Herman 2 Mold Line**

(a) One (1) Herman 2 Pouring Station, constructed prior to 1977, with a nominal throughput of 37 tons of iron per hour and 166 tons of mold and core sand per hour, with emissions captured, but uncontrolled, and exhausting to the atmosphere through Vent V-19.

(b) One (1) Herman 2 Castings Cooling process, constructed prior to 1977, with a nominal throughput of 37 tons of iron per hour and 166 tons of mold and core sand per hour, with emissions captured, but uncontrolled, and exhausting to the atmosphere through Vents V-8 and V-9.

(c) One (1) Herman 2 Shakeout process, constructed prior to 1977, with a nominal throughput of 37 tons of iron per hour and 166 tons of mold and core sand per hour, with particulate emissions captured and controlled by Wet Collector #3, exhausting through Stack B.

(d) One (1) Herman 2 Sand Handling process, constructed prior to 1977 and modified in 2009, with a nominal throughput of 166 tons of mold and core sand per hour.

The Herman 2 Sand Handling process includes

(1) sand screening, sand cooling, water addition, sand mulling, and the ancillary equipment associated with each, all constructed prior to 1977, with particulate emissions captured and controlled by Baghouse #1, exhausting through Stack F, and Baghouse #13, exhausting through Stack Y.

and

(2) One (1) waste sand handling system supporting the Herman 2 Mold Line, consisting of two (2) Klein transports, constructed in 2009, identified as:

(A) PF504-5, with a total nominal capacity of 12.0 tons per hour, with particulate emissions from sending operations captured and controlled by Wet Collector #3, exhausting through Stack B; and

(B) F902-5, with a total nominal capacity of 9.0 tons per hour, with particulate emissions from sending operations captured and controlled by Baghouse #13, exhausting through Stack Y.

**SECTION D.4**

(5) **Herman 3 Mold Line**

The volatile organic compound (VOC) emissions from the Herman 3 Mold line are reduced by one (1) Sonoperoxone® system (or an equivalent advanced oxidation system), sand system optimization, use of low VOC core resin binder materials, and automatic mold vent-off gas ignition.

(a) One (1) Herman 3 Pouring Station, constructed in 1991, with a nominal throughput of 28 tons of iron per hour and 165 tons of mold and core sand per hour, with emissions captured, but uncontrolled, and exhausting to the atmosphere through Vent V-10.

(b) One (1) Herman 3 Castings Cooling process, constructed in 1991, and modified in 2004, with a nominal throughput of 28 tons of iron per hour, and 165 tons of mold and core sand per hour, with emissions captured, but uncontrolled and exhausting to the

atmosphere through Vent V-12.

(c) One (1) Herman 3 Shakeout process, constructed in 1991, with a nominal throughput of 28 tons of iron per hour, and 165 tons of mold and core sand per hour, with particulate emissions captured and controlled by Wet Collector #1, exhausting to Stack D, Wet Collector #4, exhausting through Stack E, and Baghouse #11, exhausting through Stack W.

(d) One (1) Herman 3 Sand Handling process, constructed in 1991 and modified in 2009, with a nominal throughput of 165 tons of mold and core sand per hour.

The Herman 3 Sand Handling process includes:

(1) sand screening, sand cooling, water addition, sand mulling, and the ancillary equipment associated with each, all constructed in 1991, with particulate emissions captured and controlled by Wet Collector #1, exhausting through Stack D, Wet Collector #2, exhausting through Stack C, Wet Collector #4, exhausting through Stack E, and Baghouse #11, exhausting through Stack W.

and

(2) one (1) Return Sand Conveyor, constructed in 2009, identified as RSC1, with particulate emissions captured and controlled by Wet Collector #1, exhausting through Stack D.

**SECTION D.5**

(6) **Inclined Shakeout and Sort System (servicing Herman 2 and Herman 3)**

(a) One (1) Inclined Shakeout and Sort System, constructed prior to 1977, with a nominal throughput of 48.5 tons of iron per hour, with particulate emissions captured and controlled by Baghouse #2, exhausting through Stack G.

(b) One (1) vibratory shaker, permitted in 2011, identified as VB1, with a nominal capacity of 48.5 tons per hour, with particulate emissions captured and controlled by Baghouse #2, exhausting through Stack G.

(7) **Waste Sand Handling, Screening and Transport System (servicing Herman 2 and Herman 3)**

One (1) Waste Sand Handling, Screening and Transport System, constructed prior to 1977, with a nominal throughput of 20 tons of waste sand per hour.

The Waste Sand Handling, Screening and Transport System consists of a rotary screen process, a magnetic separator, a silo, an elevated bin hopper, and a transport (Dependable) system.

Particulate emissions from the Waste Sand Handling, Screening and Transport system are captured and controlled by Baghouse #9, exhausting through Stack R.

**SECTION D.6**

(8) **Shot Blast Machines**

(a) Five (5) Shot Blast Machines:

(1) Three (3) Shot Blast Machines, identified as SB-1, SB-2, and SB-4, each constructed prior to 1977, each with a nominal capacity of 5.0 tons of iron castings per hour.

(2) One (1) Shot Blast Machine, identified as SB-3, constructed in 1981, with a nominal throughput of 5.0 tons of iron castings per hour.

(3) One (1) Shot Blast Machine, permitted in 2006 and modified in 2011 to add a manual blow-off chamber, identified as SB-10, with a nominal capacity of 5 tons of iron castings per hour.

Particulate emissions from these Shot Blast Machines are captured and controlled by Baghouse #3, exhausting through Stack H.

Particulate emissions from the manual blow-off chamber for SB-10 are captured and controlled by a fabric filter control device exhausted internally.

(b) Three (3) Shot Blast Machines:

(1) One (1) Shot Blast Machine, identified as SB-5, constructed prior to 1977, with a nominal throughput of 5.0 tons of iron castings per hour.

(2) One (1) Shot Blast Machine, identified as SB-6, constructed in 1981, with a nominal throughput of 5.0 tons of iron castings per hour.

(3) One (1) Shot Blast Machine, identified as SB-8, constructed in 1988, with a nominal throughput of 8.0 tons of iron castings per hour.

(4) One (1) hose blast operation for Shot Blast #8, permitted in 2011, identified as HB1, with a nominal capacity of 8.0 tons of iron castings per hour.

Particulate emissions from these Shot Blast Machines and the hose blast operation are captured and controlled by Baghouse #16, exhausting through Stack AG.

(c) One (1) Shot Blast Machine, identified as SB-7, constructed in 1978 with a nominal throughput of 6.0 tons of iron castings per hour.

Particulate emissions from this Shot Blast Machine are captured and controlled by Baghouse #6, exhausting through Stack K.

(d) One (1) Shot Blast Machine, identified as SB-9, constructed in 1995 with a nominal throughput of 12.5 tons of iron castings per hour.

Particulate emissions from this Shot Blast Machine are captured and controlled by Baghouse #12, exhausting through Stack X.

(9) **Grinders**

(a) Fourteen (14) Grinders:

(1) Twelve (12) Grinders, identified as GR-1 through GR-4, GR-9, GR-10, GR-29, and GR-30, constructed prior to 1977, each with a nominal throughput of 4.0 tons of iron castings per hour.

(2) Two (2) robotic grinders, constructed in 2009, identified as:

(A) ABB, with a total nominal capacity of 1.0 tons of iron castings per hour, and

(B) FANUC, with a total nominal capacity of 1.5 tons of iron castings per hour.

Particulate emissions from these Grinders are captured and controlled by Baghouse #15, exhausting through Stack AE.

(b) Six (6) Grinders, identified as GR-11 through GR-14, GR-16, and GR-17, constructed prior to 1977, each with a nominal throughput of 4.0 tons of iron castings per hour, with particulate emissions from these Grinders are captured and controlled by Baghouse #16, exhausting through Stack AG.

(c) Eight (8) Grinders, identified as GR-19, GR-20, GR-23, GR-25, GR-26, and GR-34 through GR-36, constructed prior to 1977, each with a nominal throughput of 4.0 tons of iron castings per hour.

Particulate emissions from these Grinders are captured and controlled by Baghouse #6, exhausting through Stack K.

(d) Four (4) Grinders, identified as GR-31 through GR-33; and GR-37, constructed prior to 1977, each with a nominal throughput of 4.0 tons of iron castings per hour.

Particulate emissions from these Grinders are captured and controlled by Baghouse #12, exhausting through Stack X.

**SECTION D.7**

(11) **Phenolic Urethane Core Making Line #9 (also referred to as Core Making Line #9)**
One (1) Phenolic Urethane Core Making Line #9, constructed in 2002 as a hotbox process and modified in 2008 to be a phenolic process, with a nominal sand throughput of 18.0 tons of sand per hour. The Phenolic Urethane Core Making line #9 consists of the following emission units:

(a) One (1) Core Sand Handling Process, with a nominal sand throughput of 18.0 tons of sand per hour:

(1) One (1) Northeast (NE) Sand Silo, constructed prior to 1977, with an integral bin vent to control particulate emissions when loading.

(2) One (1) enclosed Pneumatic Sand Transporter #1, constructed in 1996, for transferring sand from the Northeast (NE) Sand Silo to the Sand Hopper #9.

(3) One (1) Sand Hopper #9, constructed in 2002, with particulate emissions captured and controlled by Baghouse Z, exhausting through Stack Z.

(4) One (1) electric Sand Heater #9, constructed in 2002, with particulate emissions captured and controlled by Baghouse Z, exhausting through Stack Z.

(b) One (1) Sand Mixer #9, constructed in 2002 and modified in 2008, with a nominal throughput of 18 tons of sand per hour.

Emissions from the Sand Mixer #9 are uncontrolled.

(c) Three (3) Core Machines, constructed in 2002 and modified in 2008, three (3) Core Wash Dip Tanks and one (1) natural gas fired Core Oven:

(1) One (1) Phenolic Urethane Core Machine #31 and its corresponding Core Wash Dip Tank #31and natural gas fired Core Oven #10, each with a nominal throughput of 4.5 tons of sand per hour.

Emissions from the Phenolic Urethane Core Machine #31 are uncontrolled.

Emissions from the Core Wash Dip Tank #31 are uncontrolled.

(2) One (1) Phenolic Urethane Core Machine #32, and its corresponding Core Wash Dip Tank #32 and natural gas fired Core Oven #10, each with a nominal throughput of 4.5 tons of sand per hour.

Emissions from the Phenolic Urethane Core Machine #32 are uncontrolled.

Emissions from the Core Wash Dip Tank #32 are uncontrolled.

(3) One (1) Phenolic Urethane Core Machine #33, and its corresponding Core Wash Dip Tank #33 and natural gas fired Core Oven #10, each with a nominal throughput of 4.5 tons of sand per hour.

Emissions from the Phenolic Urethane Core Machine #33 are uncontrolled.

Emissions from the Core Wash Dip Tank #33 are uncontrolled.

The one (1) natural gas fired Core Oven #10 has a maximum heat input capacity of 6.0 million British thermal units (MMBtu) per hour.

(d) One (1) electric Phenolic Urethane Core Oven #5.

Emissions from the Phenolic Urethane Core Oven #5 are uncontrolled.

(e) One (1) natural gas fired Core Oven #11, constructed in 2011, has a maximum heat input capacity of 3.0 million British thermal units (MMBtu) per hour.

Emissions from the Phenolic Urethane Core Oven #11 are uncontrolled.

**SECTION D.8**

(12) **Phenolic Urethane Core Making Line #1**
One (1) Phenolic Urethane Core Making Line #1, with a nominal sand throughput of 7.0 tons of sand per hour. The Phenolic Urethane Core Making Line #1 consists of the following emission units:

(a) One (1) Core Sand Handling Process, with a nominal sand throughput of 7.0 tons of sand per hour:

(1) One (1) South (S) Sand Silo, constructed prior to 1977, with an integral bin vent to control particulate emissions when loading.

(2) One (1) enclosed Pneumatic Sand Transporter #2, constructed in 1996, for transferring sand from the South (S) Sand Silo to the Phenolic Urethane Core Sand Hopper #1.

(3) One (1) Phenolic Urethane Core Sand Hopper #1, constructed in 1989, with particulate emissions controlled by Baghouse Q, exhausting through Stack Q.

(4) One (1) electric Phenolic Urethane Sand Heater #1, constructed in 1989, for heating sand, with particulate emissions controlled by Baghouse Q, exhausting through Stack Q.

(b) One (1) Phenolic Urethane Core Sand Mixer #1, constructed in 1989, with a nominal throughput of 7.0 tons of sand per hour and 0.185 pounds of VOC (from resin) per ton of sand.

Emissions from the Phenolic Urethane Core Sand Mixer #1 are uncontrolled.

(c) Five (5) Core Machines, five (5) Core Wash Dip Tanks, and three (3) natural gas fired Core Ovens

(1) One (1) Phenolic Urethane Core Machine #15, constructed in 1986 and modified to incorporate a larger blow plate in 2011, and its corresponding Core Wash Dip Tank #15 and natural gas fired Core Oven #1, constructed in 1986, each with a nominal throughput of 7.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #15 are uncontrolled.

(2) One (1) Phenolic Urethane Core Machine #16, constructed in 1986 and modified to incorporate a larger blow plate in 2011, and its corresponding Core Wash Dip Tank #16 and natural gas fired Core Oven #1, each with a nominal throughput of 7.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #16 are uncontrolled.

(3) One (1) Phenolic Urethane Core Machine #17, constructed in 1988, and its corresponding Core Wash Dip Tank #17 and natural gas fired Core Oven #17, each with a nominal throughput of 7.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #17 are uncontrolled.

(4) One (1) Phenolic Urethane Core Machine #18, constructed in 1989, and its corresponding Core Wash Dip Tank #18 and natural gas fired Core Oven #2, each with a nominal throughput of 7.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #18 are uncontrolled.

(5) One (1) Phenolic Urethane Core Machine #19, constructed in 1989, and its corresponding Core Wash Dip Tank #19 and natural gas fired Core Oven #2, each with a nominal throughput of 7.0 tons sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #19 are uncontrolled.

Each natural gas fired Core Oven on Phenolic Urethane Core Making Line #1 has a maximum heat input capacity of 2.0 million British thermal units (Btu) per hour.

The catalyst used is Dimethylisopropylamine (DMIPA) or an equivalent, non-HAP containing catalyst.

The VOC emissions from the catalyst captured at the core box of the Phenolic Urethane Core Machine #15, Phenolic Urethane Core Machine #16, Phenolic Urethane Core Machine #17, Phenolic Urethane Core Machine #18, and

Phenolic Urethane Core Machine #19 are controlled by Acid Scrubber AF, exhausting through Stack AF.

(13) **Phenolic Urethane Core Making Line #2**
One (1) Phenolic Urethane Core Making Line #2, with a nominal sand throughput of 3.0 tons of sand per hour. The Phenolic Urethane Core Making Line #2 consists of the following emission units:

(a) One (1) Core Sand Handling Process, with a nominal sand throughput of 3.0 tons of sand per hour:

(1) One (1) South (S) Sand Silo, constructed prior to 1977, with an integral bin vent to control particulate emissions when loading.

(2) One (1) enclosed Pneumatic Sand Transporter #2, constructed in 1996, for transferring sand from the South (S) Sand Silo to the Phenolic Urethane Core Sand Hopper #1.

(3) One (1) Phenolic Urethane Core Sand Hopper #1, constructed in 1989, with particulate emissions controlled by Baghouse Q, exhausting through Stack Q.

(b) One (1) Phenolic Urethane Core Sand Mixer #2, constructed in 1987, with a nominal throughput of 3.0 tons of sand per hour and 0.185 pounds of VOC (from resin) per ton of sand.

Emissions from the Phenolic Urethane Core Sand Mixer #2 are uncontrolled.

(c) Five (5) Core Machines, five (5) Core Wash Dip Tanks, and one (1) portable electric Core Oven

(1) One (1) Phenolic Urethane Core Machine #8, constructed in 1968, and its corresponding Core Wash Dip Tank #8 and portable electric Core Oven #1, each with a nominal throughput of 3.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #8 are uncontrolled.

(2) One (1) Phenolic Urethane Core Machine #9, constructed in 1968, and its corresponding Core Wash Dip Tank #9 and portable electric Core Oven #1, each with a nominal throughput of 3.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #9 are uncontrolled.

(3) One (1) Phenolic Urethane Core Machine #12, constructed in 1978, and its corresponding Core Wash Dip Tank #12 and portable electric Core Oven #1, each with a nominal throughput of 3.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #12 are uncontrolled.

(4) One (1) Phenolic Urethane Core Machine #13, constructed in 1979, and its corresponding Core Wash Dip Tank #13 and portable electric Core Oven #1, each with a nominal throughput of 3.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #13 are uncontrolled.

(5) One (1) Phenolic Urethane Core Machine #14, constructed in 1992, and its corresponding Core Wash Dip Tank #14 and portable electric Core Oven #1, each with a nominal throughput of 3.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #14 are uncontrolled.

The catalyst used is Dimethylisopropylamine (DMIPA) or an equivalent, non-HAP containing catalyst.

The VOC emissions from the catalyst captured at the core box of the Phenolic Urethane Core Machine #8, Phenolic Urethane Core Machine #9, Phenolic Urethane Core Machine #12, Phenolic Urethane Core Machine #13, and Phenolic Urethane Core Machine #14 are controlled by Acid Scrubber AF, exhausting through Stack AF.

(14) **Phenolic Urethane Core Making Line #3**
One (1) Phenolic Urethane Core Making Line #3, with a nominal sand throughput of 7.0 tons of sand per hour. The Phenolic Urethane Core Making Line #3 consists of the following emission units:

(a) One (1) Core Sand Handling Process, with a nominal sand throughput of 7.0 tons of sand per hour:

(1) One (1) South (S) Sand Silo, constructed prior to 1977, with an integral bin vent to control particulate emissions when loading.

(2) One (1) enclosed Pneumatic Sand Transporter #2, constructed in 1996, for transferring sand from the South (S) Sand Silo to the Phenolic Urethane Core Sand Hopper #3.

(3) One (1) Phenolic Urethane Core Sand Hopper #3, constructed in 1980:

The particulate emissions from the Phenolic Urethane Core Sand Hopper #3 are captured and controlled by Baghouse U, exhausting through Stack U.

(4) One (1) electric Phenolic Urethane Sand Heater #3, constructed in 1980.

The particulate emissions from the Phenolic Urethane Sand Heater #3 are captured and controlled by Baghouse U, exhausting through Stack U.

(b) One (1) Phenolic Urethane Core Sand Mixer #3, constructed in 1980, with a nominal throughput of 7.0 tons of sand per hour and 0.185 pounds of VOC (from resin) per ton of sand.

Emissions from the Phenolic Urethane Core Sand Mixer #3 are uncontrolled.

(c) Three (3) Core Machines, three (3) Core Wash Dip Tanks, and two (2) natural gas fired Core Ovens

(1) One (1) Phenolic Urethane Core Machine #2, constructed in 1982, and its corresponding Core Wash Dip Tank #2 and natural gas fired Core Oven #3, each with a nominal throughput of 7.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #2 are uncontrolled.

(2) One (1) Phenolic Urethane Core Machine #4, constructed in 1981, and its corresponding Core Wash Dip Tank #4 and natural gas fired Core Oven #4, each with a nominal throughput of 7.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #4 are uncontrolled.

(3) One (1) Phenolic Urethane Core Machine #5, constructed in 1968, and its corresponding Core Wash Dip Tank #5 and natural gas fired Core Oven #4, each with a nominal throughput of 7.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #5 are uncontrolled.

Each natural gas fired Core Oven on Phenolic Urethane Core Making Line #3 has a maximum heat input capacity of 2.0 million British thermal units (Btu) per hour.

The catalyst used is Dimethylisopropylamine (DMIPA) or an equivalent, non-HAP containing catalyst.

The VOC emissions from the catalyst captured at the core box of the Phenolic Urethane Core Machine #2, Phenolic Urethane Core Machine #4, and Phenolic Urethane Core Machine #5 are controlled by Acid Scrubber AF, exhausting through Stack AF.

(15) **Phenolic Urethane Core Making Line #4**
One (1) Phenolic Urethane Core Making Line #4, with a nominal sand throughput of 7.0 tons of sand per hour. The Phenolic Urethane Core Making Line #4 consists of the following emission units:

(a) One (1) Core Sand Handling Process, with a nominal sand throughput of 7.0 tons of sand per hour:

(1) One (1) South (S) Sand Silo, constructed prior to 1977, with an integral bin vent to control particulate emissions when loading.

(2) One (1) enclosed Pneumatic Sand Transporter #2, constructed in 1996, for transferring sand from the South (S) Sand Silo to the Phenolic Urethane Core Sand Hopper #4.

(3) One (1) Phenolic Urethane Core Sand Hopper #4, constructed in 1986.

The particulate emissions from the Phenolic Urethane Core Sand Hopper #4 are captured and controlled by Baghouse U, exhausting through Stack U.

(4) One (1) electric Phenolic Urethane Sand Heater #4, constructed in 1986:

The particulate emissions from the Phenolic Urethane Sand Heater #4 are captured and controlled by Baghouse U, exhausting through Stack U.

(b) One (1) Phenolic Urethane Core Sand Mixer #4, constructed in 1986, with a nominal throughput of 7.0 tons of sand per hour and 0.185 pounds of VOC (from resin) per ton of sand.

Emissions from the Phenolic Urethane Core Sand Mixer #4 are uncontrolled.

(c) Two (2) Core Machines, one (1) Core Wash Dip Tank, and two (2) natural gas fired Core Ovens

(1) One (1) Phenolic Urethane Core Machine #7, constructed in 1986 and modified to incorporate a larger blow plate in 2011, with a nominal throughput of 7.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

(2) One (1) Phenolic Urethane Core Machine #25, constructed in 1993, that contains two (2) core boxes that cannot be operated simultaneously due to having only one blow head for blowing sand into the box, and its corresponding Core Wash Dip Tank #25, natural gas fired Core Oven #8, and natural gas fired Core Oven #25, each with a nominal throughput of 7.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #25 are uncontrolled.

(A) The natural gas fired Core Oven #8 on Phenolic Urethane Core Making Line #5 has a maximum heat input capacity of 2.4 million British thermal units (Btu) per hour.

(B) The natural gas fired Core Oven #25 has a maximum heat input capacity of at 800,000 British thermal units (Btu) per hour.

The catalyst used is Dimethylisopropylamine (DMIPA) or an equivalent, non-HAP containing catalyst.

The VOC emissions from the catalyst captured at the core box of the Phenolic Urethane Core Machine #7 and Phenolic Urethane Core Machine #25 are controlled by Acid Scrubber AF, exhausting through Stack AF.

(16) **Phenolic Urethane Core Making Line #5**
One (1) Phenolic Urethane Core Making Line #5, with a nominal sand throughput of 5.0 tons of sand per hour. The Phenolic Urethane Core Making Line #5 consists of the following emission units:

(a) One (1) Core Sand Handling Process, with a nominal sand throughput of 5.0 tons of sand per hour:

(1) One (1) South (S) Sand Silo, constructed prior to 1977, with an integral bin vent to control particulate emissions when loading.

(2) One (1) enclosed Pneumatic Sand Transporter #2, constructed in 1996, for transferring sand from the South (S) Sand Silo to the Phenolic Urethane Core Sand Hopper #3.

(3) One (1) Phenolic Urethane Core Sand Hopper #3, constructed in 1980:

The particulate emissions from the Phenolic Urethane Core Sand Hopper #3 are captured and controlled by Baghouse U, exhausting through Stack U.

(4) One (1) natural gas fired Phenolic Urethane Sand Heater #5, constructed in 1992, with a maximum heat input capacity of 192,000 British thermal units (Btu) per hour.

The particulate emissions from the Phenolic Urethane Sand Heater #5 are captured and controlled by Baghouse Z, exhausting through Stack Z.

(b) One (1) Phenolic Urethane Core Sand Mixer #5, constructed in 1992, with a nominal throughput of 5.0 tons of core sand per hour and 0.185 pounds of VOC (from resin) per ton of sand.

Emissions from the Phenolic Urethane Core Sand Mixer #5 are uncontrolled.

(c) Three (3) Core Machines, three (3) Core Wash Dip Tanks, and one (1) natural gas fired Core Oven

(1) One (1) Phenolic Urethane Core Machine #21, constructed in 1992, and its corresponding Core Wash Dip Tank #21 and natural gas fired Core Oven #9, each with a nominal throughput of 5.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #21 are uncontrolled.

(2) One (1) Phenolic Urethane Core Machine #22, constructed in 1992, and its corresponding Core Wash Dip Tank #22 and natural gas fired Core Oven #9, each with a nominal throughput of 5.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #22 are uncontrolled.

(3) One (1) Phenolic Urethane Core Machine #28, constructed in 1998, and its corresponding Core Wash Dip Tank #28 and natural gas fired Core Oven #9, each with a nominal throughput of 5.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #28 are uncontrolled.

The natural gas fired Core Oven #9 on Phenolic Urethane Core Making Line #5 has a maximum heat input capacity of 2.4 million British thermal units (Btu) per hour.

The catalyst used is Dimethylisopropylamine (DMIPA) or an equivalent, non-HAP containing catalyst.

The VOC emissions from the catalyst captured at the core box of the Phenolic Urethane Core Machine #21, Phenolic Urethane Core Machine #22, and Phenolic Urethane Core Machine #28 are controlled by Acid Scrubber AF, exhausting through Stack AF.

(17) **Phenolic Urethane Core Making Line #8**
One (1) Phenolic Urethane Core Making Line #8, with a nominal sand throughput of 5.0 tons of sand per hour. The Phenolic Urethane Core Making Line #8 consists of the following emission units:

(a) One (1) Core Sand Handling Process, with a nominal sand throughput of 5.0 tons of sand per hour:

(1) One (1) Northeast (NE) Sand Silo, constructed prior to 1977, with an integral bin vent to control particulate emissions when loading.

(2) One (1) enclosed Pneumatic Sand Transporter #1, constructed in 1996, for

transferring sand from the Northeast (NE) Sand Silo to the Phenolic Urethane Core Sand Hopper #8.

(3) One (1) Phenolic Urethane Core Sand Hopper #8, constructed in 1997:

The particulate emissions from the Phenolic Urethane Core Sand Hopper #8 are captured and controlled by Baghouse Z, exhausting through Stack Z.

(4) One (1) natural gas fired Phenolic Urethane Sand Heater #8, constructed in 1997, with a maximum heat input capacity of 192,000 British thermal units (Btu) per hour.

The particulate emissions from the Phenolic Urethane Sand Heater #8 are captured and controlled by Baghouse Z, exhausts through Stack Z.

(b) One (1) Phenolic Urethane Core Sand Mixer #8, constructed in 1997, with a nominal throughput of 5.0 tons of core sand per hour and 0.185 pounds of VOC (from resin) per ton of sand.

Emissions from the Phenolic Urethane Core Sand Mixer #8 are uncontrolled.

(c) Two (2) Core Machines, two (2) Core Wash Dip Tank, and one (1) natural gas fired Core Oven

(1) One (1) Phenolic Urethane Core Machine #1, constructed in 1982, and its corresponding Core Wash Dip Tank #1 and natural gas fired Core Oven #27, each with a nominal throughput of 7.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #1 are uncontrolled.

(2) One (1) Phenolic Urethane Core Machine #27, constructed in 1996, and its corresponding Core Wash Dip Tank #27 and natural gas fired Core Oven #27, each with a nominal throughput of 5.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #27 are uncontrolled.

The natural gas fired Core Oven #27 on Phenolic Urethane Core Making Line #8 has a maximum heat input capacity of 1.6 million British thermal units (Btu) per hour.

The catalyst used is Dimethylisopropylamine (DMIPA) or an equivalent, non-HAP containing catalyst.

The VOC emissions from the catalyst captured at the core box of Phenolic Urethane Core Machine #1 and Phenolic Urethane Core Machine #27 are controlled by Acid Scrubber AF, exhausting through Stack AF.

**SECTION D.9**

(18) **Shell Core Making Process**
One (1) Shell Core Sand Making Process, with a nominal sand throughput of 0.8 tons of sand per hour. The Shell Core Sand Making Process consists of the following emission units:

(a) One (1) Shell Core Sand Handling Process, with a nominal sand throughput of 0.8 tons of sand per hour:

(1) North (N) Shell Sand Silo and South (S) Shell Sand Silo, each constructed prior to 1977, with a capacity to provide coated sand to the two (2) Shell Core Sand Hoppers.

Emissions from the North (N) Shell Sand Silo and South (S) Shell Sand Silo are uncontrolled.

(2) Two (2) Shell Core Sand Hoppers, identified as Shell Core Sand Hopper #1 and Shell Core Sand Hopper #2, constructed prior to 1977, with a capacity to provide shell core sand to all Shell Core Machines.

Emissions from the Shell Core Sand Hoppers are uncontrolled.

(b) Three (3) Core Machines, and Three (3) Core Wash Dip Tanks

(1) One (1) Shell Core Machine #6, constructed prior to 1977, and its corresponding Shell Core Wash Dip Tank #6, with a nominal throughput of 0.2 tons of sand per hour.

Emissions from the Shell Core Machine #6 are uncontrolled.

Emissions from the Shell Core Wash Dip Tank #6 are uncontrolled.

(2) One (1) Shell Core Machine #7, constructed prior to 1977, and its corresponding Shell Core Wash Dip Tank #7, with a nominal throughput of 0.3 tons of sand per hour.

Emissions from the Shell Core Machine #7 are uncontrolled.

Emissions from the Shell Core Wash Dip Tank #7 are uncontrolled.

(3) One (1) Shell Core Machine #8, constructed prior to 1977, and its corresponding Shell Core Wash Dip Tank #8, with a nominal throughput of 0.3 tons of sand per hour.

Emissions from the Shell Core Machine #8 are uncontrolled.

Emissions from the Shell Core Wash Dip Tank #8 are uncontrolled.

**SECTION D.10**

(19) **Air Set Core Making Process**
One (1) Air Set Core Making Process, with a nominal sand throughput of 6.0 tons of sand per hour. The Air Set Core Making Process consists of the following emission units:

(a) One (1) Air Set Core Sand Handling Process, with a nominal sand throughput of 6.0 tons of sand per hour:

(1) One (1) South (S) Sand Silo, constructed prior to 1977, with an integral bin vent to control particulate emissions when loading.

(2) One (1) enclosed Pneumatic Sand Transporter #2, constructed in 1996, for transferring sand from the South (S) Sand Silo to the Air Set Core Sand Hopper #3.

(3) One (1) Phenolic Urethane Core Sand Hopper #3, constructed in 1980:

The particulate emissions from the Phenolic Urethane Core Sand Hopper #3 are captured and controlled by Baghouse U, exhausting through Stack U.

(b) One (1) Air Set Core Sand Mixer #2, constructed prior to 1977, with a nominal throughput of 6.0 tons of sand per hour.

Emissions from the Air Set Core Sand Mixer #2 are uncontrolled.

(c) One (1) Air Set Core Machine #2, constructed prior to 1977, with a nominal throughput of 6.0 tons of sand per hour.

Emissions from the Air Set Core Machine #2 are uncontrolled.

**SECTION D.11**

(20) **Large Core Production Cell**
One (1) Large Core Production Cell (ID LCC), permitted in 2006, which will initially be utilized as a phenolic urethane cold box core making operation. The Large Core Production Cell consists of the following emission units:

(a) One (1) Northeast (NE) Sand Silo, constructed prior to 1977, with an integral bin vent to control particulate emissions when loading.

(b) One (1) enclosed Pneumatic Sand Transporter #1, constructed in 1996, for transferring sand from the Northeast (NE) Sand Silo to the Phenolic Urethane Core Sand Hopper #8.

(c) One (1) Large Core Sand Weigh Hopper, permitted to be constructed in 2006, with a nominal throughput capacity of 15 tons of sand per hour.

The particulate emissions from the Large Core Sand Weigh Hopper are captured and controlled by Baghouse Q, exhausting through Stack Q.

(d) Large Core Production Cell Line #10, constructed in 2006, consisting of the following emission units:

(1) One (1) Sand / Resin Mixer #10, with a nominal throughput capacity of 15 tons of sand per hour and 34.18 pounds of resin per hour

Emissions from the Sand / Resin Mixer #10 are uncontrolled.

(2) One (1) Large Core Sand Holding Hopper #10, with a nominal sand throughput of 15 tons of sand per hour.

The particulate emissions from the Large Core Sand Holding Hopper #10 are captured and controlled by Baghouse Q, exhausting through Stack Q.

(3) One (1) electric Large Core Sand Heater #10, with a nominal sand throughput of 15 tons of sand per hour.

The particulate emissions from the Large Core Sand Heater #10 are captured and controlled by Baghouse Q, exhausting through Stack Q.

(4) One (1) Cold Box Phenolic Urethane Core Machine #29, with a nominal throughput capacity of 7 tons of cores per hour, using a nominal of 2.75 pounds of catalyst per ton of core sand;

(A) Operating Scenario #1
The current operating scenario, Operating Scenario #1, will use Resin #1 and Catalyst #1. Resin #1 is a phenolic urethane resin. Catalyst #1 is Dimethylisopropylamine (DMIPA) or an equivalent, non-HAP containing catalyst.

The VOC emissions from the Cold Box Phenolic Urethane Core Machine #29, when using Resin #1 and Catalyst #1, are captured at the core box and controlled by Acid Scrubber AF, exhausting through Stack AF.

(B) Operating Scenario #2
Operating Scenario #2 will use Resin #2 and Catalyst #2. This system will be tested within 180 days of commencing operations using this resin/catalyst system.

(C) Operating Scenario #3
Operating Scenario #3 will use Resin #3 and Catalyst #3. This system will be tested within 180 days of commencing operations using this resin/catalyst system.

(5) One (1) Core Wash Dip Tank #29, with a nominal capacity of 15 tons of cores per hour and 20.408 pounds of core wash per ton of core sand.

Emissions from the Core Wash Dip Tank #29 are uncontrolled.

(e) One (1) natural gas fired Core Oven #29, with a maximum heat input capacity of 6.0 million British thermal units (MMBtu) per hour.

Emissions from the natural gas fired Core Oven #29 are captured, but uncontrolled, and exhaust to Stack V-45.

**SUMMARY OF COMMON CONTROL**

Wet Scrubber A
– Cupola Melt Furnace

Wet ESP
– Cupola Melt Furnace

Wet Collector #1 (Stack D) is common to:
– Herman 3 Sand Handling,
– Herman 3 Shakeout, and
– Herman 3 Return Sand Conveyor.

Wet Collector #3 (Stack B) is common to:
– Herman 2 Shakeout, and
– Klein Transport PF504-5.

Wet Collector #4 (Stack E) is common to:
– Herman 3 Shakeout, and
– Herman 3 Sand Handling.

The Sonoperoxone® system is common to:
– Herman 3 Pouring Station,
– Herman 3 Castings Cooling,

– Herman 3 Shakeout, and
– Herman 3 Sand Handling.

Baghouse #1 (Stack F)
– Herman 2 Sand Handling

Baghouse #2 (Stack G) is common to:
– Inclined Shakeout and Sort System, and
– Vibratory Shaker.

Baghouse #3 (Stack H) is common to:
– Shot Blast Machines SB-1 through SB-4, and
– Shot Blast Machine SB-10.

Baghouse #6 (Stack K) is common to:
– Shot Blast Machine SB-7,
– Grinders GR-19 and GR-20,
– Grinder GR-23,
– Grinders GR-25 and GR-26, and
– Grinders GR-34 through GR-36.

Baghouse #9 (Stack R) is common to:
– Waste Sand Handling, Screening and Transport System

Baghouse #11 (Stack W) is common to:
– Herman 3 Shakeout, and
– Herman 3 Sand Handling.

The Baghouse #12 (Stack X) is common to:
– Shot Blast Machine SB-9,
– Grinders GR-31 through GR-33, and
– Grinder GR-37.

Baghouse #13 (Stack Y) is common to:
– Herman 2 Sand Handling, and
– Klein Transport F902-5.

Baghouse #14 (Stack AD)
– Cupola Charge Door

The Baghouse #15 (Stack AE) is common to:
– Grinders GR-1 through GR-4,
– Grinders GR-9 and GR-10,
– Grinders GR-29 and GR-30, and
– Grinders ABB and FANUC.

Baghouse #16 (Stack AG) is common to:
– Shot Blast Machines SB-5 and SB-6,
– Shot Blast Machine SB-8,
– Hose Blast System for SB-8,
– Grinders GR-11 through GR-14, and
– Grinders GR-16 and GR-17.

Baghouse Q (Stack Q) is common to:
– Phenolic Urethane Core Sand Hopper #1,
– Phenolic Urethane Sand Heater #1,

– Large Core Sand Weigh Hopper,
– Large Core Sand Holding Hopper #10, and
– Large Core Sand Heater #10.

Baghouse U (Stack U) is common to:
– Phenolic Urethane Core Sand Hoppers #3 and #4,
– Phenolic Urethane Sand Heaters #3 and #4, and
– Air Set Core Sand Hopper #3.

Baghouse Z (Stack Z) is common to:
– Sand Hopper #9,
– Sand Heater #9,
– Phenolic Urethane Core Sand Hopper #8,
– Phenolic Urethane Sand Heater #5, and
– Phenolic Urethane Sand Heater #8.

Acid Scrubber AF (Stack AF) is common to:
– Phenolic Urethane Core Machines #1 and #2,
– Phenolic Urethane Core Machines #4 and #5,
– Phenolic Urethane Core Machines #7 through #9,
– Phenolic Urethane Core Machines #12 through #19,
– Phenolic Urethane Core Machines #21 and #22,
– Phenolic Urethane Core Machine #25,
– Phenolic Urethane Core Machines #27 through #29 and
– Phenolic Urethane Core Machines #31 through #33.

**SUMMARY OF COMMON EQUIPMENT**

Pneumatic Sand Transporter #1 is common to:
– Northeast (NE) Sand Silo,
– Phenolic Urethane Core Making Line #9,
– Phenolic Urethane Core Making Line #8, and
– Large Core Production Cell Line #10.

Pneumatic Sand Transporter #2 is common to:
– South (S) Sand Silo,
– Phenolic Urethane Core Making Lines #1 through #5, and
– Air Set Core Making Process.

The Northeast (NE) Sand Silo is common to:
– Pneumatic Sand Transporter #1,
– Phenolic Urethane Core Making Line #9,
– Phenolic Urethane Core Making Line #8, and
– Large Core Production Cell Line #10.

The South (S) Sand Silo is common to:
– Pneumatic Sand Transporter #2,
– Phenolic Urethane Core Making Lines #1 through #5, and
– Air Set Core Making Process.

The Phenolic Urethane Core Sand Hopper #1 is common to:
– Phenolic Urethane Core Making Lines #1 and #2.

The Phenolic Urethane Core Sand Hopper #3 is common to:
– Phenolic Urethane Core Making Lines #3 and #5, and
– Air Set Core Making Process.

The natural gas fired Core Oven #1 is common to:
– Phenolic Urethane Core Machines #15 and #16.

The natural gas fired Core Oven #2 is common to:
– Phenolic Urethane Core Machines #18 and #19.

The natural gas fired Core Oven #4 is common to:
– Phenolic Urethane Core Machines #4 and #5.

The natural gas fired Core Oven #9 is common to:
– Phenolic Urethane Core Machines #21, #22, and #28.

The natural gas fired Core Oven #27 is common to:
– Phenolic Urethane Core Machines #1 and #27.

The portable electric Core Oven #1 is common to:
– Phenolic Urethane Core Machines #8, #9, and #12 through #14.

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

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

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

(2) The following equipment related to manufacturing activities no resulting in the emission of HAPs: brazing equipment, cutting torches, soldering equipment, welding equipment. [326 IAC 6-3-2]

(3) Cutting 200,000 linear feet or less than one (1") plate or equivalent. [326 IAC 6-3-2]

## 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, T085-30768-00003, 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(34), 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(34).

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

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

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

and

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

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

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

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

(2) The compliance status;

(3) Whether compliance was continuous or intermittent;

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

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

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

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

(a) 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(34).

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(34).

(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 Northern 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
Northern Regional Office phone: (574) 245-4870; fax: (574) 245-4877.

(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(34).

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

(a) All terms and conditions of permits established prior to T085-30768-00003 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(34).

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

(1) That this permit contains a material mistake.

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

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

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

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

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

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

Request for renewal shall be submitted to:

Indiana Department of Environmental Management
Permit Administration and Support Section, 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(34).

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

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

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

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

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

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

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

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

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

(4) The Permittee notifies the:

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

and

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

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

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

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

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

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

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

(3) Any change in emissions; and

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

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

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

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

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

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(34).

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

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

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

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

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

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

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

**SECTION C SOURCE OPERATION CONDITIONS**

Entire Source

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

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

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

C.2 Opacity [326 IAC 5-1]

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

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

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

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

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

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

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

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

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

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

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

C.7 Asbestos Abatement Projects [326 IAC 14-10] [326 IAC 18] [40 CFR 61, Subpart M]

(a) Notification requirements apply to each owner or operator. If the combined amount of regulated asbestos containing material (RACM) to be stripped, removed or disturbed is at least 260 linear feet on pipes or 160 square feet on other facility components, or at least

thirty-five (35) cubic feet on all facility components, then the notification requirements of 326 IAC 14-10-3 are mandatory. All demolition projects require notification whether or not asbestos is present.

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

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

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

(A) Asbestos removal or demolition start date;

(B) Removal or demolition contractor; or

(C) Waste disposal site.

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

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

All required notifications shall be submitted to:

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

The notice shall include a signed certification from the owner or operator that the information provided in this notification is correct and that only Indiana licensed workers and project supervisors will be used to implement the asbestos removal project. The notifications do not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34).

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

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

(g) Indiana Licensed Asbestos Inspector
The Permittee shall comply with 326 IAC 14-10-1(a) that requires the owner or operator, prior to a renovation/demolition, to use an Indiana Licensed Asbestos Inspector to

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

C.12 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.13 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.14 Response to Excursions or Exceedances [326 IAC 2-7-5] [326 IAC 2-7-6]

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

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

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

(1) initial inspection and evaluation;

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

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

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

(1) monitoring results;

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

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

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

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

C.15 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-7-5][326 IAC 2-7-6]

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

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

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

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

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

C.16 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(32) (“Regulated pollutant, which is used only for purposes of Section 19 of this rule”) from the source, for purpose of fee assessment.

The statement must be submitted to:

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

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

C.17 General Record Keeping Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-6] [326 IAC 2-2][326 IAC 2-3]

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

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

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

(1) Before beginning actual construction of the “project” (as defined in 326 IAC 2-2-1(qq) and/or 326 IAC 2-3-1(ll)) at an existing emissions unit, document and maintain the following records:

(A) A description of the project.

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

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

(i) Baseline actual emissions;

(ii) Projected actual emissions;

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

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

(d) If there is a reasonable possibility (as defined in 40 CFR 51.165(a)(6)(vi)(A) and/or 40 CFR 51.166(r)(6)(vi)(a)) that a “project” (as defined in 326 IAC 2-2-1(qq) and/or 326 IAC 2-3-1(ll)) at an existing emissions unit, other than projects at a source with a Plantwide Applicability Limitation (PAL), which is not part of a “major modification” (as

defined in 326 IAC 2-2-1(ee) and/or 326 IAC 2-3-1(z)) may result in significant emissions increase and the Permittee elects to utilize the “projected actual emissions” (as defined in 326 IAC 2-2-1(rr) and/or 326 IAC 2-3-1(mm)), the Permittee shall comply with following:

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

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

C.18 General Reporting Requirements [326 IAC 2-7-5(3)(C)] [326 IAC 2-1.1-11] [326 IAC 2-2] [326 IAC 2-3]

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

(b) The address for report submittal is:

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

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

(d) Reporting periods are based on calendar years, unless otherwise specified in this permit. For the purpose of this permit “calendar year” means the twelve (12) month period from January 1 to December 31 inclusive.

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

(1) The annual emissions, in tons per year, from the project identified in (c)(1) in Section C- General Record Keeping Requirements exceed the baseline actual emissions, as documented and maintained under Section C- General Record Keeping Requirements (c)(1)(C)(i), by a significant amount, as defined in

326 IAC 2-2-1 (xx) and/or 326 IAC 2-3-1 (qq), for that regulated NSR pollutant, and

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

(f) The report for project at an existing emissions unit shall be submitted 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.19 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:**

(1) **Cupola Charge Handling**
Cupola Charge Handling operations, constructed prior to 1977, with a nominal charging capacity of 53.45 tons per hour of solid metal, coke, and limestone.

Emissions from the Cupola Charge Handling operations are uncontrolled.

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

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

D.1.1 PSD Minor Limits [326 IAC 2-2] [326 IAC 6-3-2]

Metal Charge Limit

(a) The amount of metal charged in the Cupola Charge Handling shall be limited to 199,194 tons per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month.

Cupola Charge Handling

(b) The PM emissions from the Cupola Charge Handling shall be limited to 0.6 pounds per ton of metal charged.

(c) The $PM_{10}$ emissions from the Cupola Charge Handling shall be limited to 0.36 pounds per ton of metal charged.

(d) The lead emissions from the Cupola Charge Handling shall be limited to 0.002 pounds per ton of metal charged.

Compliance with these limits and the limits specified in Conditions D.2.1, D.3.1, D.5.1, D.6.1 and D.8.2(b) will render the requirements of 326 IAC 2-2 (PSD) not applicable to permit No. 085-14027-00003 (the former Hot Box Core Making Line #9 installation), and to the Significant Permit Modification No. 085-25675-00003 (Conversion of the Hot Box Core Making Line #9 to Phenolic Urethane Core Making Line #9).

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

D.1.2 Record Keeping Requirements

(a) To document the compliance status with Condition D.1.1 – PSD Minor Limits, the Permittee shall maintain records of the amount of metal charged each month in the Cupola Charge Handling.

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

D.1.3 Reporting Requirements

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

## SECTION D.2 FACILITY OPERATION CONDITIONS

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

(2) **Cupola Melt Furnace**
One (1) Cupola Melt Furnace, constructed prior to 1977, with a nominal capacity of 48.5 tons per hour of metal melted, and a maximum heat input capacity of 69.95 million British thermal units (MMBtu) per hour.

Particulate emissions are captured and controlled by Wet Scrubber A and Wet Electrostatic Precipitator WESP (for NESHAP EEEEE compliance). Carbon monoxide emissions are captured and controlled by three (3) natural gas fired afterburners, each with a maximum heat input capacity of 5 million British thermal units (MMBtu) per hour. Emissions exhaust through Stack A.

Fugitive particulate emissions from the Cupola Charge Door are captured and controlled by Baghouse #14, exhausting through Stack AD.

(3) **Hot Blast Preheater**
One natural gas fired Hot Blast Preheater, constructed in 1981, with a maximum heat input capacity of 22 million British thermal units (MMBtu) per hour for preheating the blast air for the Cupola Melt Furnace.

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

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

D.2.1 PSD Minor Limits [326 IAC 2-2] [326 IAC 6-3-2]

Metal Melted Limit

(a) The amount of metal melted in the Cupola Melt Furnace shall be limited to 187,919 tons per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month.

Cupola Melt Furnace

(b) The PM emissions from the Cupola Melt Furnace shall be limited to 0.821 pounds per ton of metal.

(c) The $PM_{10}$ emissions from the Cupola Melt Furnace shall be limited to 0.738 pounds per ton of metal.

(d) The $SO_2$ emissions from the Cupola Melt Furnace shall be limited to 1.25 pounds per ton of metal.

(e) The $NO_X$ emissions from the Cupola Melt Furnace shall be limited to 0.42 pounds per ton of metal.

(f) The VOC emissions from the Cupola Melt Furnace shall be limited to 0.009 pounds per ton of metal.

(g) The CO emissions from the Cupola Melt Furnace shall be limited to 7.250 pounds per ton of metal.

(h) The Lead emissions from the Cupola Melt Furnace shall be limited to 0.002 pounds per

ton of metal.

These limitations for the Cupola Melt Furnace are for Stack A and Stack AD combined.

Compliance with the limits above and the limits specified in Conditions D.1.1, D.3.1, D.5.1(a) & (b), D.6.1 and D.7.2 will render the requirements of 326 IAC 2-2 (PSD) not applicable to permit No. 085-14027-00003 (the former Hot Box Core Making Line #9 installation), and to the Significant Permit Modification No. 085-25675-00003 (Conversion of the Hot Box Core Making Line #9 to Phenolic Urethane Core Making Line #9).

D.2.2 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

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

**Compliance Determination Requirements**

D.2.3 Emission Controls Operation [326 IAC 2-7-6(6)]

(a) Wet Scrubber A – Cupola Melt Furnace
The Wet Scrubber A for particulate emissions control shall be in operation and control emissions from the Cupola Melt Furnace at all times when:

(1) the Cupola Melt Furnace is in operation, and
(2) during startup of the Cupola Melt Furnace.

(b) Baghouse #14 – Charge Door

(1) The Baghouse #14 for particulate emissions control shall be in operation and control fugitive particulate emissions from the charge door when the Cupola Melt Furnace is in operation.

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

(c) Afterburners – Cupola Melt Furnace
The afterburner system shall be in operation for CO emissions control from the Cupola Melt Furnace at all times when:

(1) the Cupola Melt Furnace is in operation, and

(2) during startup of the Cupola Melt Furnace.

D.2.4 Testing Requirements [326 IAC 2-7-6(1),(6)]

(a) The Permittee shall perform PM testing on the Cupola Melt Furnace in order to demonstrate compliance with Condition D.2.1(b).

(b) In order to demonstrate the compliance status with Condition D.2.1(c), the Permittee shall perform emissions testing to determine $PM_{10}$ emissions from the Cupola Melt Furnace. $PM_{10}$ includes filterable and condensable PM.

(c) The Permittee shall perform VOC testing on Cupola Melt Furnace in order to demonstrate compliance with Condition D.2.1(f).

(d) The Permittee shall perform CO testing on Cupola Melt Furnace in order to demonstrate compliance with Condition D.2.1(g).

(e) The Permittee shall perform Pb testing on Cupola Melt Furnace in order to demonstrate compliance with Condition D.2.1(h).

(f) Testing shall be conducted utilizing methods as approved by the Commissioner. Testing of PM, $PM_{10}$, VOC, CO and Pb, shall be repeated at least once every five (5) years from the date of the last valid compliance demonstration. Section C – Performance Testing contains the Permittee's obligations with regard to the testing required by this condition.

D.2.5 Scrubber Failure Detection [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

In the event that scrubber failure has been observed, the failed scrubber 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).

D.2.6 Broken or Failed Bag Detection [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

(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 emission 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.

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

D.2.7 Visible Emissions Notations [40 CFR 64]

(a) Visible emission notations of the:

(1) Wet Scrubber A exhaust (Stack A), and
(2) Baghouse #14 exhaust (Stack AD)

shall be performed once per day during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.

(b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

(c) In the case of batch or discontinuous operations, readings shall be taken during that part

of the operation that would normally be expected to cause the greatest emissions.

(d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

(e) If abnormal emissions are observed, the Permittee shall take reasonable response steps. Observation of abnormal emissions that do not violate an applicable opacity limit is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit. Section C – Response to Excursions or Exceedances contains the Permittee's obligations with regard to responding to the reasonable response steps required by this condition.

D.2.8 Cupola Melt Furnace Temperature Monitoring [40 CFR 64]

(a) A continuous monitoring system shall be calibrated, maintained, and operated on the Cupola Melt Furnace for measuring the temperature of the Cupola Melt Furnace gas stream. For the purposes of this condition, continuous shall mean no less than once per minute.

The output of this system shall be recorded as an hourly average.

From the date of issuance of this permit until the approved stack test results are available, the Permittee shall take appropriate response steps whenever the hourly average temperature of the cupola gas stream is below 1300°F.

This minimum temperature requirement applies at all times during cupola operation, except for the following:

(1) periods when the Cupola Melt Furnace blast air is turned off;

(2) periods when the blast air has been turned on for less than 30 consecutive minutes; and

(3) during the last 30 minutes of operation of the Cupola Melt Furnace.

An hourly average temperature that is below 1300°F is not a deviation from this permit.

The Permittee shall monitor the times that the Cupola Melt Furnace blast air is turned on and off.

(b) The Permittee shall determine the hourly average temperature from the most recent valid stack test that demonstrates compliance with the limits in Condition D.2.1 – PSD Minor Limits, as approved by IDEM.

(c) On and after the date the approved stack test results are available, the Permittee shall take appropriate response steps whenever the hourly average temperature of the Cupola Melt Furnace gas stream is below the hourly average temperature as observed during the compliant stack test. An hourly average temperature that is below the hourly average temperature as observed during the compliance stack test is not a deviation from this permit.

(d) Failure to take response steps shall be considered a deviation from this permit. Section C – Response to Excursions or Exceedances contains the Permittee's obligations with regard to responding to the reasonable response steps required by this condition.

D.2.9 Scrubber Parametric Monitoring [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)] [40 CFR 64]

(a) The Permittee shall record the pressure drop and flow rate of the Wet Scrubber A, at least once per day when the Cupola Melt Furnace is in operation.

(1) When for any one reading, the pressure drop across Wet Scrubber A is below a minimum of 34 inches of water or a minimum established during the latest stack test, the Permittee shall take reasonable response steps.

(2) When for any one reading, the flow rate across Wet Scrubber A is below a minimum of 225 gallons per minute or a minimum flow rate established during the latest stack test, the Permittee shall take reasonable response steps.

A pressure reading or flow rate that is below the above mentioned minimum is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit. Section C – Response to Excursions or Exceedances contains the Permittee's obligations with regard to responding to the reasonable response steps required by this condition.

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

D.2.10 Baghouse Parametric Monitoring [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)] [40 CFR 64]

(a) The Permittee shall record the pressure drop across the Baghouse #14, at least once per day when the associated process is in operation. When for any one reading, the pressure drop across the baghouses is outside the range of 3.0 and 9.0 or a range established during the latest stack test, the Permittee shall take reasonable response steps. 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. Section C – Response to Excursions or Exceedances contains the Permittee's obligations with regard to responding to the reasonable response steps required by this condition.

(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 or replaced at least once every six (6) months.

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

D.2.11 Record Keeping Requirements

(a) To document compliance with Condition D.2.1(a) – PSD Minor Limits, the Permittee shall maintain records of the amount of metal melted in the Cupola Melt Furnace.

(b) To document compliance with Condition D.2.6 – Visible Emission Notations, the Permittee shall maintain daily records of visible emission notations of the wet scrubber A and baghouse #14 stack exhausts. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g. the process did not operate that day).

(c) To document compliance with Condition D.2.7 – Cupola Melt Furnace Temperature Monitoring, the Permittee shall maintain records of the continuous temperature readings of the Cupola Melt Furnace gas stream and make such records available upon request to IDEM, OAQ.

(d) To document compliance with Condition D.2.8 – Scrubber Parametric Monitoring, the

Permittee shall maintain the daily records of the pressure drop and flow rate reading across wet scrubber A. The Permittee shall include in its daily record when a pressure drop and flow rate reading are not taken and the reason for the lack of a pressure drop and flow rate readings, (e.g. the process did not operate that day).

(e) To document compliance with Condition D.2.10 – Baghouse Parametric Monitoring, the Permittee shall maintain the daily records of the pressure drop across baghouse #14. 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, (e.g. the process did not operate that day).

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

D.2.12 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.2.1(a) – PSD Minor Limits, shall be submitted using the reporting forms located at the end of this permit, or the equivalent, not later than thirty (30) days following the end of each calendar quarter. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a “responsible official” as defined by 326 IAC 2-7-1(34). Section C - General Reporting Requirements contains the Permittee's obligations with regard to the reporting required by this condition.

**SECTION D.3 FACILITY OPERATION CONDITIONS**

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

(4) **Herman 2 Mold Line**

(a) One (1) Herman 2 Pouring Station, constructed prior to 1977, with a nominal throughput of 37 tons of iron per hour and 166 tons of mold and core sand per hour, with emissions captured, but uncontrolled, and exhausting to the atmosphere through Vent V-19.

(b) One (1) Herman 2 Castings Cooling process, constructed prior to 1977, with a nominal throughput of 37 tons of iron per hour and 166 tons of mold and core sand per hour, with emissions captured, but uncontrolled, and exhausting to the atmosphere through Vents V-8 and V-9.

(c) One (1) Herman 2 Shakeout process, constructed prior to 1977, with a nominal throughput of 37 tons of iron per hour and 166 tons of mold and core sand per hour, with particulate emissions captured and controlled by Wet Collector #3, exhausting through Stack B.

(d) One (1) Herman 2 Sand Handling process, constructed prior to 1977 and modified in 2009, with a nominal throughput of 166 tons of mold and core sand per hour.

The Herman 2 Sand Handling process includes

(1) sand screening, sand cooling, water addition, sand mulling, and the ancillary equipment associated with each, all constructed prior to 1977, with particulate emissions captured and controlled by Baghouse #1, exhausting through Stack F, and Baghouse #13, exhausting through Stack Y.

(2) One (1) waste sand handling system supporting the Herman 2 Mold Line, consisting of two (2) Klein transports, constructed in 2009, identified as:

(A) PF504-5, with a total nominal capacity of 12.0 tons per hour, with particulate emissions from sending operations captured and controlled by Wet Collector #3, exhausting through Stack B; and

(B) F902-5, with a total nominal capacity of 9.0 tons per hour, with particulate emissions from sending operations captured and controlled by Baghouse #13, exhausting through Stack Y.

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

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

D.3.1 PSD Minor Limits [326 IAC 2-2] [326 IAC 6-3-2]

(a) Sand Limit
The combined amount of core and mold sand handled for the:

(1) Herman 2 Sand Handling, and

(2) Herman 3 Sand Handling

shall be limited to 1,127,516 tons of sand per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month.

This core and mold sand limitation is for the Herman 2 and Herman 3 Sand Handling combined.

(b) Herman 2 Pouring (V-19)

(1) The PM emissions from the Herman 2 Pouring shall be limited to 0.118 pounds per ton of metal.

(2) The $PM_{10}$ emissions from the Herman 2 Pouring shall be limited to 0.052 pounds per ton of metal.

(3) The VOC emissions from the Herman 2 Pouring shall be limited to 0.163 pounds per ton of metal.

(4) The Lead emissions from the Herman 2 Pouring shall be limited to 0.016 pounds per ton of metal.

(c) Herman 2 Castings Cooling (V-8 and V-9)

(1) The PM emissions from the Herman 2 Castings Cooling shall be limited to 0.288 pounds per ton of metal.

(2) The $PM_{10}$ emissions from the Herman 2 Castings Cooling shall be limited to 0.196 pounds per ton of metal.

(3) The VOC emissions from the Herman 2 Castings Cooling shall be limited to 0.687 pounds per ton of metal.

These limitations for the Herman 2 Castings Cooling are for vents V-8 and V-9 combined.

(d) Herman 2 Shakeout (Stack B)

(1) The PM emissions from the Herman 2 Shakeout shall be limited to 0.034 pounds per ton of metal and sand.

(2) The $PM_{10}$ emissions from the Herman 2 Shakeout shall be limited to 0.058 pounds per ton of metal and sand.

(3) The VOC emissions from the Herman 2 Shakeout shall be limited to 0.115 pounds per ton of metal and sand.

(4) The lead emissions from the Herman 2 Shakeout shall be limited to 0.00018 pounds per ton of metal.

(e) Herman 2 Sand Handling (Stack F and Stack Y)

(1) The PM emissions from the Herman 2 Sand Handling shall be limited to 0.034 pounds per ton of metal and sand.

(2) The $PM_{10}$ emissions from the Herman 2 Sand Handling shall be limited to 0.058 pounds per ton of metal and sand.

(3) The VOC emissions from the Herman 2 Sand Handling shall be limited to 0.115 pounds per ton of metal and sand.

(4) The lead emissions from the Herman 2 Sand Handling shall be limited to 0.00018 pounds per ton of metal.

These limitations for the Herman 2 Sand Handling are for Stack F and Stack Y combined.

Compliance with the limits above and the limits specified in Conditions D.1.1, D.2.1, D.5.1(a) & (b), D.6.1 and D.7.2 will render the requirements of 326 IAC 2-2 (PSD) not applicable to permit No. 085-14027-00003 (the former Hot Box Core Making Line #9 installation), and to the Significant Permit Modification No. 085-25675-00003 (Conversion of the Hot Box Core Making Line #9 to Phenolic Urethane Core Making Line #9).

D.3.2 PSD Minor Limits [326 IAC 2-2] [326 IAC 6-3-2]

Herman 2 Waste Sand Handling System (Stack Y and Stack B)

(a) The PM emissions from the Klein transports shall be limited to 0.356 pounds per ton of sand.

(b) The $PM_{10}$ emissions from the Klein transports shall be limited to 0.214 pounds per ton of sand.

(c) The amount of waste sand handled for the Klein transports shall be limited to 106,000 tons of sand per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month.

These limitations for the Klein transports are for Stack Y and Stack B combined.

Compliance with the limits above and the limits specified in Conditions D.4.2(h) and D.6.1.3 will restrict the potential to emit from the 2009 modification to add the Klein Transports (Waste Sand Handling), Return Sand Conveyor, and Robotic Grinders to less than twenty-five (25) tons of PM per year and less than fifteen (15) tons of $PM_{10}$ per year. Therefore the requirements of 326 IAC 2-2 (PSD) are not applicable to the 2009 modification to add the Klein Transports (Waste Sand Handling), Return Sand Conveyor, and Robotic Grinders, including the unrestricted PTE of the 'fugitive' emissions from these emission units.

D.3.3 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

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

**Compliance Determination Requirements**

D.3.4 Emission Controls Operation [326 IAC 2-7-6(6)]

(a) Wet Collector #3
The Wet Collector #3 for particulate emissions control shall be in operation and control emissions from the Herman 2 Shakeout at all times when this processes is in operation.

(b) Baghouse #1
The Baghouse #1 for particulate emissions control shall be in operation and control emissions from the Herman 2 Sand Handling at all times when the Herman 2 Sand Handling is in operation.

(c) Baghouse #13

The Baghouse #13 for particulate emissions control shall be in operation and control emissions from the Herman 2 Sand Handling at all times when the Herman 2 Sand Handling is in operation.

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

D.3.5 Testing Requirements [326 IAC 2-7-6(1),(6)]

(a) The Permittee shall perform PM testing on the:

(A) Herman 2 Pouring (V-19),
(B) Herman 2 Castings Cooling (V-8 and V-9),
(C) Herman 2 Shakeout (Stack B),
(D) Herman 2 Sand Handling (Stack F and Stack Y), and
(E) Herman 2 Waste Sand Handling System (Stack Y and Stack B)

in order to demonstrate the compliance status with paragraphs (b)(1), (c)(1), (d)(1), and (e)(1), of Condition D.3.1 and Condition D.3.2(1).

(b) In order to demonstrate the compliance status with paragraphs (b)(2), (c)(2), (d)(2), and (e)(2), of Condition D.3.1 and Condition D.3.2(2), the Permittee shall perform emissions testing to determine the $PM_{10}$ emissions from the stack exhaust for:

(A) Herman 2 Pouring (V-19),
(B) Herman 2 Castings Cooling (V-8 and V-9),
(C) Herman 2 Shakeout (Stack B),
(D) Herman 2 Sand Handling (Stack F and Stack Y), and
(E) Herman 2 Waste Sand Handling System (Stack Y and Stack B)

$PM_{10}$ includes filterable and condensable PM.

(e) The Permittee shall perform VOC testing on the:

(A) Herman 2 Pouring (V-19),
(B) Herman 2 Castings Cooling (V-8 and V-9),
(C) Herman 2 Shakeout (Stack B), and
(D) Herman 2 Sand Handling (Stack F and Stack Y)

in order to demonstrate the compliance status with paragraphs (b)(3), (c)(3), (d)(3), and (e)(3), of Condition D.3.1.

(f) The Permittee shall perform Pb testing on the:

(A) Herman 2 Pouring (V-19),
(B) Herman 2 Castings Cooling (V-8 and V-9),
(C) Herman 2 Shakeout (Stack B), and
(D) Herman 2 Sand Handling (Stack F and Stack Y)

in order to demonstrate the compliance status with paragraphs (b)(4), (d)(4), and (e)(4), of Condition D.3.1.

(g) Testing shall be conducted utilizing methods as approved by the Commissioner. Testing of PM, $PM_{10}$, VOC and Pb, shall be repeated at least once every five (5) years from the date of the last valid compliance demonstration. Section C – Performance Testing contains the Permittee's obligations with regard to the testing required by this condition.

NOTE: Herman 2 and Herman 3 testing shall be performed alternatively, that is if Herman 2 testing for pollutants PM, $PM_{10}$, VOC, and Pb are performed in the first five (5) year cycle, Herman 3 testing for pollutants PM, $PM_{10}$, VOC, CO, and Pb shall be performed in the next five (5) year testing cycle.

D.3.6 Wet Collector Failure Detection [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

In the event that wet collector failure has been observed, the failed wet collector 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).

D.3.7 Broken or Failed Bag Detection [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

(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 emission 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.

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

D.3.8 Visible Emissions Notations [40 CFR 64]

(a) Visible Emission Notations:

(1) Pursuant to Agreed Order 2001-11054-A, issued on May 25, 2006, visible emission notations of the:

(A) Herman 2 Pouring Station vent (Vent V-19),
(B) Herman 2 Castings Cooling process vents (Vents V-8 and V-9),
(C) Herman 2 Shakeout process – Wet Collector #3 exhaust stack (Stack B),
(D) Herman 2 Sand Handling process – Baghouse #1 exhaust stack (Stack F), and
(E) Herman 2 Sand Handling process – Baghouse #13 exhaust stack (Stack Y)

shall be performed once per shift during normal daylight operations when exhausting to the atmosphere and when the associated processes are in operation. A trained employee shall record whether emissions are normal or abnormal.

(2) Visible emission notations of the:

(A) Klein Transport PF504-5 – Wet Collector #3 exhaust stack (Stack B), and
(B) Klein Transport F902-5 – Baghouse #13 exhaust stack (Stack Y)

shall be performed once per day during normal daylight operations when exhausting to the atmosphere and when the associated processes are in operation. 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 or Exceedances contains the Permittee's obligations with regard to responding to the reasonable response steps required by this condition.

D.3.9 Wet Collector Parametric Monitoring [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)] [40 CFR 64]

(a) Wet Collector #3 –Herman 2 Shakeout
The Permittee shall record the pressure drop and flow rate of or Herman 2 Shakeout process is in operation.

(1) When for any one reading, the pressure drop across Wet Collector #3 is below a minimum of 8 inches of water or a minimum pressure drop established during the latest stack test, the Permittee shall take reasonable response steps.

(2) When for any one reading, the flow rate across Wet Collector #3 is below a minimum of 200 gallons per minute or a minimum flow rate established during the latest stack test, the Permittee shall take reasonable response steps.

(b) 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. Section C – Response to Excursions or Exceedances contains the Permittee's obligations with regard to responding to the reasonable response steps required by this condition.

(c) The instruments used for determining the pressures and flow rates shall comply with Section C – Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated or replaced at least once every six (6) months.

D.3.10 Baghouse Parametric Monitoring [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)] [40 CFR 64]

(a) Baghouse #1 – Herman 2 Sand Handling

The Permittee shall record the pressure drop across Baghouse #1, at least once per day when the associated Herman 2 Sand Handling process is in operation. When for any one reading, the pressure drop across Baghouse #1 is outside the range of 4.0 and 10.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps.

(b) Baghouse #13 – Herman 2 Sand Handling
The Permittee shall record the pressure drop across Baghouse #13, at least once per day when the associated Herman 2 Sand Handling process is in operation. When for any one reading, the pressure drop across Baghouse #13 is outside the range of 2.0 and 8.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps.

(c) 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. Section C – Response to Excursions or Exceedances contains the Permittee's obligations with regard to responding to the reasonable response steps required by this condition.

(d) The instruments 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 or replaced at least once every six (6) months.

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

D.3.11 Record Keeping Requirements

(a) To document the compliance status with Condition D.3.1 – PSD Minor Limits, the Permittee shall maintain records of the combined amount of core and mold sand handled for the:

(1) Herman 2 Sand Handling, and
(2) Herman 3 Sand Handling.

(b) To document the compliance status with Condition D.3.2 – PSD Minor Limits, the Permittee shall maintain records of the combined amount of waste sand handled for the:

(1) Klein Transport PF504-5, and
(2) Klein Transport F902-5.

(c) To document the compliance status with Condition D.3.8(a)(1) – Visible Emissions Notations:

(1) Herman 2 Pouring Station exhaust (Vent V-19),
(2) Herman 2 Castings Cooling process exhaust (Vents V-8 and V-9),
(3) Herman 2 Shakeout process – Wet Collector #3 exhaust (Stack B),
(4) Herman 2 Sand Handling process – Baghouse #1 exhaust (Stack F), and
(5) Herman 2 Sand Handling process – Baghouse #13 exhaust (Stack Y)

once per shift and make such records available, upon request, to IDEM, OAQ. The Permittee shall include in its record when a visible emission notations was not taken and the reason for the lack of a visible emission notations, (e.g. the process did not operate that day).

(d) To document the compliance status with Condition D.3.9(a)(2) – Visible Emissions Notations, the Permittee shall maintain records of the visible emission notations of the:

(1) Klein Transport PF504-5 – Wet Collector #3 exhaust stack (Stack B), and
(2) Klein Transport F902-5 – Baghouse #13 exhaust stack (Stack Y)

once per day and make such records available, upon request, to IDEM, OAQ. The Permittee shall include in its daily record when a visible emission notations was not taken and the reason for the lack of a visible emission notations, (e.g. the process did not operate that day).

(e) To document the compliance status with Condition D.3.9 – Wet Collector Parametric Monitoring, the Permittee shall maintain the daily records of the pressure drop and flow rate reading across Wet Collector #3. The Permittee shall include in its daily record when a pressure drop and flow rate reading are not taken and the reason for the lack of a pressure drop and flow rate readings, (e.g. the process did not operate that day).

(f) To document the compliance status with Condition D.3.10 – Baghouse Parametric Monitoring, the Permittee shall maintain the daily records of the pressure drop across Baghouse #1 and #13. 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, (e.g. the process did not operate that day).

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

D.3.12 Reporting Requirements

A quarterly summary of the information to document compliance with Conditions D.3.1(a) – PSD Minor Limits, and D.3.2(c) – PSD Minor Limits, shall be submitted using the reporting forms located at the end of this permit, or the equivalent, not later than thirty (30) days following the end of each calendar quarter. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a “responsible official” as defined by 326 IAC 2-7-1(34). Section C - General Reporting Requirements contains the Permittee's obligations with regard to the reporting required by this condition.

**SECTION D.4 FACILITY OPERATION CONDITIONS**

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

(5) **Herman 3 Mold Line**

The volatile organic compound (VOC) emissions from the Herman 3 Mold line are reduced by one (1) Sonoperoxone® system (or an equivalent advanced oxidation system), sand system optimization, use of low VOC core resin binder materials, and automatic mold vent-off gas ignition.

(a) One (1) Herman 3 Pouring Station, constructed in 1991, with a nominal throughput of 28 tons of iron per hour and 165 tons of mold and core sand per hour, with emissions captured, but uncontrolled, and exhausting to the atmosphere through Vent V-10.

(b) One (1) Herman 3 Castings Cooling process, constructed in 1991, and modified in 2004, with a nominal throughput of 28 tons of iron per hour, and 165 tons of mold and core sand per hour, with emissions captured, but uncontrolled and exhausting to the atmosphere through Vent V-12.

(c) One (1) Herman 3 Shakeout process, constructed in 1991, with a nominal throughput of 28 tons of iron per hour, and 165 tons of mold and core sand per hour, with particulate emissions captured and controlled by Wet Collector #1, exhausting to Stack D, Wet Collector #4, exhausting through Stack E, and Baghouse #11, exhausting through Stack W.

(d) One (1) Herman 3 Sand Handling process, constructed in 1991 and modified in 2009, with a nominal throughput of 165 tons of mold and core sand per hour.

The Herman 3 Sand Handling process includes:

(1) sand screening, sand cooling, water addition, sand mulling, and the ancillary equipment associated with each, all constructed in 1991, with particulate emissions captured and controlled by Wet Collector #1, exhausting through Stack D, Wet Collector #2, exhausting through Stack C, Wet Collector #4, exhausting through Stack E, and Baghouse #11, exhausting through Stack W.

and

(2) one (1) Return Sand Conveyor, constructed in 2009, identified as RSC1, with particulate emissions captured and controlled by Wet Collector #1, exhausting through Stack D.

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

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

D.4.1 BACT Requirements [326 IAC 2-2-3] [326 IAC 8-1-6]

(a) Pursuant to SSM 085-18009-00003, issued on December 9, 2003, and the requirements of 326 IAC 2-2-3 (PSD) and 326 IAC 8-1-6 (General Reduction Requirements for New Facilities), the Best Available Control Technology (BACT) shall consist of the following:

(1) Metal Throughput Limit:

The amount of metal throughput to the Herman 3 Mold Line shall not exceed 90,578 tons per 12 consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month.

This limitation on the amount of metal throughput is the same as the metal throughput limit specified in Condition D.4.2 – PSD Minor Limits.

(2) Sand Throughput Limits:

The amount of sand throughput to the Herman 3 Mold Line shall not exceed 543,470 tons per 12 consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month.

This limitation on the amount of sand throughput is the same as the sand throughput limit specified in Condition D.4.2 – PSD Minor Limits.

(3) VOC Limits and Standards

(A) The VOC emissions from the Herman 3 Pouring Station shall not exceed 0.163 pounds per ton of metal.

(B) The VOC emissions from the Herman 3 Castings Cooling process shall not exceed 0.36 pounds per ton of metal. The Department may revise this permit to adjust the VOC limitation based upon the results of the stack test required in Condition D.4.6. The Department will provide an opportunity for public notice and comment prior to finalizing any permit revision. IC 13-15-7-3 (Revocation or Modification of a Permit: Appeal to Board) shall apply to this permit condition.

(C) The combined VOC emissions from the Herman 3 Shakeout and Herman 3 Sand Handling operations shall not exceed 0.115 pounds per ton of metal and sand total.

This VOC limitation is for the Herman 3 Shakeout and Herman 3 Sand Handling combined.

(D) The VOC emissions from the Herman 3 Mold Line shall be reduced through the continuous use of the Sonoperoxone® system or an equivalent system, sand system optimization, low VOC core resin binder materials, and automatic mold vent-off gas ignition.

(b) Pursuant to PSD/SSM 085-25816-00003 and 326 IAC 2-2-3 (PSD), Best Available Control Technology (BACT for Herman 3 Pouring, Cooling and Shakeout), the Permittee shall comply with the following:

| Emission Units | CO Limits (Pounds per ton metal) |
|---|---|
| Herman 3 Mold Pouring | 1.80 |
| Herman 3 Cast Cooling | 2.88 |
| Herman 3 Shakeout | 1.32 |

D.4.2 PSD Minor Limits [326 IAC 2-2] [326 IAC 6-3-2]

(a) Metal Throughput Limit:
The amount of metal throughput to the Herman 3 Mold Line shall not exceed 90,578 tons per 12 consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month.

This limitation on the amount of metal throughput is the same as the metal throughput limit specified in Condition D.4.1 – BACT Requirements.

(b) Sand Throughput Limits:

(1) The amount of sand throughput to the Herman 3 Mold Line shall not exceed 543,470 tons per 12 consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month.

This limitation on the amount of sand throughput is the same as the sand throughput limit specified in Condition D.4.1 – BACT Requirements.

(2) The combined amount of core and mold sand handled for the:

(A) Herman 2 Sand Handling, and

(B) Herman 3 Sand Handling

shall be limited to 1,127,516 tons of sand per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month.

This core and mold sand limitation is for the Herman 2 and Herman 3 Sand Handling combined.

(c) Herman 3 Mold Line Lead Emissions
The combined lead emissions from the Herman 3 Mold Line shall not exceed 0.013 pounds per ton of metal throughput.

(d) Herman 3 Pouring (V-10)

(1) The PM emissions from the Herman 3 Pouring Station shall not exceed 0.1176 pounds per ton of metal throughput.

(2) The $PM_{10}$ emissions from the Herman 3 Pouring Station shall not exceed 0.0524 pounds per ton of metal throughput.

(e) Herman 3 Castings Cooling (V-12)

(1) The PM emissions from the Herman 3 Castings Cooling process shall not exceed 0.2881 pounds per ton of metal throughput.

(2) The $PM_{10}$ emissions from the Herman 3 Castings Cooling process shall not exceed 0.1959 pounds per ton of metal throughput.

(f) Herman 3 Shakeout (Stack D, Stack E, and Stack W)

(1) The PM emissions from the Herman 3 Shakeout process shall not exceed 0.034 pounds per ton of metal and sand throughput.

This PM limitation for the Herman 3 Shakeout is for Stack D, Stack E, and Stack W combined.

(2) The $PM_{10}$ emissions from the Herman 3 Shakeout process shall not exceed 0.058 pounds per ton of metal and sand throughput.

This $PM_{10}$ limitation for the Herman 3 Shakeout is for Stack D, Stack E, and Stack W combined.

(g) Herman 3 Sand Handling (Stack C, Stack D, Stack E, and Stack W)

(1) The PM emissions from the Herman 3 Sand Handling process shall not exceed 0.034 pounds per ton of metal and sand throughput.

This PM limitation for the Herman 3 Sand Handling is for Stack C, Stack D, Stack E, and Stack W combined.

(2) The $PM_{10}$ emissions from the Herman 3 Sand Handling process shall not exceed 0.058 pounds per ton of metal and sand throughput.

This $PM_{10}$ limitation for the Herman 3 Sand Handling is for Stack C, Stack D, Stack E, and Stack W combined.

(h) Herman 3 Sand Handling (Stack D)

(1) The PM emissions from the Return Sand Conveyor shall not exceed 0.000911 pounds per ton of sand.

This PM limitation for the Return Sand Conveyor is for Stack D.

(2) The $PM_{10}$ emissions from the Return Sand Conveyor shall not exceed 0.000431 pounds per ton of sand.

This $PM_{10}$ limitation for the Return Sand Conveyor is for Stack D.

(i) Compliance with the limits listed under (a) through (g)above, restrict the PM, $PM_{10}$, and lead emissions from the modification to add the Herman 3 process (2003) to less than twenty-five (25) tons per year of PM, less than fifteen (15) tons per year of $PM_{10}$, and less than six tenths (0.6) tons per year of lead (Pb). Therefore, the requirements of 326 IAC 2-2 (PSD) are not applicable for PM, $PM_{10}$, and lead emissions from the 2003 modification to add the Herman 3 process.

(j) Compliance with the limits listed under (h) above, combined with the limits in Conditions D.4.2(b)(1), D.3.2 and D.6.1.3 restrict the PM and $PM_{10}$ emissions from the modification to add the Return Sand Conveyor, robotic grinders, and Klein Transports for waste sand handling (2009) to less than twenty-five (25) tons per year of PM and less than fifteen (15) tons per year of $PM_{10}$. Therefore, the requirements of 326 IAC 2-2 (PSD) are not applicable for PM and $PM_{10}$ emissions from the 2009 modification to add the Return Sand Conveyor, robotic grinders, and Klein Transports for waste sand handling, including the unrestricted PTE of the fugitive emissions from these emission units.

D.4.3 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan is required for these facilities and their control devices. Section B - Preventive Maintenance Plan contains the Permittee's obligations with regard to the preventive

maintenance plan required by this condition.

**Compliance Determination Requirements**

D.4.4 Emission Controls Operation [326 IAC 2-7-6(6)]

(a) Wet Collector #1 – Herman 3 Shakeout and Herman 3 Sand Handling
The Wet Collector #1 for particulate emissions control shall be in operation and control emissions from the Herman 3 Sand Handling and Herman 3 Shakeout processes at all times when either of these processes are in operation.

(b) Wet Collector #2 – Herman 3 Sand Handling
The Wet Collector #2 for particulate emissions control shall be in operation and control emissions from the Herman 3 Sand Handling at all times when the Herman 3 Sand Handling process is in operation.

(c) Wet Collector #4 –Herman 3 Sand Handling and Herman 3 Shakeout
The Wet Collector #4 for particulate control shall be in operation at all times and control emissions from the Herman 3 Sand Handling and Herman 3 Shakeout processes at all times when either of these processes are in operation.

(d) Baghouse #11 – Herman 3 Shakeout and Herman 3 Sand Handling

(1) The Baghouse #11 for particulate control shall be in operation and control emissions from the Herman 3 Shakeout and Herman 3 Sand Handling processes at all times when either of these processes are in operation.

(2) 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.

(e) Sonoperoxone® System or Equivalent System – Herman 3 Mold Line
The Sonoperoxone® system or an equivalent system for volatile organic compounds emissions control shall be in operation and control emissions from the Herman 3 Mold Line at all times when the Herman 3 Mold Line is in operation.

D.4.5 Testing Requirements [326 IAC 2-7-6(1),(6)]

(a) The Permittee shall perform VOC testing on the:

(1) Herman 3 Pouring (V-10),
(2) Herman 3 Castings Cooling (V-12), and
(3) Herman 3 Shakeout (Stack D, Stack E, and Stack W)
(4) Herman 3 Sand Handling (Stack C, Stack D, Stack E and Stack W)

in order to demonstrate the compliance status with Condition D.4.1(a)(3).

(b) The Permittee shall perform CO testing on the:

(1) Herman 3 Pouring (V-10),
(2) Herman 3 Castings Cooling (V-12), and
(3) Herman 3 Shakeout (Stack D, Stack E, and Stack W)

in order to demonstrate the compliance status with Condition D.4.1(b).

(c) The Permittee shall perform lead (Pb) testing on the:

(1) Herman 3 Pouring (V-10),
(2) Herman 3 Castings Cooling (V-12),
(3) Herman 3 Shakeout (Stack D, Stack E, and Stack W),
(4) Herman 3 Sand Handling (Stack C, Stack D, Stack E, and Stack W), and
(5) Return Sand Conveyor (Stack D)

in order to demonstrate the compliance status with Condition D.4.2(c).

(d) The Permittee shall perform PM testing on the:

(1) Herman 3 Pouring (V-10),
(2) Herman 3 Castings Cooling (V-12),
(3) Herman 3 Shakeout (Stack D, Stack E, and Stack W), and
(4) Herman 3 Sand Handling (Stack C, Stack D, Stack E, and Stack W)

in order to demonstrate the compliance status with paragraphs (d)(1), (e)(1), (f)(1), (g)(1) of Conditions D.4.2 and Condition D.4.3.

(e) The Permittee shall perform $PM_{10}$ testing on the:

(1) Herman 3 Pouring (V-10),
(2) Herman 3 Castings Cooling (V-12),
(3) Herman 3 Shakeout (Stack D, Stack E, and Stack W),
(4) Herman 3 Sand Handling (Stack C, Stack D, Stack E, and Stack W)

in order to demonstrate the compliance status with paragraphs (d)(2), (e)(2), (f)(2), (g)(2) of Conditions D.4.2. $PM_{10}$ includes filterable and condensable PM.

(f) Testing shall be conducted utilizing methods as approved by the Commissioner at least once every five (5) years from the date of the last valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C – Performance Testing contains the Permittee's obligations with regard to the testing required by this condition.

NOTE: Herman 2 and Herman 3 testing shall be performed alternatively, that is if Herman 3 testing for pollutants PM, $PM_{10}$, VOC, CO, and Pb are performed in the first five (5) year cycle, Herman 2 testing for pollutants PM, $PM_{10}$, VOC, and Pb shall be performed in the next five (5) year testing cycle.

D.4.6 Continuous Opacity Monitoring [326 IAC 3-5] [326 IAC 2-2-3]

(a) Continuous Opacity Monitoring (COM)

(1) Pursuant to 326 IAC 2-2-3, upon startup of the Herman 3 Castings Cooling, a continuous monitoring system shall be installed, calibrated, maintained, and operated for measuring opacity from the Herman 3 Castings Cooling vent (V-12).

(2) The continuous monitoring systems shall meet the performance specifications of 326 IAC 3-5-2.

(b) Opacity – 10%
Pursuant to CP 085-2141-00003, issued on December 12, 1991, and SSM

085-18009-00003, issued on December 9, 2003:

The Permittee shall take appropriate response steps whenever the opacity exceeds 10% for three (3) consecutive six (6) minute averaging periods. Failure to take response steps shall be considered a deviation from this permit. Section C – Response to Excursions or Exceedances contains the Permittee's obligations with regard to responding to the reasonable response steps required by this condition.

D.4.7 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 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.

D.4.8 Wet Collector Failure Detection [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

In the event that wet collector failure has been observed, the failed wet collector 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).

D.4.9 Broken or Failed Bag Detection [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

(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 emission 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.

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

D.4.10 Visible Emissions Notations [40 CFR 64]

(a) Visible emission notations of the:

(1) Wet Collector #1 exhaust stack (Stack D),
(2) Wet Collector #2 exhaust stack (Stack C),
(3) Wet Collector #4 exhaust stack (Stack E), and
(4) Baghouse #11 exhaust stack (Stack W)

shall be performed once per day during normal daylight operations when exhausting to the atmosphere and when the associated processes are in operation. 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 or Exceedances contains the Permittee's obligations with regard to responding to the reasonable response steps required by this condition.

D.4.11 Wet Collector Parametric Monitoring [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)] [40 CFR 64]

(a) Wet Collector #1 – Herman 3 Sand Handling and Herman 3 Shakeout
The Permittee shall record the pressure drop and flow rate across the Wet Collector #1, at least once per day, when either the Herman 3 sand handling process or the Herman 3 Shakeout process is in operation.

(1) When for any one reading, the pressure drop across Wet Collector #1 is below a minimum of 8 inches of water or a minimum established during the latest stack test, the Permittee shall take reasonable response steps.

(2) When for any one reading, the flow rate across Wet Collector #1 is below a minimum of 200 gallons per minute or a minimum flow rate established during the latest stack test, the Permittee shall take reasonable response steps.

(b) Wet Collector #2 – Herman 3 Sand Handling
The Permittee shall record the pressure drop and flow rate across the Wet Collector #2, at least once per day, when the Herman 3 Sand Handling process is in operation.

(1) When for any one reading, the pressure drop across Wet Collector #2 is below a minimum of 8 inches of water or a minimum established during the latest stack test, the Permittee shall take reasonable response steps.

(2) When for any one reading, the flow rate across Wet Collector #2 is below a minimum of 200 gallons per minute or a minimum flow rate established during the latest stack test, the Permittee shall take reasonable response steps.

(c) Wet Collector #4 –Herman 3 Sand Handling and Herman 3 Shakeout
The Permittee shall record the pressure drop and flow rate across Wet Collector #4, at least once per day, when either the Herman 3 the Herman 3 Sand Handling process or Shakeout process is in operation.

(1) When for any one reading, the pressure drop across Wet Collector #4 is below a minimum of 8 inches of water or a minimum established during the latest stack test, the Permittee shall take reasonable response steps.

(2) When for any one reading, the flow rate across Wet Collector #4 is below a minimum of 200 gallons per minute or a minimum flow rate established during the latest stack test, the Permittee shall take reasonable response steps.

(d) A pressure reading or flow rate that is below the above mentioned minimums is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit. Section C – Response to Excursions or Exceedances contains the Permittee's obligations with regard to responding to the reasonable response steps required by this condition.

(e) The instruments used for determining the pressures and flow rates shall comply with Section C – Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated at least once every six (6) months.

D.4.12 Baghouse Parametric Monitoring [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)] [40 CFR 64]

(a) The Permittee shall record the pressure drop across the Baghouse #11, at least once per day, when either of the following processes:

(1) Herman 3 Shakeout, or

(2) Herman 3 Sand Handling

are in operation. When for any one reading, the pressure drop across the baghouse is outside the normal range of 4.0 and 10.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps. 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. Section C – Response to Excursions or Exceedances contains the Permittee's obligations with regard to responding to the reasonable response steps required by this condition.

(b) The instruments 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.4.13 Parametric Monitoring of Sonoperoxone® System or Equivalent System [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)] [40 CFR 64]

(a) Ultra-Sonic Power – Herman 3 Mold Line
The Permittee shall monitor and record the ultra-sonic power of the Sonoperoxone® system or equivalent system used in conjunction with the Herman 3 Mold Line, at least once per day when the Herman 3 Mold Line is in operation. When for any one reading, the ultra-sonic power is less than 1500 W or a minimum established during the latest stack test, the Permittee shall take reasonable response steps. An ultra-sonic power reading that is below the above mentioned minimum is not a deviation from this permit.

(b) Ozone Generator Plasma Voltage – Herman 3 Mold Line
The Permittee shall monitor and record the ozone generator plasma voltage of the Sonoperoxone® system or equivalent system used in conjunction with the Herman 3 Mold Line, at least once per day when the Herman 3 Mold Line is in operation. When for any one reading, the ozone generator plasma voltage is less than 2700 V or a minimum established during the latest stack test, the Permittee shall take reasonable response steps. An ozone generator plasma voltage reading that is below the above mentioned minimum is not a deviation from this permit.

(c) Hydrogen Peroxide Usage – Herman 3 Mold line
The Permittee shall monitor and record the hydrogen peroxide usage of the Sonoperoxone® system or equivalent system used in conjunction with the Herman 3 Mold Line, at least once per day when the Herman 3 Mold Line is in operation. When for any one reading, the hydrogen peroxide is less than 1 gallon per hour of muller operation, or a minimum established during the latest stack test, the Permittee shall take reasonable response steps. A peroxide usage reading that is below the above mentioned minimum is not a deviation from this permit. The instruments used for determining the ultra-sonic power, the ozone generator plasma voltage and the hydrogen peroxide usage 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) Failure to take response steps shall be considered a deviation from this permit. Section C – Response to Excursions or Exceedances contains the Permittee's obligations with regard to responding to the reasonable response steps required by this condition.

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

D.4.14 Record Keeping Requirements

(a) To document compliance with Conditions D.4.1 – BACT Requirements, and D.4.2 – PSD Minor Limits, the Permittee shall maintain records of the amounts of metal and sand throughputs to the Herman 3 Mold Line.

(b) To document compliance with Conditions D.4.1 – BACT Requirements, and D.4.2 – PSD Minor Limits, the Permittee shall maintain records of the combined amount of core and mold sand handled for the:

(1) Herman 2 Sand Handling, and
(2) Herman 3 Sand Handling.

(c) To document compliance with Condition D.4.6 – Continuous Opacity Monitoring and Section C – Opacity, the Permittee shall maintain records of opacity from the continuous

opacity monitor on the Herman 3 Castings Cooling vent (V-12), including raw data and supporting information, for a minimum of five (5) years, and make such records available upon request to IDEM, OAQ.

(d) To document compliance with Condition D.4.10 – Visible Emission Notations, the Permittee shall maintain daily records of visible emission notations of the wet collector #1, wet collector #2, wet collector #4, and baghouse #11 stack exhausts. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g. the process did not operate that day).

(e) To document compliance with Condition D.4.11 – Wet Collector Parametric Monitoring, the Permittee shall maintain the daily records of the pressure drop and flow rate reading across wet collector #1, wet collector #2, and wet collector #4. The Permittee shall include in its daily record when a pressure drop and flow rate reading are not taken and the reason for the lack of a pressure drop and flow rate readings, (e.g. the process did not operate that day).

(f) To document compliance with Condition D.4.12 – Baghouse Parametric Monitoring, the Permittee shall maintain the daily records of the pressure drop across baghouse #11. 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, (e.g. the process did not operate that day).

(g) To document compliance with Condition D.4.13 – Parametric Monitoring of Sonoperoxone® System or Equivalent System, the Permittee shall maintain records of the:

(1) ultra-sonic power,
(2) ozone generator plasma voltage, and
(3) hydrogen peroxide usage of the Sonoperoxone® system

and make such records available upon request to IDEM, OAQ.

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

D.4.15 Reporting Requirements

(a) A quarterly summary of the information to document the compliance status with Condition D.4.1 (a)(1) and (a)(2) – BACT Requirements, and Condition D.4.2 (a) and (b) – PSD Minor Limits, shall be submitted not later than thirty (30) days following the end of each calendar quarter.

(b) A quarterly summary of excess opacity emissions, as defined in 326 IAC 3-5-7, from the continuous monitoring system, shall be submitted not later than thirty (30) days following the end of each calendar quarter.

(c) These reports submitted by the Permittee do require a certification that meets the requirements of 326 IAC 2-7-6(1) by a “responsible official” as defined by 326 IAC 2-7-1(34). Section C - General Reporting Requirements contains the Permittee's obligations with regard to the reporting required by this condition.

**SECTION D.5 FACILITY OPERATION CONDITIONS**

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

(6) **Inclined Shakeout and Sort System (servicing Herman 2 and Herman 3)**

(a) One (1) Inclined Shakeout and Sort System, constructed prior to 1977, with a nominal throughput of 48.5 tons of iron per hour, with particulate emissions captured and controlled by Baghouse #2, exhausting through Stack G.

(b) One (1) vibratory shaker, permitted in 2011, identified as VB1, with a nominal capacity of 48.5 tons iron per hour, with particulate emissions captured and controlled by Baghouse #2, exhausting through Stack G.

(7) **Waste Sand Handling, Screening and Transport System (servicing Herman 2 and Herman 3)**
One (1) Waste Sand Handling, Screening and Transport System, constructed prior to 1977, with a nominal throughput of 20 tons of waste sand per hour.

The Waste Sand Handling, Screening and Transport System consists of a rotary screen process, a magnetic separator, a silo, an elevated bin hopper, and a transport (Dependable) system.

Particulate emissions from the Waste Sand Handling, Screening and Transport system are captured and controlled by Baghouse #9, exhausting through Stack R.

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

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

D.5.1 PSD Minor Limits [326 IAC 2-2] [326 IAC 6-3-2]

(a) Inclined Shakeout and Sort System (Stack G)

(1) The PM emissions from the Inclined Shakeout and Sort system shall be limited to 0.072 pounds per ton of metal.

(2) The $PM_{10}$ emissions from the Inclined Shakeout and Sort system shall be limited to 0.072 pounds per ton of metal.

(b) Waste Sand Handling, Screening and Transport Sand Throughput Limit (Stack R)

(1) The amount of sand throughput to the Waste Sand Handling, Screening and Transport system shall be limited to 112,752 tons of sand per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month.

(2) The PM emissions from the Waste Sand Handling, Screening and Transport system shall be limited to 0.072 pounds per ton of sand.

(3) The $PM_{10}$ emissions from the Waste Sand Handling, Screening and Transport system shall be limited to 0.011 pounds per ton of sand.

Compliance with the limits in (a) and (b) above and the limits specified in Conditions D.1.1, D.2.1, D.3.1, D.6.1 and D.7.2 will render the requirements of 326 IAC 2-2 (PSD) not applicable to permit No. 085-14027-00003 (the former Hot Box Core Making Line #9 installation), and to the Significant Permit Modification No. 085-25675-00003 (Conversion of the Hot Box Core Making Line #9 to Phenolic Urethane Core Making Line #9).

(c) The PM emissions from the Vibratory Shaker shall be limited to 0.188 pounds per ton of iron.

(d) The $PM_{10}$ emissions from the Vibratory Shaker shall be limited to 0.154 pounds per ton of iron.

(e) The amount of metal throughput to the Vibratory Shaker shall be limited to 142,000 tons of metal per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month.

Compliance with the limits listed in (c), (d) & (e) above and the limits specified in Condition D.6.1.2 will restrict the potential to emit from the 2011 modification to add the Vibratory Shaker, and Hose Blast system to less than twenty-five (25) tons of PM per year, and less than fifteen (15) tons of $PM_{10}$ per year. Therefore the requirements of 326 IAC 2-2 (PSD) are not applicable to the 2011 modification to add the Vibratory Shaker, and Hose Blast system, including the unrestricted PTE of the 'fugitive' emissions from these emission units.

D.5.2 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

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

**Compliance Determination Requirements**

D.5.3 Emission Controls Operation [326 IAC 2-7-6(6)]

(a) Baghouse #2 – Inclined Shakeout and Sort System and Vibratory Shaker
The Baghouse #2 for particulate emissions control shall be in operation and control emissions from the Inclined Shakeout and Sort system and/or Vibratory Shaker at all times when the Inclined Shakeout and Sorting system and/or Vibratory Shaker is in operation.

(b) Baghouse #9 – Waste Sand Handling, Screening and Transport System
The Baghouse #9 for particulate emissions control shall be in operation and control emissions from the Waste Sand Transport at all times when the Waste Sand Handling, Screening and Transport system is in operation.

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

D.5.4 Testing Requirements [326 IAC 2-7-6(1),(6)]

(a) In order to demonstrate the compliance status with Condition D.5.1(c), the Permittee shall perform PM testing on the vibratory shaker.

(b) In order to demonstrate the compliance status with Condition D.5.1(d), the Permittee shall perform emissions testing to determine the $PM_{10}$ emissions for the vibratory shaker. $PM_{10}$ includes filterable and condensable PM.

(c) Testing shall be conducted using methods as approved by the Commissioner at least once every every five (5) years for PM and $PM_{10}$, from the date of the last valid compliance demonstration. Testing shall be conducted using the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C - Performance Testing contains the Permittee's obligations with regard to the testing required by this condition.

D.5.5 Broken or Failed Bag Detection [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

(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 emission 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.

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

D.5.6 Visible Emissions Notations [40 CFR 64]

(a) Visible emission notations of the:

(1) Baghouse #2 exhaust stack (Stack G), and
(2) Baghouse #9 exhaust stack (Stack R),

shall be performed once per day during normal daylight operations when exhausting to the atmosphere and when the associated processes are in operation. 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 or Exceedances contains the Permittee's obligations with regard to responding to the reasonable response steps required by this condition.

D.5.7 Baghouse Parametric Monitoring [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)] [40 CFR 64]

(a) Baghouse #2 – Inclined Shakeout and Sort System
The Permittee shall record the pressure drop across Baghouse #2, at least once per day when the associated Inclined Shakeout and Sorting system is in operation when venting to the atmosphere. When for any one reading, the pressure drop across Baghouse #2 is outside the range of 2.0 and 8.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps.

(b) Baghouse #9 – Waste Sand Handling, Screening and Transport
The Permittee shall record the pressure drop across Baghouse #9, at least once per day when the associated Waste Sand Handling, Screening and Transport system is in operation when venting to the atmosphere. When for any one reading, the pressure drop across Baghouse #9 is outside the range of 2.0 and 8.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps.

(c) 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. Section C – Response to Excursions or Exceedances contains the Permittee's obligations with regard to responding to the reasonable response steps required by this condition.

(d) 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 or replaced at least once every six (6) months.

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

D.5.8 Record Keeping Requirements

(a) To document compliance with Condition D.5.1 – PSD Minor Limits, the Permittee shall maintain records of the amount of sand throughput to the Waste Sand Handling, Screening and Transport system and the amount of metal throughput to the Vibratory Shaker.

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(b) To document compliance with Condition D.5.6 – Visible Emission Notations, the Permittee shall maintain daily records of visible emission notations of the baghouse #2 and baghouse #9 stack exhausts. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g. the process did not operate that day).

(c) To document compliance with Condition D.5.7 – Baghouse Parametric Monitoring, the Permittee shall maintain the daily records of the pressure drop across baghouse #2 and baghouse #9. 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, (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 record keeping required by this condition.

### D.5.9 Reporting Requirements

A quarterly summary of the information to document the compliance status with Condition D.5.1(b)(1) and D.5.1(e), shall be submitted not later than thirty (30) days following the end of each calendar quarter. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a “responsible official” as defined by 326 IAC 2-7-1(34). Section C - General Reporting Requirements contains the Permittee's obligations with regard to the reporting required by this condition.

**SECTION D.6 FACILITY OPERATION CONDITIONS**

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

(8) **Shot Blast Machines**

(a) Five (5) Shot Blast Machines:

(1) Three (3) Shot Blast Machines, identified as SB-1, SB-2, and SB-4, each constructed prior to 1977, each with a nominal capacity of 5.0 tons of iron castings per hour.

(2) One (1) Shot Blast Machine, identified as SB-3, constructed in 1981, with a nominal throughput of 5.0 tons of iron castings per hour.

(3) One (1) Shot Blast Machine, permitted in 2006 and modified in 2011 to add a manual blow-off chamber, identified as SB-10, with a nominal capacity of 5 tons of iron castings per hour.

Particulate emissions from these Shot Blast Machines are captured and controlled by Baghouse #3, exhausting through Stack H.

Particulate emissions from the manual blow-off chamber for SB-10 are captured and controlled by a fabric filter control device exhausted internally.

(b) Three (3) Shot Blast Machines:

(1) One (1) Shot Blast Machine, identified as SB-5, constructed prior to 1977, with a nominal throughput of 5.0 tons of iron castings per hour.

(2) One (1) Shot Blast Machine, identified as SB-6, constructed in 1981, with a nominal throughput of 5.0 tons of iron castings per hour.

(3) One (1) Shot Blast Machine, identified as SB-8, constructed in 1988, with a nominal throughput of 8.0 tons of iron castings per hour.

(4) One (1) hose blast operation for Shot Blast #8, permitted in 2011, identified as HB1, with a nominal capacity of 8.0 tons of iron castings per hour.

Particulate emissions from these Shot Blast Machines and the hose blast operation are captured and controlled by Baghouse #16, exhausting through Stack AG.

(c) One (1) Shot Blast Machine, identified as SB-7, constructed in 1978 with a nominal throughput of 6.0 tons of iron castings per hour.

Particulate emissions from this Shot Blast Machine are captured and controlled by Baghouse #6, exhausting through Stack K.

(d) One (1) Shot Blast Machine, identified as SB-9, constructed in 1995 with a nominal throughput of 12.5 tons of iron castings per hour.

Particulate emissions from this Shot Blast Machine are captured and controlled by Baghouse #12, exhausting through Stack X.

(9) **Grinders**

(a) Fourteen (14) Grinders:

(1) Twelve (12) Grinders, identified as GR-1 through GR-4, GR-9, GR-10, GR-29, and GR-30, constructed prior to 1977, each with a nominal throughput of 4.0 tons of iron castings per hour.

(2) Two (2) robotic grinders, constructed in 2009, identified as:

(A) ABB, with a total nominal capacity of 1.0 tons of iron castings per hour, and

(B) FANUC, with a total nominal capacity of 1.5 tons of iron castings per hour.

Particulate emissions from these Grinders are captured and controlled by Baghouse #15, exhausting through Stack AE.

(b) Six (6) Grinders, identified as GR-11 through GR-14, GR-16, and GR-17, constructed prior to 1977, each with a nominal throughput of 4.0 tons of iron castings per hour, with particulate emissions from these Grinders are captured and controlled by Baghouse #16, exhausting through Stack AG.

(c) Eight (8) Grinders, identified as GR-19, GR-20, GR-23, GR-25, GR-26, and GR-34 through GR-36, constructed prior to 1977, each with a nominal throughput of 4.0 tons of iron castings per hour.

Particulate emissions from these Grinders are captured and controlled by Baghouse #6, exhausting through Stack K.

(d) Four (4) Grinders, identified as GR-31 through GR-33; and GR-37, constructed prior to 1977, each with a nominal throughput of 4.0 tons of iron castings per hour.

Particulate emissions from these Grinders are captured and controlled by Baghouse #12, exhausting through Stack X.

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

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

D.6.1 PSD Minor Limits [326 IAC 2-2]

(a) The amount of total finished castings from Shot Blast Machines (SB-1 through SB-9) shall not exceed 112,752 tons of castings finished per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month.

(b) The PM emissions from each Shot Blast Machine (SB-1 through SB-9) shall be limited to 0.5066 pounds per ton of metal finished.

(c) The $PM_{10}$ emissions from each Shot Blast Machine (SB-1 through SB-9) shall be limited to 0.5066 pounds per ton of metal finished.

(d) The lead emissions from each Shot Blast Machine (SB-1 through SB-9) shall be limited to

0.0045 pounds per ton of metal finished.

Compliance with the limits above and the limits specified in Conditions D.1.1, D.2.1, D.3.1, D.5.1(a) & (b) and D.7.2 will restrict the potential to emit from the conversion of the hot box core making line #9 to Phenolic Urethane core making line #9 to less than twenty-five (25) tons of PM per year, less than fifteen (15) tons of $PM_{10}$ per year, and less than 0.6 tons of lead (Pb) per year. Therefore, the requirements of 326 IAC 2-2 (PSD) are not applicable to the conversion of the hot box core making line #9 to Phenolic Urethane core making line #9.

D.6.1.1 PSD Minor Limits [326 IAC 2-2]

(a) The PM emission rate from Shot Blast Machine SB-10 controlled by Baghouse #3 shall not exceed 5.7 pounds per hour.

(b) The $PM_{10}$ emission rate from Shot Blast Machine SB-10 controlled by Baghouse #3 shall not exceed 3.40 pounds per hour.

Compliance with the limits above will restrict the potential to emit from SB-10 to less than twenty-five (25) tons of PM per year and less than fifteen (15) tons of $PM_{10}$ per year. Therefore, the requirements of 326 IAC 2-2 (PSD) are not applicable to SB-10.

D.6.1.2 PSD Minor Limits [326 IAC 2-2]

(a) The amount of total finished castings from the Hose Blast system for Shot Blast Machine SB-8 shall not exceed 16,500 tons of castings finished per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month.

(b) The PM emission rate from the Hose Blast system for Shot Blast Machine SB-8 controlled by Baghouse #16 shall not exceed 0.67 pounds per ton.

(c) The $PM_{10}$ emission rate from the Hose Blast system for Shot Blast Machine SB-8 controlled by Baghouse #16 shall not exceed 0.34 pounds per ton.

(d) The Pb emission rate from the Hose Blast system for Shot Blast Machine SB-8 controlled by Baghouse #16 shall not exceed 0.066 pounds per ton.

Compliance with the limits above and the limits specified in Condition D.5.1(c), (d) & (e) will restrict the potential to emit from the 2011 modification to add the Vibratory Shaker, and Hose Blast system to less than twenty-five (25) tons of PM per year, less than fifteen (15) tons of $PM_{10}$ per year, and less than 0.6 tons of lead (Pb) per year. Therefore the requirements of 326 IAC 2-2 (PSD) are not applicable to the 2011 modification to add the Vibratory Shaker, and Hose Blast system, including the unrestricted PTE of the 'fugitive' emissions from these emission units.

D.6.1.3 PSD Minor Limits [326 IAC 2-2]

(a) The amount of total finished castings from the ABB and FANUC grinders shall not exceed 15,500 tons of castings finished per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month.

(b) The PM emission rate from the ABB and FANUC grinders controlled by Baghouse #16 shall not exceed 0.34 pounds per ton.

(c) The $PM_{10}$ emission rate from the ABB and FANUC grinders controlled by Baghouse #16 shall not exceed 0.34 pounds per ton.

(d) The lead (Pb) emission rate from the ABB and FANUC grinders controlled by Baghouse #16 shall not exceed 0.07 pounds per ton.

Compliance with the limits above and the limits specified in Conditions D.3.2 and D.4.2(h) will restrict the potential to emit from the 2009 modification to add the Klein Transports (Waste Sand Handling), Return Sand Conveyor, and Robotic Grinders to less than twenty-five (25) tons of PM per year, less than fifteen (15) tons of $PM_{10}$ per year, and less than 0.6 tons of lead (Pb) per year. Therefore the requirements of 326 IAC 2-2 (PSD) are not applicable to the 2009 modification to add the Klein Transports (Waste Sand Handling), Return Sand Conveyor, and Robotic Grinders, including the unrestricted PTE of the 'fugitive' emissions from these emission units.

D.6.1.4 PSD Minor Limits [326 IAC 2-2]

(a) The total amount of casting into the SB 10 Blow-Off Chamber shall not exceed 20,000 tons per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month.

(b) The PM emission rate from the SB 10 Blow-Off Chamber controlled by an internally exhausted fabric filter control device shall not exceed 0.605 pounds per ton.

(c) The $PM_{10}$ emission rate from the SB 10 Blow-Off Chamber controlled by an internally exhausted fabric filter control device shall not exceed 1.088 pounds per ton.

(d) The lead (Pb) emission rate from the SB 10 Blow-Off Chamber controlled by an internally exhausted fabric filter control device shall not exceed 0.058 pounds per ton.

Compliance with the above limits and the fugitive emissions will limit the modification to less than twenty-five (25) tons of PM per year, less than fifteen (15) tons of $PM_{10}$ per year, and less than 0.6 tons of lead (Pb) per year and render the requirements of 326 IAC 2-2 (PSD) are not applicable to the 2011 modification.

D.6.2 Particulate Emission Limitation for Manufacturing Processes [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2, the particulate matter (PM) emissions from each process shall not exceed the pounds per hour limitations specified in the table below:

| **Process / Emission Unit** | **P** (ton/hr) | **E** (lb/hr) |
|---|---|---|
| | | |
| Shot Blast Machine SB-7, Grinders GR-19, GR-20, GR-23, GR-25, GR-26, GR-34 - GR-36 (Baghouse 6) | 38 | 42 |
| Shot Blast Machine SB-9, Grinders GR-31 - GR-33, GR-37 (Baghouse 12) | 28.5 | 38.7 |
| Grinders GR-1 - GR-4, GR-9, GR-10, GR-29, GR-30, ABB & FANUC (Baghouse 15) | 34.5 | 41.2 |
| Shot Blast Machines (SB-5, SB-6, & SB-8, Hose Blast for SB-8) Grinders GR-11 - GR-14, GR-16, GR-17 (Baghouse 16) | 38 | 42 |

The pound per hour limitations was calculated with the following equations:

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

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

D.6.3 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan is required for these facilities and their control devices. Section B - Preventive Maintenance Plan contains the Permittee's obligations with regard to the preventive

maintenance plan required by this condition.

**Compliance Determination Requirements**

D.6.4 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.6.1(b), D.6.1.1(a), D.6.1.2(b), D.6.1.3(b), and D.6.2, the Permittee shall perform PM testing on:

(1) Baghouse #3 exhaust stack (Stack H),
(2) Baghouse #6 exhaust stack (Stack K),
(3) Baghouse #12 exhaust stack (Stack X),
(4) Baghouse #15 exhaust stack (Stack AE), and
(5) Baghouse #16 exhaust stack (Stack AG),

when any of the controlled emission units are in operation

(b) In order to demonstrate compliance with Conditions D.6.1(c), D.6.1.1(b), D.6.1.2(c), and D.6.1.3(c), the Permittee shall perform $PM_{10}$ emissions testing on:

(1) Baghouse #3 exhaust stack (Stack H),
(2) Baghouse #6 exhaust stack (Stack K),
(3) Baghouse #12 exhaust stack (Stack X),
(4) Baghouse #15 exhaust stack (Stack AE), and
(5) Baghouse #16 exhaust stack (Stack AG),

when any of the controlled emission units are in operation. $PM_{10}$ includes filterable and condensable PM.

(c) In order to demonstrate the compliance status with Conditions D.6.1(d), D.6.1.2(d) and D.6.1.3(d), the Permittee shall perform Pb testing on:

(1) Baghouse #3 exhaust stack (Stack H),
(2) Baghouse #6 exhaust stack (Stack K),
(3) Baghouse #12 exhaust stack (Stack X),
(4) Baghouse #15 exhaust stack (Stack AE), and
(5) Baghouse #16 exhaust stack (Stack AG),

when any of the controlled emission units are in operation

(d) Testing shall be conducted utilizing methods as approved by the Commissioner at least once every five (5) years from the date of the last valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C – Performance Testing contains the Permittee's obligations with regard to the testing required by this condition.

D.6.5 Emission Controls Operation [326 IAC 2-7-6(6)]

(a) Baghouse #3
The Baghouse #3 for particulate emissions control shall be in operation and control emissions from the Shot Blast Machines, SB-1 through SB-4, and SB-10, at all times that any one of these Shot Blast Machines is in operation.

(b) Baghouse #6

(1) The Baghouse #6 for particulate emissions control shall be in operation and control emissions from the Shot Blast Machine SB-7 at all times that Shot Blast

Machine SB-7 is in operation.

(2) The Baghouse #6 for particulate emissions control shall be in operation and control emissions from the Grinders GR-19, GR-20, GR-23, GR-25, GR-26, and GR-34 through GR-36 at all times that any of these Grinders is in operation.

(c) Baghouse #12

(1) The Baghouse #12 for particulate emissions control shall be in operation and control emissions from the Shot Blast Machine SB-9 all times that Shot Blast Machine SB-9 is in operation.

(2) The Baghouse #12 for particulate emissions control shall be in operation and control emissions from the Grinders GR-31 through GR-33, and GR-37 all times that any of these Grinders is in operation.

(d) Baghouse #15

The Baghouse #15 for particulate emissions control shall be in operation and control emissions from the Grinders GR-1 through GR-4, GR-9, GR-10, GR-29, GR-30, ABB, and FANUC, at all times that any one of these Grinders is in operation.

(e) Baghouse #16

(1) The Baghouse #16 for particulate emissions control shall be in operation and control emissions from the Shot Blast Machines SB-5, SB-6, SB-8, and Hose Blast HB1, at all times that any one of these Shot Blast Machines or the Hose Blast Machine is in operation.

(2) The Baghouse #16 for particulate emissions control shall be in operation and control emissions from the Grinders GR-11 through GR-14, GR-16, GR-17 at all times that any one of these Grinders is in operation.

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

D.6.6 Broken or Failed Bag Detection [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

(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 emission 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.

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

D.6.7 Visible Emissions Notations [40 CFR 64]

(a) Visible emission notations of the:

(1) Baghouse #3 exhaust stack (Stack H),
(2) Baghouse #6 exhaust stack (Stack K),
(3) Baghouse #12 exhaust stack (Stack X),
(4) Baghouse #15 exhaust stack (Stack AE), and
(5) Baghouse #16 exhaust stack (Stack AG),

shall be performed once per day during normal daylight operations when exhausting to the atmosphere and when the associated processes are in operation. 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 or Exceedances contains the Permittee's obligations with regard to responding to the reasonable response steps required by this condition.

D.6.8 Baghouse Parametric Monitoring [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)] [40 CFR 64]

(a) Baghouse #3
The Permittee shall record the pressure drop across Baghouse #3, at least once per day, when the associated Shot Blast Machines are in operation when venting to the atmosphere. When for any one reading, the pressure drop across Baghouse #3 is outside the range of 2.0 and 8.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps.

(b) Baghouse #6
The Permittee shall record the pressure drop across Baghouse #6, at least once per day when the associated Shot Blast Machines and Grinders are in operation when venting to the atmosphere. When for any one reading, the pressure drop across Baghouse #6 is outside the range of 2.0 and 8.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps.

(c) Baghouse #12
The Permittee shall record the pressure drop across Baghouse #12, at least once per day when the associated Shot Blast Machines and Grinders are in operation when venting to the atmosphere. When for any one reading, the pressure drop across Baghouse #12 is outside the range of 2.0 and 8.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps.

(d) Baghouse #15
The Permittee shall record the pressure drop across Baghouse #15, at least once per day when the associated Grinders are in operation when venting to the atmosphere. When for any one reading, the pressure drop across Baghouse #15 is outside the range of 2.0 and 8.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps.

(e) Baghouse #16
The Permittee shall record the pressure drop across Baghouse #16, at least once per day, when the associated Shot Blast Machines and Grinders are in operation when venting to the atmosphere. When for any one reading, the pressure drop across Baghouse #16 is outside the range of 2.0 and 8.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps.

(f) SB-10 blow-off chamber fabric filter control device
The Permittee shall record the pressure drop across SB-10 blow-off chamber fabric filter control device, at least once per day, when the associated blow-off chamber is in operation. When for any one reading, the pressure drop across SB-10 blow-off chamber fabric filter control device is outside the range of 0.1 and 6.1 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps.

(g) 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. Section C – Response to Excursions or Exceedances contains the Permittee's obligations with regard to responding to the reasonable response steps required by this condition.

(h) The instruments 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 or replaced at least once every six (6) months.

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

D.6.9 Record Keeping Requirements

(a) To document the compliance status with Condition D.6.1(a) – PSD Minor Limits, the Permittee shall maintain records of the amount of cumulative total finished castings from each of the following Shot Blast Machines: SB-1 through SB-9.

(b) To document compliance status with Condition D.6.1.2(a) – PSD Minor Limits, the Permittee shall maintain records of the amount of total finished castings from the Hose Blast system for Shot Blast Machine SB-8.

(c) To document compliance status with conditions D.6.1.3(a) – PSD Minor Limits, the Permittee shall maintain records of the total finished casting from the ABB and FANUC grinders.

(d) To document the compliance status with Condition D.6.1.4(a) - PSD Minor Limit, the Permittee shall maintain monthly records of casting throughput to the SB 10 Blow-Off Chamber.

(e) To document the compliance status with Condition D.6.6 – Visible Emission Notations, the Permittee shall maintain daily records of visible emission notations of the baghouse #3, baghouse #6, baghouse #12, baghouse #15 and baghouse #16 stack exhausts. The Permittee shall include in its daily record when a visible emission notation is not taken

and the reason for the lack of visible emission notation (e.g. the process did not operate that day).

(f) To document the compliance status with Condition D.6.7– Baghouse Parametric Monitoring, the Permittee shall maintain the daily records of the pressure drop across baghouse #3, baghouse #6, baghouse #12, baghouse #15 and baghouse #16 and the blow-off chamber fabric filter control device. 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, (e.g. the process did not operate that day).

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

D.6.10 Reporting Requirements

A quarterly summary of the information to document the compliance status with Condition D.6.1(a) – PSD Minor Limits, Condition D.6.1.2(a) – PSD Minor Limits, Condition D.6.1.3(a) – PSD Minor Limits, and Condition D.6.1.4(a) - PSD Minor Limits shall be submitted within thirty (30) days following the end of each calendar quarter. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a “responsible official” as defined by 326 IAC 2-7-1(34). Section C - General Reporting Requirements contains the Permittee's obligations with regard to the reporting required by this condition.

**SECTION D.7 FACILITY OPERATION CONDITIONS**

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

(11) **Phenolic Urethane Core Making Line #9 (also referred to as Core Making Line #9)**

One (1) Phenolic Urethane Core Making Line #9, constructed in 2002 as a hotbox process and modified in 2008 to be a phenolic process, with a nominal sand throughput of 18.0 tons of sand per hour. The Phenolic Urethane Core Making line #9 consists of the following emission units:

(a) One (1) Core Sand Handling Process, with a nominal sand throughput of 18.0 tons of sand per hour:

(1) One (1) Northeast (NE) Sand Silo, constructed prior to 1977, with an integral bin vent to control particulate emissions when loading.

(2) One (1) enclosed Pneumatic Sand Transporter #1, constructed in 1996, for transferring sand from the Northeast (NE) Sand Silo to the Sand Hopper #9.

(3) One (1) Sand Hopper #9, constructed in 2002, with particulate emissions captured and controlled by Baghouse Z, exhausting through Stack Z.

(4) One (1) electric Sand Heater #9, constructed in 2002, with particulate emissions captured and controlled by Baghouse Z, exhausting through Stack Z.

(b) One (1) Sand Mixer #9, constructed in 2002 and modified in 2008, with a nominal throughput of 18 tons of sand per hour.
Emissions from the Sand Mixer #9 are uncontrolled.

(c) Three (3) Core Machines, constructed in 2002 and modified in 2008, three (3) Core Wash Dip Tanks and one (1) natural gas fired Core Oven:

(1) One (1) Phenolic Urethane Core Machine #31 and its corresponding Core Wash Dip Tank #31 and natural gas fired Core Oven #10, each with a nominal throughput of 4.5 tons of sand per hour.

Emissions from the Phenolic Urethane Core Machine #31 are uncontrolled.
Emissions from the Core Wash Dip Tank #31 are uncontrolled.

(2) One (1) Phenolic Urethane Core Machine #32, and its corresponding Core Wash Dip Tank #32 and natural gas fired Core Oven #10, each with a nominal throughput of 4.5 tons of sand per hour.

Emissions from the Phenolic Urethane Core Machine #32 are uncontrolled.
Emissions from the Core Wash Dip Tank #32 are uncontrolled.

(3) One (1) Phenolic Urethane Core Machine #33, and its corresponding Core Wash Dip Tank #33 and natural gas fired Core Oven #10, each with a nominal throughput of 4.5 tons of sand per hour.

Emissions from the Phenolic Urethane Core Machine #33 are uncontrolled.
Emissions from the Core Wash Dip Tank #33 are uncontrolled.

The natural gas fired Core Oven #10 has a maximum heat input capacity of 6.0 million British thermal units (MMBtu) per hour.

(d) One (1) electric Phenolic Urethane Core Oven #5.

Emissions from the Phenolic Urethane Core Oven #5 are uncontrolled.

(e) One (1) natural gas fired Core Oven #11, constructed in 2011, has a maximum heat input capacity of 3.0 million British thermal units (MMBtu) per hour.

Emissions from the Phenolic Urethane Core Oven #11 are uncontrolled.

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

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

D.7.1 VOC Minor Limits [326 IAC 2-2] [326 IAC 8-1-6]

(a) The amount of resin usage in the Phenolic Urethane Core Making Line #9 operations shall not exceed 295,000 pounds per twelve (12) consecutive month period, with compliance determined at the end of each month.

(b) The amount of catalyst usage in the Phenolic Urethane Core Making Line #9 operations shall not exceed 32,935 pounds per twelve (12) consecutive month period, with compliance determined at the end of the month.

(c) The VOC emissions from the Phenolic Urethane Core Making Operation shall not exceed 0.02904 pounds of noncatalyst VOC per pounds of resin.

Compliance with these limits, combined with potential VOC emissions from the core box cleaner, release agent, core wash, and core oven #10 will restrict the VOC emissions from the the Phenolic Urethane Core Making Line #9 to less than 25 tons per year. Therefore, the requirements of 326 IAC 8-1-6 (New Facilities, General Reduction requirements) and 326 IAC 2-2 (PSD) are not applicable to the Phenolic Urethane Core Making Line #9.

D.7.2 PSD Minor Limits [326 IAC 2-2] [326 IAC 6-3-2]

(a) The amount of sand used in the Phenolic Urethane Core Making Line #9 shall not exceed 12,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(b) Total PM emissions from the Phenolic Urethane Core Making Line #9 shall not exceed 0.33 pounds per ton of sand.

(c) $PM_{10}$ Limit (Stack Z)
Total $PM_{10}$ emissions from the Phenolic Urethane Core Making Line #9 shall not exceed 0.065 pound per ton of sand.

Compliance with these limits will restrict the potential to emit from this modification to less than twenty-five (25) tons of PM per year, less than fifteen (15) tons of $PM_{10}$ per year. Therefore, the requirements of 326 IAC 8-1-6 (New Facilities, General Reduction requirements) and 326 IAC 2-2 (PSD) are not applicable to the Phenolic Urethane Core Making Line #9.

D.7.3 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive 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.7.4 Emission Controls Operation

(a) The Northeast (NE) Sand Silo's integrated bin vent for particulate emissions control shall be in operation at all times that the Northeast (NE) Sand Silo is being loaded.

(b) The Baghouse Z for particulate emissions control shall be in operation at all times that any of the following:

(1) Sand Hopper #9, or
(2) Sand Heater #9,
are in operation.

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

D.7.5 Testing Requirements [326 IAC 2-7-6(1),(6)] [326 IAC 2-1.1-11]

(a) In order to demonstrate the compliance status with Condition D.7.1, the Permittee shall perform VOC testing for Phenolic Urethane Core Making Line #9.

(b) In order to demonstrate the compliance status with Conditions D.7.2, the Permittee shall perform PM testing on the stack exhaust for Baghouse Z when Sand Hopper #9 and Sand Heater #9 are in operation.

(c) In order to demonstrate the compliance status with Condition D.7.2, the Permittee shall perform emissions testing on the stack exhaust for Baghouse Z when Sand Hopper #9 and Sand Heater #9 are in operation to determine the $PM_{10}$ emissions for Sand Hopper #9 and Sand Heater #9. $PM_{10}$ includes filterable and condensable PM.

(d) Testing shall be conducted utilizing methods as approved by the Commissioner at least once every five (5) years from the date of the last valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C – Performance Testing contains the Permittee's obligations with regard to the testing required by this condition.

D.7.6 Broken or Failed Bag Detection [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

(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 emission 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.

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

D.7.7 Visible Emissions Notations

(a) Visible emission notations of the Baghouse Z exhaust stack (Stack Z) shall be performed once per day during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.

(b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

(c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

(d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

(e) If abnormal emissions are observed, the Permittee shall take reasonable response steps. Observation of abnormal emissions that do not violate an applicable opacity limit is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit. Section C – Response to Excursions or Exceedances contains the Permittee's obligations with regard to responding to the reasonable response steps required by this condition.

D.7.8 Baghouse Parametric Monitoring [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

(a) The Permittee shall record the pressure drop across the Baghouse Z, at least once per day, when the following are in operation:

(1) Sand Hopper #9, and/or
(2) Sand Heater #9.

When for any one reading, the pressure drop across the baghouse is outside the normal range of 3.0 and 9.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps. 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. Section C – Response to Excursions or Exceedances contains the Permittee's obligations with regard to responding to the reasonable response steps required by this condition.

(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 or replaced at least once every six (6) months.

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

D.7.9 Record Keeping Requirements

(a) To document the compliance status with Condition D.7.1, the Permittee shall maintain monthly records of the resin and catalyst usage for the Phenolic urethane Core Making Line #9. The Permittee shall keep records of suppliers' data sheets and material safety data sheets (MSDS) necessary to verify the VOC contents of the resin, core wash, release agent and core box cleaner used.

(b) To document the compliance status with D.7.2(a) – PSD Minor Limits, the Permittee shall maintain records of the amount of sand input to the Sand Mixer #9 on a monthly basis.

(c) To document the compliance status with Condition D.7.7, the Permittee shall maintain daily records of visible emission notations of the Baghouse Z stack exhaust. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g. the process did not operate that day).

(d) To document the compliance status with Condition D.7.8, the Permittee shall maintain the daily records of the pressure drop across Baghouse Z. 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, (e.g. the process did not operate that day).

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

D.7.10 Reporting Requirements

A quarterly summary of the information to document the compliance status with Condition D.7.1 (a) and (b) – VOC Minor Limits, and D.7.2(a) - PSD Minor Limits, shall be submitted not later than thirty (30) days following the end of each calendar quarter. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a “responsible official” as defined by 326 IAC 2-7-1(34). Section C - General Reporting Requirements contains the Permittee's obligations with regard to the reporting required by this condition.

**SECTION D.8 FACILITY OPERATION CONDITIONS**

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

(12) **Phenolic Urethane Core Making Line #1**
One (1) Phenolic Urethane Core Making Line #1, with a nominal sand throughput of 7.0 tons of sand per hour. The Phenolic Urethane Core Making Line #1 consists of the following emission units:

(a) One (1) Core Sand Handling Process, with a nominal sand throughput of 7.0 tons of sand per hour:

(1) One (1) South (S) Sand Silo, constructed prior to 1977, with an integral bin vent to control particulate emissions when loading.

(2) One (1) enclosed Pneumatic Sand Transporter #2, constructed in 1996, for transferring sand from the South (S) Sand Silo to the Phenolic Urethane Core Sand Hopper #1.

(3) One (1) Phenolic Urethane Core Sand Hopper #1, constructed in 1989, with particulate emissions controlled by Baghouse Q, exhausting through Stack Q.

(4) One (1) electric Phenolic Urethane Sand Heater #1, constructed in 1989, for heating sand, with particulate emissions controlled by Baghouse Q, exhausting through Stack Q.

(b) One (1) Phenolic Urethane Core Sand Mixer #1, constructed in 1989, with a nominal throughput of 7.0 tons of sand per hour and 0.185 pounds of VOC (from resin) per ton of sand.

Emissions from the Phenolic Urethane Core Sand Mixer #1 are uncontrolled.

(c) Five (5) Core Machines, five (5) Core Wash Dip Tanks, and three (3) natural gas fired Core Ovens

(1) One (1) Phenolic Urethane Core Machine #15, constructed in 1986 and modified to incorporate a larger blow plate in 2011, and its corresponding Core Wash Dip Tank #15 and natural gas fired Core Oven #1, constructed in 1986, each with a nominal throughput of 7.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #15 are uncontrolled.

(2) One (1) Phenolic Urethane Core Machine #16, constructed in 1986 and modified to incorporate a larger blow plate in 2011, and its corresponding Core Wash Dip Tank #16 and natural gas fired Core Oven #1, each with a nominal throughput of 7.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #16 are uncontrolled.

(3) One (1) Phenolic Urethane Core Machine #17, constructed in 1988, and its corresponding Core Wash Dip Tank #17 and natural gas fired Core Oven #17, each with a nominal throughput of 7.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #17 are uncontrolled.

(4) One (1) Phenolic Urethane Core Machine #18, constructed in 1989, and its corresponding Core Wash Dip Tank #18 and natural gas fired Core Oven #2, each with a nominal throughput of 7.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #18 are uncontrolled.

(5) One (1) Phenolic Urethane Core Machine #19, constructed in 1989, and its corresponding Core Wash Dip Tank #19 and natural gas fired Core Oven #2, each with a nominal throughput of 7.0 tons sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #19 are uncontrolled.

Each natural gas fired Core Oven on Phenolic Urethane Core Making Line #1 has a maximum heat input capacity of 2.0 million British thermal units (Btu) per hour.

The catalyst used is Dimethylisopropylamine (DMIPA) or an equivalent, non-HAP containing catalyst.

The VOC emissions from the catalyst captured at the core box of the Phenolic Urethane Core Machine #15, Phenolic Urethane Core Machine #16, Phenolic Urethane Core Machine #17, Phenolic Urethane Core Machine #18, and Phenolic Urethane Core Machine #19 are controlled by Acid Scrubber AF, exhausting through Stack AF.

(13) **Phenolic Urethane Core Making Line #2**
One (1) Phenolic Urethane Core Making Line #2, with a nominal sand throughput of 3.0 tons of sand per hour. The Phenolic Urethane Core Making Line #2 consists of the following emission units:

(a) One (1) Core Sand Handling Process, with a nominal sand throughput of 3.0 tons of sand per hour:

(1) One (1) South (S) Sand Silo, constructed prior to 1977, with an integral bin vent to control particulate emissions when loading.

(2) One (1) enclosed Pneumatic Sand Transporter #2, constructed in 1996, for transferring sand from the South (S) Sand Silo to the Phenolic Urethane Core Sand Hopper #1.

(3) One (1) Phenolic Urethane Core Sand Hopper #1, constructed in 1989, with particulate emissions controlled by Baghouse Q, exhausting through Stack Q.

(b) One (1) Phenolic Urethane Core Sand Mixer #2, constructed in 1987, with a nominal throughput of 3.0 tons of sand per hour and 0.185 pounds of VOC (from resin) per ton of sand.

Emissions from the Phenolic Urethane Core Sand Mixer #2 are uncontrolled.

(c) Five (5) Core Machines, five (5) Core Wash Dip Tanks, and one (1) portable electric Core Oven

(1) One (1) Phenolic Urethane Core Machine #8, constructed in 1968, and its corresponding Core Wash Dip Tank #8 and portable electric Core Oven #1, each with a nominal throughput of 3.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #8 are uncontrolled.

(2) One (1) Phenolic Urethane Core Machine #9, constructed in 1968, and its corresponding Core Wash Dip Tank #9 and portable electric Core Oven #1, each with a nominal throughput of 3.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #9 are uncontrolled.

(3) One (1) Phenolic Urethane Core Machine #12, constructed in 1978, and its corresponding Core Wash Dip Tank #12 and portable electric Core Oven #1, each with a nominal throughput of 3.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #12 are uncontrolled.

(4) One (1) Phenolic Urethane Core Machine #13, constructed in 1979, and its corresponding Core Wash Dip Tank #13 and portable electric Core Oven #1, each with a nominal throughput of 3.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #13 are uncontrolled.

(5) One (1) Phenolic Urethane Core Machine #14, constructed in 1992, and its corresponding Core Wash Dip Tank #14 and portable electric Core Oven #1, each with a nominal throughput of 3.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #14 are uncontrolled.

The catalyst used is Dimethylisopropylamine (DMIPA) or an equivalent, non-HAP containing catalyst.

The VOC emissions from the catalyst captured at the core box of the Phenolic Urethane Core Machine #8, Phenolic Urethane Core Machine #9, Phenolic Urethane Core Machine #12, Phenolic Urethane Core Machine #13, and Phenolic Urethane Core Machine #14 are controlled by Acid Scrubber AF, exhausting through Stack AF.

(14) **Phenolic Urethane Core Making Line #3**
One (1) Phenolic Urethane Core Making Line #3, with a nominal sand throughput of 7.0 tons of sand per hour. The Phenolic Urethane Core Making Line #3 consists of the following emission units:

(a) One (1) Core Sand Handling Process, with a nominal sand throughput of 7.0 tons of sand per hour:

(1) One (1) South (S) Sand Silo, constructed prior to 1977, with an integral bin vent to control particulate emissions when loading.

(2) One (1) enclosed Pneumatic Sand Transporter #2, constructed in 1996, for

transferring sand from the South (S) Sand Silo to the Phenolic Urethane Core Sand Hopper #3.

(3) One (1) Phenolic Urethane Core Sand Hopper #3, constructed in 1980:

The particulate emissions from the Phenolic Urethane Core Sand Hopper #3 are captured and controlled by Baghouse U, exhausting through Stack U.

(4) One (1) electric Phenolic Urethane Sand Heater #3, constructed in 1980.

The particulate emissions from the Phenolic Urethane Sand Heater #3 are captured and controlled by Baghouse U, exhausting through Stack U.

(b) One (1) Phenolic Urethane Core Sand Mixer #3, constructed in 1980, with a nominal throughput of 7.0 tons of sand per hour and 0.185 pounds of VOC (from resin) per ton of sand.

Emissions from the Phenolic Urethane Core Sand Mixer #3 are uncontrolled.

(c) Three (3) Core Machines, three (3) Core Wash Dip Tanks, and two (2) natural gas fired Core Ovens

(1) One (1) Phenolic Urethane Core Machine #2, constructed in 1982, and its corresponding Core Wash Dip Tank #2 and natural gas fired Core Oven #3, each with a nominal throughput of 7.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #2 are uncontrolled.

(2) One (1) Phenolic Urethane Core Machine #4, constructed in 1981, and its corresponding Core Wash Dip Tank #4 and natural gas fired Core Oven #4, each with a nominal throughput of 7.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #4 are uncontrolled.

(3) One (1) Phenolic Urethane Core Machine #5, constructed in 1968, and its corresponding Core Wash Dip Tank #5 and natural gas fired Core Oven #4, each with a nominal throughput of 7.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #5 are uncontrolled.

Each natural gas fired Core Oven on Phenolic Urethane Core Making Line #3 has a maximum heat input capacity of 2.0 million British thermal units (Btu) per hour.

The catalyst used is Dimethylisopropylamine (DMIPA) or an equivalent, non-HAP containing catalyst.

The VOC emissions from the catalyst captured at the core box of the Phenolic Urethane Core Machine #2, Phenolic Urethane Core Machine #4, and Phenolic Urethane Core Machine #5 are controlled by Acid Scrubber AF, exhausting through Stack AF.

(15) **Phenolic Urethane Core Making Line #4**
One (1) Phenolic Urethane Core Making Line #4, with a nominal sand throughput of 7.0 tons of

sand per hour. The Phenolic Urethane Core Making Line #4 consists of the following emission units:

(a) One (1) Core Sand Handling Process, with a nominal sand throughput of 7.0 tons of sand per hour:

(1) One (1) South (S) Sand Silo, constructed prior to 1977, with an integral bin vent to control particulate emissions when loading.

(2) One (1) enclosed Pneumatic Sand Transporter #2, constructed in 1996, for transferring sand from the South (S) Sand Silo to the Phenolic Urethane Core Sand Hopper #4.

(3) One (1) Phenolic Urethane Core Sand Hopper #4, constructed in 1986.

The particulate emissions from the Phenolic Urethane Core Sand Hopper #4 are captured and controlled by Baghouse U, exhausting through Stack U.

(4) One (1) electric Phenolic Urethane Sand Heater #4, constructed in 1986:

The particulate emissions from the Phenolic Urethane Sand Heater #4 are captured and controlled by Baghouse U, exhausting through Stack U.

(b) One (1) Phenolic Urethane Core Sand Mixer #4, constructed in 1986, with a nominal throughput of 7.0 tons of sand per hour and 0.185 pounds of VOC (from resin) per ton of sand.

Emissions from the Phenolic Urethane Core Sand Mixer #4 are uncontrolled.

(c) Two (2) Core Machines, one (1) Core Wash Dip Tank, and two (2) natural gas fired Core Ovens

(1) One (1) Phenolic Urethane Core Machine #7, constructed in 1986 and modified to incorporate a larger blow plate in 2011, with a nominal throughput of 7.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

(2) One (1) Phenolic Urethane Core Machine #25, constructed in 1993, that contains two (2) core boxes that cannot be operated simultaneously due to having only one blow head for blowing sand into the box, and its corresponding Core Wash Dip Tank #25, natural gas fired Core Oven #8, and natural gas fired Core Oven #25, each with a nominal throughput of 7.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #25 are uncontrolled.

(A) The natural gas fired Core Oven #8 has a maximum heat input capacity of at 2.4 British thermal units (Btu) per hour.

(B) The natural gas fired Core Oven #25 has a maximum heat input capacity of at 800,000 British thermal units (Btu) per hour.

The catalyst used is Dimethylisopropylamine (DMIPA) or an equivalent, non-HAP containing catalyst.

The VOC emissions from the catalyst captured at the core box of the Phenolic Urethane Core Machine #7 and Phenolic Urethane Core Machine #25 are controlled by Acid Scrubber AF, exhausting through Stack AF.

(16) **Phenolic Urethane Core Making Line #5**
One (1) Phenolic Urethane Core Making Line #5, with a nominal sand throughput of 5.0 tons of sand per hour. The Phenolic Urethane Core Making Line #5 consists of the following emission units:

(a) One (1) Core Sand Handling Process, with a nominal sand throughput of 5.0 tons of sand per hour:

(1) One (1) South (S) Sand Silo, constructed prior to 1977, with an integral bin vent to control particulate emissions when loading.

(2) One (1) enclosed Pneumatic Sand Transporter #2, constructed in 1996, for transferring sand from the South (S) Sand Silo to the Phenolic Urethane Core Sand Hopper #3.

(3) One (1) Phenolic Urethane Core Sand Hopper #3, constructed in 1980:

The particulate emissions from the Phenolic Urethane Core Sand Hopper #3 are captured and controlled by Baghouse U, exhausting through Stack U.

(4) One (1) natural gas fired Phenolic Urethane Sand Heater #5, constructed in 1992, with a maximum heat input capacity of 192,000 British thermal units (Btu) per hour.

The particulate emissions from the Phenolic Urethane Sand Heater #5 are captured and controlled by Baghouse Z, exhausting through Stack Z.

(b) One (1) Phenolic Urethane Core Sand Mixer #5, constructed in 1992, with a nominal throughput of 5.0 tons of core sand per hour and 0.185 pounds of VOC (from resin) per ton of sand.

Emissions from the Phenolic Urethane Core Sand Mixer #5 are uncontrolled.

(c) Three (3) Core Machines, three (3) Core Wash Dip Tanks, and one (1) natural gas fired Core Oven

(1) One (1) Phenolic Urethane Core Machine #21, constructed in 1992, and its corresponding Core Wash Dip Tank #21 and natural gas fired Core Oven #9, each with a nominal throughput of 5.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #21 are uncontrolled.

(2) One (1) Phenolic Urethane Core Machine #22, constructed in 1992, and its corresponding Core Wash Dip Tank #22 and natural gas fired Core Oven #9, each with a nominal throughput of 5.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #22 are uncontrolled.

(3) One (1) Phenolic Urethane Core Machine #28, constructed in 1998, and its

corresponding Core Wash Dip Tank #28 and natural gas fired Core Oven #9, each with a nominal throughput of 5.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #28 are uncontrolled.

The natural gas fired Core Oven #9 on Phenolic Urethane Core Making Line #5 has a maximum heat input capacity of 2.4 million British thermal units (Btu) per hour.

The catalyst used is Dimethylisopropylamine (DMIPA) or an equivalent, non-HAP containing catalyst.

The VOC emissions from the catalyst captured at the core box of the Phenolic Urethane Core Machine #21, Phenolic Urethane Core Machine #22, and Phenolic Urethane Core Machine #28 are controlled by Acid Scrubber AF, exhausting through Stack AF.

(17) **Phenolic Urethane Core Making Line #8**
One (1) Phenolic Urethane Core Making Line #8, with a nominal sand throughput of 5.0 tons of sand per hour. The Phenolic Urethane Core Making Line #8 consists of the following emission units:

(a) One (1) Core Sand Handling Process, with a nominal sand throughput of 5.0 tons of sand per hour:

(1) One (1) Northeast (NE) Sand Silo, constructed prior to 1977, with an integral bin vent to control particulate emissions when loading.

(2) One (1) enclosed Pneumatic Sand Transporter #1, constructed in 1996, for transferring sand from the Northeast (NE) Sand Silo to the Phenolic Urethane Core Sand Hopper #8.

(3) One (1) Phenolic Urethane Core Sand Hopper #8, constructed in 1997:

The particulate emissions from the Phenolic Urethane Core Sand Hopper #8 are captured and controlled by Baghouse Z, exhausting through Stack Z.

(4) One (1) natural gas fired Phenolic Urethane Sand Heater #8, constructed in 1997, with a maximum heat input capacity of 192,000 British thermal units (Btu) per hour.

The particulate emissions from the Phenolic Urethane Sand Heater #8 are captured and controlled by Baghouse Z, exhausts through Stack Z.

(b) One (1) Phenolic Urethane Core Sand Mixer #8, constructed in 1997, with a nominal throughput of 5.0 tons of core sand per hour and 0.185 pounds of VOC (from resin) per ton of sand.

Emissions from the Phenolic Urethane Core Sand Mixer #8 are uncontrolled.

(c) Two (2) Core Machines, two (2) Core Wash Dip Tank, and one (1) natural gas fired Core Oven

(1) One (1) Phenolic Urethane Core Machine #1, constructed in 1982, and its corresponding Core Wash Dip Tank #1 and natural gas fired Core Oven #27, each with a nominal throughput of 7.0 tons of sand per hour, 0.541 pounds of

VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #1 are uncontrolled.

(2) One (1) Phenolic Urethane Core Machine #27, constructed in 1996, and its corresponding Core Wash Dip Tank #27 and natural gas fired Core Oven #27, each with a nominal throughput of 5.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #27 are uncontrolled.

The natural gas fired Core Oven #27 has a maximum heat input capacity of 1.6 million British thermal units (Btu) per hour.

The catalyst used is Dimethylisopropylamine (DMIPA) or an equivalent, non-HAP containing catalyst.

The VOC emissions from the catalyst captured at the core box of Phenolic Urethane Core Machine #1 and Phenolic Urethane Core Machine #27 are controlled by Acid Scrubber AF, exhausting through Stack AF.

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

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

D.8.1 BACT Requirements [326 IAC 2-2] [326 IAC 8-1-6]

Pursuant to 326 IAC 2-2 (PSD) and 326 IAC 8-1-6 (New Facilities General Reduction Requirements), the following requirements shall apply:

(a) Sand Throughput Limit

(1) The amount of sand throughput to the Phenolic Urethane Core Making Line #1 shall not exceed 17,922 tons per 12 consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month.

(2) The amount of sand throughput to the Phenolic Urethane Core Making Line #2 shall not exceed 4,656 tons per 12 consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month.

(3) The amount of sand throughput to the Phenolic Urethane Core Making Line #3 shall not exceed 23,200 tons per 12 consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month.

(4) The amount of sand throughput to the Phenolic Urethane Core Making Line #4 shall not exceed 12,910 tons per 12 consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month.

(5) The amount of sand throughput to the Phenolic Urethane Core Making Line #5 shall not exceed 2,383 tons per 12 consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month.

(6) The amount of sand throughput to the Phenolic Urethane Core Making Line #8 shall not exceed 6,350 tons per 12 consecutive month period, rolled on a monthly

basis, with compliance determined at the end of each month.

(b) Mixers
The VOC emissions from each of the following mixers shall not exceed 0.185 pounds per ton of sand:

(1) Phenolic Urethane Core Sand Mixer #1,
(2) Phenolic Urethane Core Sand Mixer #2,
(3) Phenolic Urethane Core Sand Mixer #3,
(4) Phenolic Urethane Core Sand Mixer #4,
(5) Phenolic Urethane Core Sand Mixer #5, and
(6) Phenolic Urethane Core Sand Mixer #8.

(c) Core Machines

(1) The VOC emissions from the catalyst (DMIPA) captured at the following core machines shall be controlled by Acid Scrubber AF:

(A) Phenolic Urethane Core Making Line #1
Phenolic Urethane Core Machine #15, Phenolic Urethane Core Machine #16, Phenolic Urethane Core Machine #17, Phenolic Urethane Core Machine #18, and Phenolic Urethane Core Machine #19

(B) Phenolic Urethane Core Making Line #2
Phenolic Urethane Core Machine #8, Phenolic Urethane Core Machine #9, Phenolic Urethane Core Machine #12, Phenolic Urethane Core Machine #13, and Phenolic Urethane Core Machine #14

(C) Phenolic Urethane Core Making Line #3
Phenolic Urethane Core Machine #2, Phenolic Urethane Core Machine #4, and Phenolic Urethane Core Machine #5

(D) Phenolic Urethane Core Making Line #4
Phenolic Urethane Core Machine #7 and Phenolic Urethane Core Machine #25

(E) Phenolic Urethane Core Making Line #5
Phenolic Urethane Core Machine #21, Phenolic Urethane Core Machine #22, and Phenolic Urethane Core Machine #28

(F) Phenolic Urethane Core Making Line #8
Phenolic Urethane Core Machine #1, and Phenolic Urethane Core Machine #27

The catalyst capture efficiency of Acid Scrubber AF shall be at least 89.3%.
The catalyst control efficiency of Acid Scrubber AF shall be at least 99%.
The overall catalyst control efficiency of Acid Scrubber AF shall be at least 88.4%.

(2) The VOC emissions from the amine catalysts (after the Acid Scrubber AF) shall not exceed 0.319 pounds per ton of sand.

(3) The VOC content of the core wash shall be limited to less than 0.12 pounds per gallon. The amount of annual usage of core wash shall not exceed 117,260 gallons per twelve (12) consecutive month period with compliance determined at the end of each month. These usage limits are required to limit the potential to

emit of VOC to less than 0.20 pounds per ton of sand.

(4) The VOC emissions from the core machines resins shall not exceed 0.541 pounds per ton of sand.

(5) The VOC content of the core machines cleaner shall be limited to less than 8.17 pounds per gallon. The amount of annual usage of core machines cleaner shall not exceed 1188 gallons per twelve (12) consecutive month period with compliance determined at the end of each month. These usage limits are required to limit the potential to emit of VOC to less than 0.144 pounds per ton of sand.

(6) The VOC content of the core release agent shall be limited to less than 6.15 pounds per gallon. The amount of annual usage of core release agent shall not exceed 1150 gallons per twelve (12) consecutive month period with compliance determined at the end of each month. These usage limits are required to limit the potential to emit of VOC to less than 0.105 pounds per ton of sand.

D.8.2 Particulate Emission Limitation [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2, the particulate matter (PM) emissions from each process shall not exceed the pounds per hour limitations specified in the table below:

| **Process / Emission Unit** | **P** (ton/hr) | **E** (lb/hr) | **Equation Used** |
|---|---|---|---|
| Northeast (NE) Sand Silo (Bin Vent) | 38.7 | 42.2 | (b) |
| South (S) Sand Silo (Bin Vent) | 35.0 | 41.3 | (b) |
| Pneumatic Sand Transporter #1 | 38.7 | 42.2 | (b) |
| Pneumatic Sand Transporter #2 | 35.0 | 41.3 | (b) |
| Phenolic Urethane Core Sand Hopper #1, Sand Heater #1, Large Core Sand Weigh Hopper, Hopper #10 and Heater #10 (Baghouse Q) | 55 | 45.4 | (b) |
| Phenolic Urethane Core Sand Hoppers #3 and #4, Heaters #3 and #4 and Air Set Core Sand Hopper #8 (Baghouse U) | 18.0 | 28.4 | (a) |
| Sand Hopper #9, Sand Heater #9, Phenolic Urethane Core Sand Hopper #8, Heater #5 & #8 (Baghouse Z) | 5.0 | 12.1 | (a) |
| Phenolic Urethane Core Sand Mixer #1 | 7.0 | 15.1 | (a) |
| Phenolic Urethane Core Sand Mixer #2 | 3.0 | 8.6 | (a) |
| Phenolic Urethane Core Sand Mixer #3 | 7.0 | 15.1 | (a) |
| Phenolic Urethane Core Sand Mixer #4 | 7.0 | 15.1 | (a) |
| Phenolic Urethane Core Sand Mixer #5 | 5.0 | 12.1 | (a) |
| Phenolic Urethane Core Sand Mixer #8 | 5.0 | 12.1 | (a) |

The pound per hour limitations was calculated with the following equations:

(a) 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

(b) 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.8.3 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

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

**Compliance Determination Requirements**

D.8.4 Emission Controls Operation [326 IAC 2-7-6(6)]

(a) The Northeast (NE) Sand Silo's integrated bin vent for particulate emissions control shall be in operation at all times that the Northeast (NE) Sand Silo is being loaded.

(b) The South (S) Sand Silo's integrated bin vent for particulate emissions control shall be in operation at all times that the South (S) Sand Silo is being loaded.

(c) Baghouse Q
The Baghouse Q for particulate emissions control shall be in operation at all times that any of the following:

(1) Phenolic Urethane Core Sand Hopper #1, or
(2) Phenolic Urethane electric Sand Heater #1,

are in operation.

(d) Baghouse U
The Baghouse U for particulate emissions control shall be in operation at all times that any of the following:

(1) Phenolic Urethane Core Sand Hopper #3,
(2) Phenolic Urethane Core Sand Hopper #4,
(3) Phenolic Urethane electric Sand Heater #3, or
(4) Phenolic Urethane electric Sand Heater #4,

are in operation.

(e) The Baghouse Z for particulate emissions control shall be in operation at all times that any of the following:

(1) Phenolic Urethane Core Sand Hopper #8,
(2) Phenolic Urethane natural gas fired Sand Heater #5, or
(3) Phenolic Urethane electric Sand Heater #8

are in operation.

(f) 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.

(g) The Acid Scrubber AF shall be in operation at all times when any of the following:

(1) Phenolic Urethane Core Machine #1,
(2) Phenolic Urethane Core Machine #2,
(3) Phenolic Urethane Core Machine #4,
(4) Phenolic Urethane Core Machine #5,
(5) Phenolic Urethane Core Machines #7 - #9 and #12 - #19,
(6) Phenolic Urethane Core Machine #21,
(7) Phenolic Urethane Core Machine #22,
(8) Phenolic Urethane Core Machine #25,
(9) Phenolic Urethane Core Machine #27, or
(10) Phenolic Urethane Core Machine #28,

are in operation.

D.8.5 Testing Requirements [326 IAC 2-7-6(1),(6)]

In order to demonstrate the compliance status with condition D.8.1 – VOC PSD and BACT Requirements, the Permittee shall perform VOC testing on the Acid Scrubber AF exhaust stack (Stack AF) using methods as approved by the Commissioner at least once every five (5) years from the date of the last valid compliance demonstration. During the VOC tests, the Permittee shall monitor and record those parameters required to be measured and monitored by Condition D.8.9 – Scrubber Parametric Monitoring. 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.8.6 Scrubber Failure Detection [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

In the event that scrubber failure has been observed, the failed scrubber 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).

D.8.7 Broken or Failed Bag Detection [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

(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 emission 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.

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

D.8.8 Visible Emissions Notations

(a) Visible emission notations of the:

(1) Baghouse Q exhaust stack (Stack Q),
(2) Baghouse U exhaust stack (Stack U), and
(3) Baghouse Z exhaust stack (Stack Z),

shall be performed once per day during normal daylight operations when any of the associated core sand hopper and core machines is in operation and exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.

(b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

(c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

(d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

(e) If abnormal emissions are observed, the Permittee shall take reasonable response steps. Observation of abnormal emissions that do not violate an applicable opacity limit is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit. Section C – Response to Excursions or Exceedances contains the Permittee's obligations with regard to responding to the reasonable response steps required by this condition.

D.8.9 Scrubber Parametric Monitoring [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)] [40 CFR 64]

(a) The Permittee shall record the flow rate and pH of the Acid Scrubber AF, at least once per day when any of the associated core machines is in operation and venting to the atmosphere.

(1) When for any one reading, the flow rate across Acid Scrubber AF is below a minimum of 200 gallons per minute or a minimum flow rate established during the latest stack test, the Permittee shall take reasonable response steps.

(2) When for any one reading, the pH across Acid Scrubber AF is greater a maximum of 4.5 or a maximum pH established during the latest stack test, the Permittee shall take reasonable response steps.

A flow rate or pH reading that is outside the above mentioned thresholds is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit. Section C – Response to Excursions or Exceedances contains the Permittee's obligations with regard to responding to the reasonable response steps required by this condition.

(b) The instruments used for determining the flow rate and pH shall comply with Section C – Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated or replaced at least once every six (6) months.

D.8.10 Baghouse Parametric Monitoring [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

(a) Baghouse Q
The Permittee shall record the pressure drop across the Baghouse Q, at least once per day, when the following are in operation:

(1) Phenolic Urethane Core Sand Hopper #1,
(2) Phenolic Urethane Sand Heater #1.

When for any one reading, the pressure drop across the baghouse is outside the normal range of 3.0 and 9.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps.

(b) Baghouse U
The Permittee shall record the pressure drop across the Baghouse U, at least once per day, when the following are in operation:

(1) Phenolic Urethane Core Sand Hopper #3,
(2) Phenolic Urethane Core Sand Hopper #4,
(3) Phenolic Urethane Sand Heater #3, and
(4) Phenolic Urethane Sand Heater #4.

When for any one reading, the pressure drop across the baghouse is outside the normal range of 1.0 and 7.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps.

(c) Baghouse Z
The Permittee shall record the pressure drop across the Baghouse Z, at least once per day, when any of the following are in operation:

(1) Phenolic Urethane Core Sand Hopper #8,
(2) Phenolic Urethane Sand Heater #5, and
(3) Phenolic Urethane Sand Heater #8.

When for any one reading, the pressure drop across the baghouse is outside the normal range of 3.0 and 9.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps.

(d) 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. Section C – Response to Excursions or Exceedances contains the Permittee's obligations with regard to responding to the reasonable response steps required by this condition.

(e) 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 or replaced at least once every six (6) months.

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

D.8.11 Record Keeping Requirements

(a) To document compliance with Condition D.8.1 – BACT Requirements, the Permittee shall maintain records of the amount of sand throughput for each core making line.

(b) To document compliance with Condition D.8.1 – BACT Requirements, the Permittee shall maintain records of the VOC content and usage amounts of:

(1) core wash,
(2) core machines cleaner, and
(3) core release agent

for each core making line. Records shall include purchase orders, invoices, and material safety data sheets (MSDS) necessary to verify the VOC content of the core wash, core machines cleaner, and core release agent used.

(c) To document compliance with Condition D.8.8 – Visible Emission Notations, the Permittee shall maintain daily records of visible emission notations of the Baghouse Q, Baghouse U, and Baghouse Z stack exhausts. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g. the process did not operate that day).

(d) To document compliance with Condition D.8.9 – Scrubber Parametric Monitoring, the Permittee shall maintain the daily records of the flow rate and pH for the Acid Scrubber AF. The Permittee shall include in its daily record when the flow rate or pH reading is not taken and the reason for the lack of flow rate of pH readings, (e.g. the process did not operate that day).

(e) To document compliance with Condition D.8.10 – Baghouse Parametric Monitoring, the Permittee shall maintain the daily records of the pressure drop across Baghouse Q, Baghouse U and Baghouse Z. 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, (e.g. the process did not operate that day).

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

D.8.12 Reporting Requirements

A quarterly summary of the information to document the compliance status with Condition D.8.1 (a), (c)(3), (c)(5), and (c)(6) – BACT Requirements, shall be submitted not later than thirty (30) days following the end of each calendar quarter. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a “responsible official” as defined by 326 IAC 2-7-1(34). Section C - General Reporting Requirements contains the Permittee's obligations with regard to the reporting required by this condition.

**SECTION D.9 FACILITY OPERATION CONDITIONS**

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

(18) **Shell Core Making Process**
One (1) Shell Core Sand Making Process, with a nominal sand throughput of 0.8 tons of sand per hour. The Shell Core Sand Making Process consists of the following emission units:

(a) One (1) Shell Core Sand Handling Process, with a nominal sand throughput of 0.8 tons of sand per hour:

(1) North (N) Shell Sand Silo and South (S) Shell Sand Silo, each constructed prior to 1977, with a capacity to provide coated sand to the two (2) Shell Core Sand Hoppers.

Emissions from the North (N) Shell Sand Silo and South (S) Shell Sand Silo are uncontrolled.

(2) Two (2) Shell Core Sand Hoppers, identified as Shell Core Sand Hopper #1 and Shell Core Sand Hopper #2, constructed prior to 1977, with a capacity to provide shell core sand to all Shell Core Machines.

Emissions from the Shell Core Sand Hoppers are uncontrolled.

(b) Three (3) Core Machines, and Three (3) Core Wash Dip Tanks

(1) One (1) Shell Core Machine #6, constructed prior to 1977, and its corresponding Shell Core Wash Dip Tank #6, with a nominal throughput of 0.2 tons of sand per hour.

Emissions from the Shell Core Machine #6 are uncontrolled.

Emissions from the Shell Core Wash Dip Tank #6 are uncontrolled.

(2) One (1) Shell Core Machine #7, constructed prior to 1977, and its corresponding Shell Core Wash Dip Tank #7, with a nominal throughput of 0.3 tons of sand per hour.

Emissions from the Shell Core Machine #7 are uncontrolled.

Emissions from the Shell Core Wash Dip Tank #7 are uncontrolled.

(3) One (1) Shell Core Machine #8, constructed prior to 1977, and its corresponding Shell Core Wash Dip Tank #8, with a nominal throughput of 0.3 tons of sand per hour.

Emissions from the Shell Core Machine #8 are uncontrolled.

Emissions from the Shell Core Wash Dip Tank #8 are uncontrolled.

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

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

D.9.1 Particulate Emission Limitation [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2, the particulate matter (PM) emissions from each process shall not exceed the pounds per hour limitations specified in the table below:

| **Process / Emission Unit** | **P** (ton/hr) | **E** (lb/hr) |
|---|---|---|
| North (N) Shell Sand Silo | 0.4 | 2.2 |
| South (S) Shell Sand Silo | 0.4 | 2.2 |
| Shell Core Sand Hopper #1 | 0.4 | 2.2 |
| Shell Core Sand Hopper #2 | 0.4 | 2.2 |
| Shell Core Machine #6 | 0.2 | 1.4 |
| Shell Core Machine #7 | 0.3 | 1.8 |
| Shell Core Machine #8 | 0.3 | 1.8 |

The pound per hour limitations was calculated with the following equations:

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

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

D.9.2 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

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

**SECTION D.10 FACILITY OPERATION CONDITIONS**

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

(19) **Air Set Core Making Process**
One (1) Air Set Core Making Process, with a nominal sand throughput of 6.0 tons of sand per hour. The Air Set Core Making Process consists of the following emission units:

(a) One (1) Air Set Core Sand Handling Process, with a nominal sand throughput of 6.0 tons of sand per hour:

(1) One (1) South (S) Sand Silo, constructed prior to 1977, with an integral bin vent to control particulate emissions when loading.

(2) One (1) enclosed Pneumatic Sand Transporter #2, constructed in 1996, for transferring sand from the South (S) Sand Silo to the Air Set Core Sand Hopper #3.

(3) One (1) Phenolic Urethane Core Sand Hopper #3, constructed in 1980:

The particulate emissions from the Phenolic Urethane Core Sand Hopper #3 are captured and controlled by Baghouse U, exhausting through Stack U.

(b) One (1) Air Set Core Sand Mixer #2, constructed prior to 1977, with a nominal throughput of 6.0 tons of sand per hour.
Emissions from the Air Set Core Sand Mixer #2 are uncontrolled.

(c) One (1) Air Set Core Machine #2, constructed prior to 1977, with a nominal throughput of 6.0 tons of sand per hour.
Emissions from the Air Set Core Machine #2 are uncontrolled.

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

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

D.10.1 Particulate Emission Limitation [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2, the particulate matter (PM) emissions from each process shall not exceed the pounds per hour limitations specified in the table below:

| **Process / Emission Unit** | **P** (ton/hr) | **E** (lb/hr) | **Equation Used** |
|---|---|---|---|
| South (S) Sand Silo (Bin Vent) | 35.0 | 41.3 | (b) |
| Pneumatic Sand Transporter #2 | 35.0 | 41.3 | (b) |
| Phenolic Urethane Core Sand Hoppers #3 and #4, Heaters #3 and #4 and Air Set Core Sand Hopper #8 (Baghouse U) | 25 | 35.4 | (a) |
| Air Set Core Sand Mixer #2 | 6.0 | 13.6 | (a) |

The pound per hour limitations was calculated with the following equations:

(a) 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

(b) 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.10.2 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

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

**Compliance Determination Requirements**

D.10.3 Emission Controls Operation [326 IAC 2-7-6(6)]

(a) The South (S) Sand Silo's integrated bin vent for particulate emissions control shall be in operation at all times that the South (S) Sand Silo is being loaded.

(b) The Baghouse U for particulate emissions control shall be in operation at all times that the Phenolic Urethane Core Sand Hopper #3 is in operation.

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

D.10.4 Broken or Failed Bag Detection [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

(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 emission 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.

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

D.10.5 Visible Emissions Notations

(a) Visible emission notations of the Baghouse U exhaust (Stack U) shall be performed once per day during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.

(b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

(c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

(d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

(e) If abnormal emissions are observed, the Permittee shall take reasonable response steps. Observation of abnormal emissions that do not violate an applicable opacity limit is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit. Section C – Response to Excursions or Exceedances contains the Permittee's obligations with regard to responding to the reasonable response steps required by this condition.

D.10.6 Baghouse Parametric Monitoring [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

(a) The Permittee shall record the pressure drop across the Baghouse U, at least once per day, when the Phenolic Urethane Core Sand Hopper #3 is in operation. When for any one reading, the pressure drop across the baghouse is outside the normal range of 1.0 and 7.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps. 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. Section C – Response to Excursions or Exceedances contains the Permittee's obligations with regard to responding to the reasonable response steps required by this condition.

(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 or replaced at least once every six (6) months.

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

D.10.7 Record Keeping Requirements

(a) To document compliance with Condition D.10.4 – Visible Emission Notations, the Permittee shall maintain daily records of visible emission notations of the Baghouse U stack exhausts. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g. the process did not operate that day).

(b) To document compliance with Condition D.10.5– Baghouse Parametric Monitoring, the Permittee shall maintain the daily records of the pressure drop across Baghouse U. 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, (e.g. the process did not operate that day).

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

**SECTION D.11 FACILITY OPERATION CONDITIONS**

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

(20) **Large Core Production Cell**
One (1) Large Core Production Cell (ID LCC), permitted in 2006, which will initially be utilized as a phenolic urethane cold box core making operation. The Large Core Production Cell consists of the following emission units:

(a) One (1) Northeast (NE) Sand Silo, constructed prior to 1977, with an integral bin vent to control particulate emissions when loading.

(b) One (1) enclosed Pneumatic Sand Transporter #1, constructed in 1996, for transferring sand from the Northeast (NE) Sand Silo to the Phenolic Urethane Core Sand Hopper #8.

(c) One (1) Large Core Sand Weigh Hopper, permitted to be constructed in 2006, with a nominal throughput capacity of 15 tons of sand per hour.

The particulate emissions from the Large Core Sand Weigh Hopper are captured and controlled by Baghouse Q, exhausting through Stack Q.

(d) Large Core Production Cell Line #10, constructed in 2006, consisting of the following emission units:

(1) One (1) Sand / Resin Mixer #10, with a nominal throughput capacity of 15 tons of sand per hour and 34.18 pounds of resin per hour

Emissions from the Sand / Resin Mixer #10 are uncontrolled.

(2) One (1) Large Core Sand Holding Hopper #10, with a nominal sand throughput of 15 tons of sand per hour.

The particulate emissions from the Large Core Sand Holding Hopper #10 are captured and controlled by Baghouse Q, exhausting through Stack Q.

(3) One (1) electric Large Core Sand Heater #10, with a nominal sand throughput of 15 tons of sand per hour.

The particulate emissions from the Large Core Sand Heater #10 are captured and controlled by Baghouse Q, exhausting through Stack Q.

(4) One (1) Cold Box Phenolic Urethane Core Machine #29, with a nominal throughput capacity of 7 tons of cores per hour, using a nominal of 2.75 pounds of catalyst per ton of core sand;

(A) Operating Scenario #1
The current operating scenario, Operating Scenario #1, will use Resin #1 and Catalyst #1. Resin #1 is a phenolic urethane resin. Catalyst #1 is Dimethylisopropylamine (DMIPA) or an equivalent, non-HAP containing catalyst.

The VOC emissions from the Cold Box Phenolic Urethane Core Machine #29, when using Resin #1 and Catalyst #1, are captured at the core box and controlled by Acid Scrubber AF, exhausting through Stack AF.

(B) Operating Scenario #2

Operating Scenario #2 will use Resin #2 and Catalyst #2. This system will be tested within 180 days of commencing operations using this resin/catalyst system.

(C) Operating Scenario #3
Operating Scenario #3 will use Resin #3 and Catalyst #3. This system will be tested within 180 days of commencing operations using this resin/catalyst system.

(5) One (1) Core Wash Dip Tank #29, with a nominal capacity of 15 tons of cores per hour and 20.408 pounds of core wash per ton of core sand.

Emissions from the Core Wash Dip Tank #29 are uncontrolled.

(e) One (1) natural gas fired Core Oven #29, with a maximum heat input capacity of 6.0 million British thermal units (MMBtu) per hour.

Emissions from the natural gas fired Core Oven #29 are captured, but uncontrolled, and exhaust to Stack V-45.

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

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

D.11.1 PSD Minor Limits [326 IAC 8-1-6] [326 IAC 2-2]

(a) The total volatile organic compound (VOC) emissions from the Sand / Resin Mixer #10, the Cold Box Phenolic Urethane Core Machine #29, and the Core Wash Dip Tanks #29 shall not exceed the following:

(1) 0.02904 pounds of noncatalyst VOC per pound of resin used;

(2) 1.0 pounds of VOC per pound of catalyst used;

(3) 0.02 pounds of VOC per pound of core wash used;

(4) 0.9 pounds of VOC per pound of release agent used; and

(5) 1.0 pounds of VOC per pound of core box cleaner used.

Where: Resin #1 and Catalyst #1 shall represent the current resin / catalyst system in use. Resin #2 / Catalyst #2 and Resin #3 / Catalyst #3 shall represent the other resin / catalyst systems in the Large Core Production Cell that may be used in the future. The VOC emission rates for the mixture of Resin #2 and Catalyst #2 and Resin #3 and Catalyst #3 shall be determined by VOC stack testing to be conducted within 180 days of commencing operations using either of these resin / catalyst systems.

(b) The amount of resin used in the Sand / Resin Mixer #10 and the Cold Box Phenolic Urethane Core Machine #29 combined shall not exceed 299,399.3 pounds per twelve (12) consecutive month period, with compliance determined at the end of each month.

(c) The amount of catalyst used in the Cold Box Phenolic Urethane Core Machine #29 shall not exceed 32,934.6 pounds per twelve (12) consecutive month period, with compliance determined at the end of each month.

(d) The amount of core wash used in the Core Wash Dip Tanks #29shall not exceed 245,504.7 pounds per twelve (12) consecutive month period, with compliance determined at the end of each month.

(e) The amount of release agent used in the Cold Box Phenolic Urethane Core Machine #29 shall not exceed 1,397 pounds per twelve (12) consecutive month period, with compliance determined at the end of each month.

(f) The amount of core box cleaner used in the Cold Box Phenolic Urethane Core Machine #29 shall not exceed 1,725 pounds per twelve consecutive month period, with compliance determined at the end of each month.

A summary of the above VOC emission limits is included in the following table:

| **Usage Limit** (pounds per year) | **VOC Content Limit** (lb VOC from material per lb material) | **VOC Emission Limit** (tons/yr) |
|---|---|---|
| 299,399.3 (resin) | 0.02904 | 4.35 |
| 32,934.6 (catalyst) | 1.0 | 16.47 |
| 245,504.7 (core wash) | 0.02 | 2.46 |
| 1,397 (release agent) | 0.9 | 0.63 |
| 1,725 (core box cleaner) | 1.0 | 0.86 |
| **Total** | | **24.77** |

Compliance with these limitations shall limit emissions of VOC from the Large Core Production Cell (ID LCC) to less than 25 tons per year such that the requirements of 326 IAC 8-1-6 (New Facilities, General Reduction Requirements) do not apply. Compliance with these limitations shall also limit emissions of VOC from the LCC such that the emissions increases from the existing emission units, based on the Actual to Projected Actual test in 326 IAC 2-2-2, plus the limited potential to emit from the LCC will be less than the PSD significant threshold of 40 tons per year. Therefore, the PSD requirements of 326 IAC 2-2-1 will not apply.

D.11.2 PSD Minor Limits [326 IAC 2-2] [326 IAC 6-3-2]

(a) Total PM emissions from the Large Core Production Cell (ID LCC) shall not exceed 0.33 pounds PM per ton of sand throughput;

(b) Total $PM_{10}$ emissions from the Large Core Production Cell (ID LCC) shall not exceed 0.065 pound $PM_{10}$ per ton of sand throughput;

(c) The amount of throughput of sand to the Large Core Production Cell (ID LCC) shall not exceed 12,005 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

Compliance with the above limitations shall limit PM and $PM_{10}$ emissions from the Large Core Production Cell (ID LCC) such that the emissions increases from the existing emission units, based on the Actual to Projected Actual test in 326 IAC 2-2-2, plus the limited potential to emit from the LCC will be less than the PSD significant thresholds of 25 and 15 tons per year, respectively. Therefore, the Large Core Production Cell (ID LCC) will not be major for Prevention of Significant Deterioration under 326 IAC 2-2-1.

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

A Preventive Maintenance Plan is required for these facilities and their control devices. Section B

- Preventive Maintenance Plan contains the Permittee's obligations with regard to the preventive maintenance plan required by this condition.

**Compliance Determination Requirements**

D.11.4 Testing Requirements [326 IAC 2-7-6(1),(6)] [326 IAC 2-1.1-11]

(a) Resin #1 / Catalyst #1 (DMIPA) – Operating Scenario #1
In order to demonstrate the compliance status with Condition D.11.1 – VOC PSD Minor Limits, the Permittee shall perform VOC testing of the uncontrolled exhaust for the Sand / Resin Mixer #10 and of the uncontrolled exhaust for the Cold Box Phenolic Urethane Core Machine #29 when using the resin identified as Resin #1 and the catalyst identified as Catalyst #1 (DMIPA).

(b) Resin #2 / Catalyst #2 – Operating Scenario #2
During the period within 60 days of achieving the nominal production rate but no later than 180 days after start-up of the Sand / resin Mixer #10 and the Cold Box Phenolic Urethane Core Machine #29 using the resin identified as Resin #2 and the catalyst identified as Catalyst #2, In order to demonstrate the compliance status with Condition D.11.1 – VOC PSD Minor Limits, the Permittee shall perform VOC testing in the event of a change in the operating scenario of the uncontrolled exhaust for the Sand / Resin Mixer #10 and of the uncontrolled exhaust for the Cold Box Phenolic Urethane Core Machine #29 when using the resin identified as Resin #2 and the catalyst identified as Catalyst #2.

(c) Resin #3 / Catalyst #3 – Operating Scenario #3
During the period within 60 days of achieving the nominal production rate but no later than 180 days after start-up of the Sand / resin Mixer #10 and the Cold Box Phenolic Urethane Core Machine #29 using the resin identified as Resin #3 and the catalyst identified as Catalyst #2, In order to demonstrate the compliance status with Condition D.11.1 – VOC PSD Minor Limits, the Permittee shall perform VOC testing in the event of a change in the operating scenario of the uncontrolled exhaust for the Sand / Resin Mixer #10 and of the uncontrolled exhaust for the Cold Box Phenolic Urethane Core Machine #29 when using the resin identified as Resin #3 and the catalyst identified as Catalyst #3.

(d) Testing shall be conducted utilizing methods as approved by the Commissioner at least once every five (5) years from the date of the last valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C – Performance Testing contains the Permittee's obligations with regard to the testing required by this condition.

D.11.5 VOC Emissions

Compliance with the VOC emission limit in Condition D.11.1 – VOC PSD Minor Limits shall be determined using the following equation:

| | | |
|---|---|---|
| Total VOC Emissions (lb/month) | = | (lb Resin # 1 used/month) x (0.02904 lb noncatalyst VOC/lb resin used) |
| | + | (lb Catalyst # 1 used/month) x (1.0 lb VOC/lb of catalyst used) |
| | + | (lb Resin # 2 used and Pounds Catalyst # 2 used/month[1]) x (VOC emission per unit of use (determined from stack test)) |
| | + | (lb Resin # 3 used and Pounds Catalyst # 3 used/month[1]) x (VOC emission per unit of use (determined from stack test)) |
| | + | (lb Core Wash used/month) x (0.02 lb VOC/lb of core wash used) |

+ (lb Release Agent used) x (0.9 lb VOC/lb of Release Agent used)

+ (lb core box cleaner) x (1.0 lb VOC/lb of core box cleaner used)

[1] If catalyst used contains a VOC.

D.11.6 Emission Controls Operation [326 IAC 2-7-6(6)]

(a) The Northeast (NE) Sand Silo's integrated bin vent for particulate emissions control shall be in operation at all times that the Northeast (NE) Sand Silo is being loaded.

(b) Baghouse Q
In order to comply with Condition D.12.2 – PM and $PM_{10}$ PSD Minor Limits and Condition D.12.3 – Particulate Emission Limitation, the Baghouse Q for particulate emissions control shall be in operation at all times that any of the following:

(1) Large Core Sand Weigh Hopper,
(2) Large Core Sand Holding Hopper #10, or
(3) Large Core Sand Heater #10.

are in operation.

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

D.11.8 Broken or Failed Bag Detection [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

(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 emission 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.

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

D.11.9 Visible Emissions Notations

(a) Visible emission notations of the Baghouse Q exhaust (Stack Q) shall be performed once per day during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.

(b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not

counting startup or shut down time.

(c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

(d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

(e) If abnormal emissions are observed, the Permittee shall take reasonable response steps. Observation of abnormal emissions that do not violate an applicable opacity limit is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit. Section C – Response to Excursions or Exceedances contains the Permittee's obligations with regard to responding to the reasonable response steps required by this condition.

D.11.10 Baghouse Parametric Monitoring [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

(a) Baghouse Q
The Permittee shall record the pressure drop across Baghouse Q, at least once per day, when the following are in operation:

(1) Large Core Sand Weigh Hopper,
(2) Large Core Sand Holding Hopper #10, or
(3) Large Core Sand Heater #10.

When for any one reading, the pressure drop across the baghouse is outside the normal range of 3.0 and 9.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps. Section C – Response to Excursions or Exceedances contains the Permittee's obligations with regard to responding to the reasonable response steps required by this condition.

(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 or replaced at least once every six (6) months.

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

D.11.11 Record Keeping Requirements

(a) To document compliance with Condition D.11.1 – VOC Minor Limits, the Permittee shall maintain records of the VOC content and usage amounts of:

(1) resin,
(2) catalyst,
(3) core wash,
(4) release agent, and
(5) core box cleaner

for the Large Core Production Cell (ID LCC). Records shall include purchase orders, invoices, and material safety data sheets (MSDS) necessary to verify the VOC content of the core wash, release agent, and core box cleaner used.

(b) To document compliance with Condition D.11.2 – PSD Minor Limits, the Permittee shall maintain records of the sand throughput to the Large Core Production Cell (ID LCC).

(c) To document compliance with Condition D.11.9 – Visible Emission Notations, the

Permittee shall maintain daily records of visible emission notations of the Baghouse Q stack exhaust. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g. the process did not operate that day).

(d) To document compliance with Condition D.11.10 – Scrubber Parametric Monitoring, the Permittee shall maintain the daily records of the flow rate and pH for the Acid Scrubber AF. The Permittee shall include in its daily record when the flow rate or pH readings are not taken and the reason for the lack of flow rate or pH readings, (e.g. the process did not operate that day).

(e) To document compliance with Condition D.11.11– Baghouse Parametric Monitoring, the Permittee shall maintain the daily records of the pressure drop across Baghouse Q. 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, (e.g. the process did not operate that day).

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

D.11.12 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.11.1 – VOC Minor Limits and Condition D.11.2(c) – PSD Minor Limits shall be submitted not later than thirty (30) days following the end of each calendar quarter. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a “responsible official” as defined by 326 IAC 2-7-1(34). Section C - General Reporting Requirements contains the Permittee's obligations with regard to the reporting required by this condition.

## SECTION D.12 FACILITY OPERATION CONDITIONS

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

**Insignificant Activities**

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

(2) The following equipment related to manufacturing activities no resulting in the emission of HAPs: brazing equipment, cutting torches, soldering equipment, welding equipment. [326 IAC 6-3-2]

(3) Cutting 200,000 linear feet or less than one (1") plate or equivalent. [326 IAC 6-3-2]

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

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

D.12.1 Volatile Organic Compounds (VOC) [326 IAC 8-3-2] [326 IAC 8-3-5]

(a) Pursuant to 326 IAC 8-3-2 and 326 IAC 8-3-5(a) (Cold Cleaner Degreaser Operation and Control), the owner or operator of a cold cleaner degreaser facility, construction of which commenced after July 1, 1990, shall ensure that the following control equipment requirements are met:

(1) Equip the degreaser with a cover. The cover must be designed so that it can be easily operated with one (1) hand if:

(A) the solvent volatility is greater than two (2) kiloPascals (fifteen (15) millimeters of mercury or three-tenths (0.3) pounds per square inch measured at thirty-eight degrees Celsius (38°C) (one hundred degrees Fahrenheit (100°F));

(B) the solvent is agitated; or

(C) the solvent is heated.

(2) Equip the degreaser with a facility for draining cleaned articles. If the solvent volatility is greater than four and three-tenths (4.3) kiloPascals (thirty-two (32) millimeters of mercury or six-tenths (0.6) pounds per square inch) measured at thirty-eight degrees Celsius (38°C) (one hundred degrees Fahrenheit (100°F)), then the drainage facility must be internal such that articles are enclosed under the cover while draining. The drainage facility may be external for applications where an internal type cannot fit into the cleaning system.

(3) Provide a permanent, conspicuous label that lists the operating requirements outlined in subsection (b).

(4) The solvent spray, if used, must be a solid, fluid stream and shall be applied at a pressure that does not cause excessive splashing.

(5) Equip the degreaser with one (1) of the following control devices if the solvent volatility is greater than four and three-tenths (4.3) kiloPascals (thirty-two (32) millimeters of mercury or six-tenths (0.6) pounds per square inch) measured at

thirty-eight degrees Celsius (38°C) (one hundred degrees Fahrenheit (100°F)), or if the solvent is heated to a temperature greater than forty-eight and nine-tenths degrees Celsius (48.9°C) (one hundred twenty degrees Fahrenheit (120°F)):

(A) A freeboard that attains a freeboard ratio of seventy-five hundredths (0.75) or greater.

(B) A water cover when solvent is used is insoluble in, and heavier than, water.

(C) Other systems of demonstrated equivalent control such as a refrigerated chiller of carbon adsorption. Such systems shall be submitted to the U.S. EPA as a SIP revision.

(b) Pursuant to 326 IAC 8-3-5(b) (Cold Cleaner Degreaser Operation and Control), the owner or operator of a cold cleaning facility, construction of which commenced after July 1, 1990, shall ensure that the following operating requirements are met:

(1) Close the cover whenever articles are not being handled in the degreaser.

(2) Drain cleaned articles for at least fifteen (15) seconds or until dripping ceases.

(3) Store waste solvent only in covered containers and prohibit the disposal or transfer of waste solvent in any manner in which greater than twenty percent (20%) of the waste solvent by weight could evaporate.

D.12.2 Particulate Emission Limitation [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the allowable particulate emission rate from the above listed processes shall not exceed the pounds per hour limitations as calculated with the following equation:

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

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

## SECTION E.1 NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS (NESHAP) REQUIREMENTS [326 IAC 2-7-5(1)]

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

(1) **Cupola Melt Furnace**

One (1) Cupola Melt Furnace, constructed prior to 1977, with a nominal capacity of 48.5 tons per hour of metal melted, and a maximum heat input capacity of 69.95 million British thermal units (MMBtu) per hour.

Particulate emissions are captured and controlled by Wet Scrubber A and Wet Electrostatic Precipitator WESP (for NESHAP EEEEE compliance). Carbon monoxide emissions are captured and controlled by three (3) natural gas fired afterburners, each with a maximum heat input capacity of 2.2 million British thermal units (MMBtu) per hour. Emissions exhaust through Stack A.

Fugitive particulate emissions from the Cupola Charge Door are captured and controlled by Baghouse #14, exhausting through Stack AD.

(2) **Herman 2 Mold Line**

One (1) Herman 2 Pouring Station, constructed prior to 1977, with a nominal throughput of 37 tons of iron per hour and 166 tons of mold and core sand per hour.

Emissions from the Herman 2 Pouring Station are captured, but uncontrolled, and exhaust to the atmosphere through Vent V-19.

(3) **Herman 3 Mold Line**

The volatile organic compound (VOC) emissions from the Herman 3 Mold line are reduced by one (1) Sonoperoxone® system (or an equivalent advanced oxidation system), sand system optimization, use of low VOC core resin binder materials, and automatic mold vent-off gas ignition.

One (1) Herman 3 Pouring Station, constructed in 1991, with a nominal throughput of 28 tons of iron per hour and 165 tons of mold and core sand per hour.

Emissions from the Herman 3 Pouring Station are captured, but uncontrolled, and exhaust to the atmosphere through Vent V-10.

Under the Iron and Steel Foundries NESHAP (40 CFR 63, Subpart EEEEE)), the following affected facilities are considered an existing affected source:

– Cupola Melt Furnace
– Herman 2 Pouring Station
– Herman 3 Pouring Station

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

## NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS (NESHAP) REQUIREMENTS [326 IAC 2-7-5(1)]

E.1.1 General Provisions Relating to National Emission Standards for Hazardous Air Pollutants under 40 CFR Part 63 [326 IAC 20-1] [40 CFR Part 63, Subpart A]

Pursuant to 40 CFR 63.7760, the Permittee shall comply with the provisions of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated by reference as 326 IAC 20-1-1 for the affected facilities as specified in Table 1 of 40 CFR 63, Subpart EEEEE in accordance with schedule in 40 CFR 63 Subpart EEEEE.

E.1.2 Iron and Steel Foundries NESHAP Requirements [40 CFR Part 63, Subpart EEEEE]

Pursuant to 40 CFR 63.7683, the Permittee shall comply with the following provisions of 40 CFR Part 63, Subpart EEEEE (National Emission Standards for Hazardous Air Pollutants for Iron and Steel Foundries), which are incorporated by reference as 326 IAC 20-92 and included as Attachment A:

(1) 40 CFR 63.7680
(2) 40 CFR 63.7681
(3) 40 CFR 63.7682
(4) 40 CFR 63.7683
(5) 40 CFR 63.7690
(6) 40 CFR 63.7700
(7) 40 CFR 63.7710
(8) 40 CFR 63.7720
(9) 40 CFR 63.7730
(10) 40 CFR 63.7731
(11) 40 CFR 63.7732
(12) 40 CFR 63.7733
(13) 40 CFR 63.7734
(14) 40 CFR 63.7735
(15) 40 CFR 63.7736
(16) 40 CFR 63.7740
(17) 40 CFR 63.7741
(18) 40 CFR 63.7742
(19) 40 CFR 63.7743
(20) 40 CFR 63.7744
(21) 40 CFR 63.7745
(22) 40 CFR 63.7746
(23) 40 CFR 63.7747
(24) 40 CFR 63.7750
(25) 40 CFR 63.7751
(26) 40 CFR 63.7753
(27) 40 CFR 63.7760
(28) 40 CFR 63.7761
(29) 40 CFR 63.7765
(30) Appendix - Table 1 to Subpart EEEEE of Part 63

**SECTION F.1 FUGITIVE DUST CONTROL PLAN**

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

(1) **Scrap Yard**

(2) **Herman 2 Mold Line**

(a) One (1) Herman 2 Pouring Station, constructed prior to 1977, with a nominal throughput of 37 tons of iron per hour and 166 tons of mold and core sand per hour.

Emissions from the Herman 2 Pouring Station are captured, but uncontrolled, and exhaust to the atmosphere through Vent V-19.

(b) One (1) Herman 2 Castings Cooling process, constructed prior to 1977, with a nominal throughput of 37 tons of iron per hour and 166 tons of mold and core sand per hour.

Emissions from the Herman 2 Castings Cooling process are captured, but uncontrolled, and exhaust to the atmosphere through Vents V-8 and V-9.

(c) One (1) Herman 2 Shakeout process, constructed prior to 1977, with a nominal throughput of 37 tons of iron per hour and 166 tons of mold and core sand per hour.

The particulate emissions from the Herman 2 Shakeout process are captured and controlled by Wet Collector #3, exhausting through Stack B.

(d) One (1) Herman 2 Sand Handling process, constructed prior to 1977 and modified in 2009, with a nominal throughput of 166 tons of mold and core sand per hour.

The Herman 2 Sand Handling process includes

(1) sand screening, sand cooling, water addition, sand mulling, and the ancillary equipment associated with each, all constructed prior to 1977, with particulate emissions captured and controlled by Baghouse #1, exhausting through Stack F, and Baghouse #13, exhausting through Stack Y.

and

(2) One (1) waste sand handling system supporting the Herman 2 Mold Line, consisting of two (2) Klein transports, constructed in 2009, identified as:

(A) PF504-5, with a total nominal capacity of 12.0 tons per hour, with particulate emissions from sending operations captured and controlled by Wet Collector #3, exhausting through Stack B; and

(B) F902-5, with a total nominal capacity of 9.0 tons per hour, with particulate emissions from sending operations captured and controlled by Baghouse #13, exhausting through Stack Y.

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

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

F.1.1 Scrap Yard Sweeping and Watering Requirements

Pursuant to Agreed Order 2001-11054-A, issued on May 25, 2006, the Permittee shall:

(a) Perform sweeping of the scrap yard at least once per shift, whenever truck traffic is present or the cupola is operating; and

(b) Perform watering of the scrap yard at least once per day, whenever truck traffic is present or the cupola is operating, from April through October

unless:

(a) There is at least one tenth of an inch (1/10") of rainfall within the past twenty-four (24) hours; or

(b) There is at least one inch (1") of snow on the ground; or

(c) The ambient air temperature is below thirty-two degrees Fahrenheit (32F).

F.1.2 Herman 2 Mold Line Visible Emissions

Pursuant to 326 IAC 6-4, Fugitive Dust Emissions, and Agreed Order 2001-11054-A, issued on May 25, 2006, the Permittee shall eliminate visible emissions from the Herman 2 Sand Handling system, including the mold cooling, pouring, and shakeout operations, lasting sixty (60) or more seconds, traveling beyond the property boundaries at or near ground level.

If such visible emissions occur, the Permittee shall immediately take all necessary corrective actions, including but not limited to, production decrease or cessation of operation of the Herman 2 Mold Line.

F.1.3 Herman 2 Mold Line Blackwater Advanced Oxidation System

Pursuant to Agreed Order 2001-11054-A, issued on May 25, 2006, the Permittee shall purchase, install, operate, and optimize a blackwater advanced oxidation system (Sonoperoxone® or equivalent system) on the Herman 2 Mold Line according to the timelines set forth in Agreed Order 2001-11054-A.

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

F.1.4 Scrap Yard Visual Observations

Pursuant to Agreed Order 2001-11054-A, issued on May 25, 2006:

(a) The Permittee shall conduct visual observations of the scrap yard at least once per shift every day during daylight hours, whenever truck traffic is present or the cupola is operating. The visual observations shall be made at a time not less than two (2) hours after either sweeping or watering has been performed in accordance with Condition F.1.1 – Sweeping and Watering Requirements.

(b) Should any visible airborne dust be observed within ten (10) feet of the fence line, generated by either wind, vehicular traffic, or any other activities, the Permittee shall perform additional sweeping or watering, in accordance with Condition F.1.1 – Sweeping and Watering Requirements, immediately after the observation.

(c) Compliance with paragraphs (a) and (b) of this condition and Condition F.1.1 – Sweeping and Watering Requirements does not relieve the Permittee from its duty to comply with the fugitive dust requirements in Section C – Fugitive Dust Emissions and 326 IAC 6-4

nor reduce the Permittee's liabilities for any noncompliance with these requirements.

F.1.5 Herman 2 Mold Line Emissions Observations and Monitoring Requirements

Pursuant to Agreed Order 2001-11054-A, issued on May 25, 2006:

(a) The Permittee shall conduct emissions observations of the Herman 2 cooling stacks at least once per shift during daylight hours in accordance with Condition F.1.2 – Herman 2 Mold Line Visible Emissions.

(b) The Permittee shall monitor the operating parameters of the Sonoperoxone® system at least once per shift, including, but not limited to,

(1) The hydrogen peroxide usage in gallons per hour of muller operation,

(2) The ozone generator plasma voltage, and

(3) The ultrasonic power in watts

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

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

Pursuant to Agreed Order 2001-11054-A, issued on May 25, 2006:

(a) To document compliance with Condition F.1.1 – Scrap Yard Sweeping and Watering Requirements and Condition F.1.4 – Scrap Yard Visual Observations, the Permittee shall maintain records of:

(1) The once per shift and daily visual observations;

(2) The results of once per shift and daily visual observations;

(3) The scrap yard sweeping events;

(4) The scrap yard watering events; and

(5) The weather conditions prohibiting sweeping of the paved areas and / or watering of the yard.

The records shall include the date and time of each observation or event.

(b) To document compliance with Condition F.1.2 – Herman 2 Mold Line Visible Emissions and Condition F.1.5 – Herman 2 Mold Line Emissions Observations and Monitoring Requirements, the Permittee shall record the emissions observations and results and the parametric monitoring and any corrective actions taken. These records shall include:

(1) The date and time of each once per shift emissions observation;

(2) The results of once per shift emissions observations; and

(3) Documentation of the parametric monitoring and any corrective actions taken;

(c) All records shall be maintained in accordance with Section C – General Record Keeping Requirements, of this permit.

### F.1.7 Notification Requirements

Pursuant to Agreed Order 2001-11054-A, issued on May 25, 2006, the Permittee shall notify the current OAQ Compliance Inspector by telephone and in writing via facsimile of:

(a) Every event of deviation from the requirements specified in conditions F.1.1 – Sweeping and Watering Requirements and F.1.4 – Scrap Yard Visual Observations;

(b) Each observation of visible dust leaving the property at or near ground level; and

(c) Every observation of visible emissions from the Herman 2 Sand Handling system, including the mold cooling, pouring, and shakeout operations, lasting sixty (60) or more seconds, traveling beyond the property boundaries at or near ground level;

within twenty-four (24) hours of the event or observation, or by the next business day.

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

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

Source Name: Dalton Corporation, Warsaw Manufacturing Facility
Source Address: 1900 E. Jefferson Street, Warsaw, Indiana 46580
Part 70 Permit No.: T085-30768-00003

**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: Dalton Corporation, Warsaw Manufacturing Facility
Source Address: 1900 E. Jefferson Street, Warsaw, Indiana 46580
Part 70 Permit No.: T085-30768-00003

**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: | Dalton Corporation, Warsaw Manufacturing Facility |
| Source Address: | 1900 E. Jefferson Street, Warsaw, Indiana 46580 |
| Part 70 Permit No.: | T085-30768-00003 |
| Facilities: | Cupola Charge Handling |
| Parameters: | Amount of Metal Charged |
| Limits: | 199,194 tons of metal per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Section D.1) |

QUARTER : YEAR:

| Month | Column 1 | Column 2 | Column 1 + Column 2 |
|---|---|---|---|
| | This Month | Previous 11 Months | 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: | Dalton Corporation, Warsaw Manufacturing Facility |
| Source Address: | 1900 Jefferson Street, Warsaw, Indiana 46580 |
| Part 70 Permit No.: | T 085-30768-00003 |
| Facilities: | Cupola Melt Furnace |
| Parameters: | Amount of Metal Melted |
| Limits: | 187,919 tons of metal per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Section D.2) |

YEAR: _____

| Month | This Month | Previous 11 Months | 12 Month Total |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

☐ No deviation occurred in this quarter.

☐ Deviations 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: | Dalton Corporation, Warsaw Manufacturing Facility |
| Source Address: | 1900 Jefferson Street, Warsaw, Indiana 46580 |
| Part 70 Permit No.: | T 085-30768-00003 |
| Facilities: | Herman 2 Sand Handling - Klein Transports |
| Parameters: | Amount of Core and Mold Sand Handled |
| Limits: | 106,000 tons of sand per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Section D.3) |

YEAR: _____

| Month | This Month | Previous 11 Months | 12 Month Total |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

☐ No deviation occurred in this quarter.

☐ Deviations 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: | Dalton Corporation, Warsaw Manufacturing Facility |
| Source Address: | 1900 Jefferson Street, Warsaw, Indiana 46580 |
| Part 70 Permit No.: | T 085-30768-00003 |
| Facilities: | Herman 2 and Herman 3 Sand Handling |
| Parameters: | Amount of Core and Mold Sand Handled |
| Limits: | 1,127,516 tons of sand per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Sections D.3 and D.4) |

YEAR: _____

| Month | This Month | Previous 11 Months | 12 Month Total |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

☐ No deviation occurred in this quarter.

☐ Deviations 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: | Dalton Corporation, Warsaw Manufacturing Facility |
| Source Address: | 1900 Jefferson Street, Warsaw, Indiana 46580 |
| Part 70 Permit No.: | T 085-30768-00003 |
| Facilities: | Herman 3 Mold Line |
| Parameters: | Amount of Metal Throughput |
| Limits: | 90,578 tons of metal per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Section D.4) |

YEAR: _____

| Month | This Month | Previous 11 Months | 12 Month Total |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

☐ No deviation occurred in this quarter.

☐ Deviations 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: | Dalton Corporation, Warsaw Manufacturing Facility |
| Source Address: | 1900 Jefferson Street, Warsaw, Indiana 46580 |
| Part 70 Permit No.: | T 085-30768-00003 |
| Facilities: | Herman 3 Mold Line |
| Parameters: | Amount of Sand Throughput |
| Limits: | 543,470 tons of sand per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Section D.4) |

YEAR: _____

| Month | This Month | Previous 11 Months | 12 Month Total |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

☐ No deviation occurred in this quarter.

☐ Deviations 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: | Dalton Corporation, Warsaw Manufacturing Facility |
| Source Address: | 1900 Jefferson Street, Warsaw, Indiana 46580 |
| Part 70 Permit No.: | T 085-30768-00003 |
| Facilities: | Waste Sand Handling, Screening and Transport System |
| Parameters: | Amount of Sand Throughput |
| Limits: | 112,752 tons of sand per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Section D.5) |

YEAR: _____

| Month | This Month | Previous 11 Months | 12 Month Total |
|---|---|---|---|
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☐ No deviation occurred in this quarter.

☐ Deviations 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: | Dalton Corporation, Warsaw Manufacturing Facility |
| Source Address: | 1900 Jefferson Street, Warsaw, Indiana 46580 |
| Part 70 Permit No.: | T 085-30768-00003 |
| Facilities: | Vibratory Shaker |
| Parameters: | Amount of Metal Throughput |
| Limits: | 142,000 tons of metal per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Section D.5) |

YEAR: _____

| Month | This Month | Previous 11 Months | 12 Month Total |
|---|---|---|---|
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☐ No deviation occurred in this quarter.

☐ Deviations 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: | Dalton Corporation, Warsaw Manufacturing Facility |
| Source Address: | 1900 Jefferson Street, Warsaw, Indiana 46580 |
| Part 70 Permit No.: | T 085-30768-00003 |
| Facilities: | Shot Blast Machines (SB-1 through SB-9) |
| Parameters: | Amount of Finished Castings |
| Limits: | 112,752 tons of finished castings per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Section D.6) |

YEAR: _____

| Month | This Month | Previous 11 Months | 12 Month Total |
|---|---|---|---|
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☐ No deviation occurred in this quarter.

☐ Deviations 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: | Dalton Corporation, Warsaw Manufacturing Facility |
| Source Address: | 1900 Jefferson Street, Warsaw, Indiana 46580 |
| Part 70 Permit No.: | T 085-30768-00003 |
| Facilities: | Hose Blast System for Shot Blast Machine SB-8 |
| Parameters: | Amount of Finished Castings |
| Limits: | 16,500 tons of finished castings per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Section D.6) |

YEAR: _____

| Month | This Month | Previous 11 Months | 12 Month Total |
|---|---|---|---|
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☐ No deviation occurred in this quarter.

☐ Deviations 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: | Dalton Corporation, Warsaw Manufacturing Facility |
| Source Address: | 1900 Jefferson Street, Warsaw, Indiana 46580 |
| Part 70 Permit No.: | T 085-30768-00003 |
| Facilities: | Robotic Grinders ABB and FANUC |
| Parameters: | Amount of Finished Castings |
| Limits: | 15,500 tons of finished castings per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Section D.6) |

YEAR: _____

| Month | This Month | Previous 11 Months | 12 Month Total |
|---|---|---|---|
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☐ No deviation occurred in this quarter.

☐ Deviations 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: Dalton Corporation, Warsaw Manufacturing Facility
Source Address: 1900 Jefferson Street, Warsaw, Indiana 46580
Part 70 Permit No.: T 085-30768-00003
Facilities: SB 10 Blow-Off Chamber
Parameters: Casting Throughput
Limits: 20,000 tons per twelve (12) consecutive month period, rolled on a monthly basis with compliance determined at the end of each month. (Section D.6)

YEAR: _____

| Month | This Month | Previous 11 Months | 12 Month Total |
|---|---|---|---|
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☐ No deviation occurred in this quarter.

☐ Deviations occurred in this quarter.
Deviation has been reported on: _____

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

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

## Part 70 Quarterly Report

Source Name: Dalton Corporation, Warsaw Manufacturing Facility
Source Address: 1900 Jefferson Street, Warsaw, Indiana 46580
Part 70 Permit No.: T 085-30768-00003
Facilities: Phenolic Urethane Core Making Line #9 (Sand Mixer #9)
Parameters: Amount of Input Resin
Limits: 295,000 pounds per twelve (12) consecutive month period, rolled on a monthly basis, and compliance determined at the end of each month. (Section D.8)

YEAR: _____

| Month | This Month | Previous 11 Months | 12 Month Total |
|---|---|---|---|
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☐ No deviation occurred in this quarter.

☐ Deviations 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: | Dalton Corporation, Warsaw Manufacturing Facility |
| Source Address: | 1900 Jefferson Street, Warsaw, Indiana 46580 |
| Part 70 Permit No.: | T 085-30768-00003 |
| Facilities: | Phenolic Urethane Core Making Line #9 (Sand Mixer #9) |
| Parameters: | Amount of Input Catalysts |
| Limits: | 32,935 pounds per twelve (12) consecutive month period, rolled on a monthly basis, and compliance determined at the end of each month. (Section D.8) |

YEAR: _____

| Month | This Month | Previous 11 Months | 12 Month Total |
|---|---|---|---|
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☐ No deviation occurred in this quarter.

☐ Deviations 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: | Dalton Corporation, Warsaw Manufacturing Facility |
| Source Address: | 1900 Jefferson Street, Warsaw, Indiana 46580 |
| Part 70 Permit No.: | T 085-30768-00003 |
| Facilities: | Phenolic Urethane Core Making Line #1 |
| Parameters: | Amount of Sand Throughput |
| Limits: | 17,922 tons per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Section D.9) |

YEAR: _____

| Month | This Month | Previous 11 Months | 12 Month Total |
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☐ No deviation occurred in this quarter.

☐ Deviations 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: | Dalton Corporation, Warsaw Manufacturing Facility |
| Source Address: | 1900 Jefferson Street, Warsaw, Indiana 46580 |
| Part 70 Permit No.: | T 085-30768-00003 |
| Facilities: | Phenolic Urethane Core Making Line #2 |
| Parameters: | Amount of Sand Throughput |
| Limits: | 4,656 tons per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Section D.9) |

YEAR: _____

| Month | This Month | Previous 11 Months | 12 Month Total |
|---|---|---|---|
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☐ No deviation occurred in this quarter.

☐ Deviations 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: | Dalton Corporation, Warsaw Manufacturing Facility |
| Source Address: | 1900 Jefferson Street, Warsaw, Indiana 46580 |
| Part 70 Permit No.: | T 085-30768-00003 |
| Facilities: | Phenolic Urethane Core Making Line #3 |
| Parameters: | Amount of Sand Throughput |
| Limits: | 23,200 tons per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Section D.9) |

YEAR: _____

| Month | This Month | Previous 11 Months | 12 Month Total |
|---|---|---|---|
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☐ No deviation occurred in this quarter.

☐ Deviations 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: | Dalton Corporation, Warsaw Manufacturing Facility |
| Source Address: | 1900 Jefferson Street, Warsaw, Indiana 46580 |
| Part 70 Permit No.: | T 085-30768-00003 |
| Facilities: | Phenolic Urethane Core Making Line #4 |
| Parameters: | Amount of Sand Throughput |
| Limits: | 12,910 tons per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Section D.9) |

YEAR: _____

| Month | This Month | Previous 11 Months | 12 Month Total |
|---|---|---|---|
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☐ No deviation occurred in this quarter.

☐ Deviations 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: | Dalton Corporation, Warsaw Manufacturing Facility |
| Source Address: | 1900 Jefferson Street, Warsaw, Indiana 46580 |
| Part 70 Permit No.: | T 085-30768-00003 |
| Facilities: | Phenolic Urethane Core Making Line #5 |
| Parameters: | Amount of Sand Throughput |
| Limits: | 2,383 tons per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Section D.9) |

YEAR: _____

| Month | This Month | Previous 11 Months | 12 Month Total |
|---|---|---|---|
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☐ No deviation occurred in this quarter.

☐ Deviations 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: | Dalton Corporation, Warsaw Manufacturing Facility |
| Source Address: | 1900 Jefferson Street, Warsaw, Indiana 46580 |
| Part 70 Permit No.: | T 085-30768-00003 |
| Facilities: | Phenolic Urethane Core Making Line #8 |
| Parameters: | Amount of Sand Throughput |
| Limits: | 6,350 tons per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Section D.9) |

YEAR: _____

| Month | This Month | Previous 11 Months | 12 Month Total |
|---|---|---|---|
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☐ No deviation occurred in this quarter.

☐ Deviations 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: | Dalton Corporation, Warsaw Manufacturing Facility |
| Source Address: | 1900 Jefferson Street, Warsaw, Indiana 46580 |
| Part 70 Permit No.: | T 085-30768-00003 |
| Facilities: | Phenolic Urethane Core Making Lines #1 through #5, and #8 |
| Parameters: | Amount of Core Wash Used |
| Limits: | 117,260 gallons per twelve (12) consecutive month period, rolled on a monthly basis, and VOC content of the core wash shall not exceed 0.12 pounds per gallon. Compliance determined at the end of each month. (Section D.9) |

YEAR: _____

| Month | This Month | Previous 11 Months | 12 Month Total |
|---|---|---|---|
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☐ No deviation occurred in this quarter.

☐ Deviations 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: | Dalton Corporation, Warsaw Manufacturing Facility |
| Source Address: | 1900 Jefferson Street, Warsaw, Indiana 46580 |
| Part 70 Permit No.: | T 085-30768-00003 |
| Facilities: | Phenolic Urethane Core Making Lines #1 through #5, and #8 |
| Parameters: | Amount of Core Machines Cleaner Used |
| Limits: | 1188 gallons per twelve consecutive month period, rolled on a monthly basis, and VOC content of the core machines cleaner shall not exceed 8.17 pounds per gallon. Compliance determined at the end of each month. (Section D.9) |

YEAR: _____

| Month | This Month | Previous 11 Months | 12 Month Total |
|---|---|---|---|
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☐ No deviation occurred in this quarter.

☐ Deviations 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: | Dalton Corporation, Warsaw Manufacturing Facility |
| Source Address: | 1900 Jefferson Street, Warsaw, Indiana 46580 |
| Part 70 Permit No.: | T 085-30768-00003 |
| Facilities: | Phenolic Urethane Core Making Lines #1 through #5, and #8 |
| Parameters: | Amount of Core Release Agent Used |
| Limits: | 1150 gallons per twelve (12) consecutive month period, rolled on a monthly basis, and VOC content of the core release agent shall not exceed 6.15 pounds per gallon. Compliance determined at the end of each month. (Section D.9) |

YEAR: _____

| Month | This Month | Previous 11 Months | 12 Month Total |
|---|---|---|---|
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☐ No deviation occurred in this quarter.

☐ Deviations 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: | Dalton Corporation, Warsaw Manufacturing Facility |
| Source Address: | 1900 Jefferson Street, Warsaw, Indiana 46580 |
| Part 70 Permit No.: | T 085-30768-00003 |
| Facilities: | Large Core Production Cell (ID LCC) |
| Parameters: | Amount of Resin Used |
| Limits: | 299,399.3 pounds per twelve (12) consecutive month period, rolled on a monthly basis, and VOC content of the resin shall not exceed 0.02904 pounds of VOC per pound of resin. Compliance determined at the end of each month. (Section D.12) |

YEAR: _____

| Month | This Month | Previous 11 Months | 12 Month Total |
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☐ No deviation occurred in this quarter.

☐ Deviations 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: | Dalton Corporation, Warsaw Manufacturing Facility |
| Source Address: | 1900 Jefferson Street, Warsaw, Indiana 46580 |
| Part 70 Permit No.: | T 085-30768-00003 |
| Facilities: | Large Core Production Cell (ID LCC) |
| Parameters: | Amount of Catalyst Used |
| Limits: | 32,934.6 pounds per twelve (12) consecutive month period, rolled on a monthly basis, and VOC content of the catalyst shall not exceed 1.0 pounds of VOC per pound of catalyst. Compliance determined at the end of each month. (Section D.12) |

YEAR: _____

| Month | This Month | Previous 11 Months | 12 Month Total |
|---|---|---|---|
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☐ No deviation occurred in this quarter.

☐ Deviations 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: | Dalton Corporation, Warsaw Manufacturing Facility |
| Source Address: | 1900 Jefferson Street, Warsaw, Indiana 46580 |
| Part 70 Permit No.: | T 085-30768-00003 |
| Facilities: | Large Core Production Cell (ID LCC) |
| Parameters: | Amount of Core Wash Used |
| Limits: | 245,504.7 pounds per twelve (12) consecutive month period, rolled on a monthly basis, and VOC content of the core wash shall not exceed 0.02 pounds of VOC per pound of core wash. Compliance determined at the end of each month. (Section D.12) |

YEAR: _____

| Month | This Month | Previous 11 Months | 12 Month Total |
|---|---|---|---|
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☐ No deviation occurred in this quarter.

☐ Deviations 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: | Dalton Corporation, Warsaw Manufacturing Facility |
| Source Address: | 1900 Jefferson Street, Warsaw, Indiana 46580 |
| Part 70 Permit No.: | T 085-30768-00003 |
| Facilities: | Large Core Production Cell (ID LCC) |
| Parameters: | Amount of Release Agent Used |
| Limits: | 1,397 pounds per twelve (12) consecutive month period, rolled on a monthly basis, and VOC content of the release agent shall not exceed 0.9 pounds of VOC per pound of release agent. Compliance determined at the end of each month. (Section D.12) |

YEAR: _____

| Month | This Month | Previous 11 Months | 12 Month Total |
|---|---|---|---|
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☐ No deviation occurred in this quarter.

☐ Deviations 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: | Dalton Corporation, Warsaw Manufacturing Facility |
| Source Address: | 1900 Jefferson Street, Warsaw, Indiana 46580 |
| Part 70 Permit No.: | T 085-30768-00003 |
| Facilities: | Large Core Production Cell (ID LCC) |
| Parameters: | Amount of Core Box Cleaner Used |
| Limits: | 1,725 pounds per twelve consecutive month period, rolled on a monthly basis, and VOC content of the core box cleaner shall not exceed 1.0 pounds of VOC per pound of core box cleaner. Compliance determined at the end of each month. (Section D.12) |

YEAR: _____

| Month | This Month | Previous 11 Months | 12 Month Total |
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☐ No deviation occurred in this quarter.

☐ Deviations 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: | Dalton Corporation, Warsaw Manufacturing Facility |
| Source Address: | 1900 Jefferson Street, Warsaw, Indiana 46580 |
| Part 70 Permit No.: | T 085-30768-00003 |
| Facilities: | Large Core Production Cell (ID LCC) |
| Parameters: | Amount of Sand Throughput |
| Limits: | 12,005 tons per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Section D.12) |

YEAR: _____

| Month | This Month | Previous 11 Months | 12 Month Total |
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☐ No deviation occurred in this quarter.

☐ Deviations 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:** Dalton Corporation, Warsaw Manufacturing Facility
**Source Address:** 1900 Jefferson Street, Warsaw, Indiana 46580
**Part 70 Permit No.:** T 085-30768-00003
**Facilities:** Core Making Line #9
**Parameters:** Amount of Sand Throughput
**Limits:** 12,000 tons per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Section D.12)

**YEAR:** _____

| Month | This Month | Previous 11 Months | 12 Month Total |
|---|---|---|---|
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☐ **No deviation occurred in this quarter.**

☐ **Deviations 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: Dalton Corporation, Warsaw Manufacturing Facility
Source Address: 1900 E. Jefferson Street, Warsaw, Indiana 46580
Part 70 Permit No.: T085-30768-00003

**Months: _____ to _____ Year: _____**



| | |
|---|---|
| This report shall be submitted quarterly based on a calendar year. 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 A: National Emission Standards for Hazardous Air Pollutants for Iron and Steel Foundries [40 CFR 63, Subpart EEEEE]

## Source Description and Location

| | |
|---|---|
| Source Name: | Dalton Corporation, Warsaw Manufacturing Facility |
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## Iron and Steel Foundries NESHAP [40 CFR 63, Subpart EEEEE]

**40 CFR 63, Subpart EEEEE — National Emission Standards for Hazardous Air Pollutants for Iron and Steel Foundries**

**Source:** 69 FR 21923, Apr. 22, 2004, unless otherwise noted.

**What this Subpart Covers**

**§ 63.7680 What is the purpose of this subpart?**

This subpart establishes national emission standards for hazardous air pollutants (NESHAP) for iron and steel foundries. This subpart also establishes requirements to demonstrate initial and continuous compliance with the emissions limitations, work practice standards, and operation and maintenance requirements in this subpart.

**§ 63.7681 Am I subject to this subpart?**

You are subject to this subpart if you own or operate an iron and steel foundry that is (or is part of) a major source of hazardous air pollutant (HAP) emissions. Your iron and steel foundry is a major source of HAP for purposes of this subpart if it emits or has the potential to emit any single HAP at a rate of 10 tons or more per year or any combination of HAP at a rate of 25 tons or more per year or if it is located at a facility that emits or has the potential to emit any single HAP at a rate of 10 tons or more per year or any combination of HAP at a rate of 25 tons or more per year as defined in §63.2.

[69 FR 21923, Apr. 22, 2004, as amended at 73 FR 7218, February 7, 2008]

**§ 63.7682 What parts of my foundry does this subpart cover?**

(a) The affected source is each new or existing iron and steel foundry.

(b) This subpart covers emissions from metal melting furnaces, scrap preheaters, pouring areas, pouring stations, automated conveyor and pallet cooling lines, automated shakeout lines, and mold and core making lines. This subpart also covers fugitive emissions from foundry operations.

(c) An affected source is existing if you commenced construction or reconstruction of the affected source before December 23, 2002.

(d) An affected source is new if you commenced construction or reconstruction of the affected source on or after December 23, 2002. An affected source is reconstructed if it meets the definition of “reconstruction” in §63.2.

**§ 63.7683 When do I have to comply with this subpart?**

(a) Except as specified in paragraph (b) of this section, if you have an existing affected source, you must comply with each emissions limitation, work practice standard, and operation and maintenance requirement in this subpart that applies to you no later than April 23, 2007. Major source status for existing affected sources must be determined no later than April 23, 2007.

(b) If you have an existing affected source, you must comply with the work practice standards in §63.7700(b) or (c), as applicable, no later than April 22, 2005.

(c) If you have a new affected source for which the initial startup date is on or before April 22, 2004, you must comply with each emissions limitation, work practice standard, and operation and maintenance requirement in this subpart that applies to you by April 22, 2004.

(d) If you have a new affected source for which the initial startup date is after April 22, 2004, you must comply with each emissions limitation, work practice standard, and operation and maintenance requirement in this subpart that applies to you upon initial startup.

(e) If your iron and steel foundry is an area source that becomes a major source of HAP, you must meet the requirements of §63.6(c)(5).

(f) You must meet the notification and schedule requirements in §63.7750. Note that several of these notifications must be submitted before the compliance date for your affected source.

**Emissions Limitations**

**§ 63.7690 What emissions limitations must I meet?**

(a) You must meet the emissions limits or standards in paragraphs (a)(1) through (11) of this section that apply to you. When alternative emissions limitations are provided for a given emissions source, you are not restricted in the selection of which applicable alternative emissions limitation is used to demonstrate compliance.

(1) For each electric arc metal melting furnace, electric induction metal melting furnace, or scrap preheater at an existing iron and steel foundry, you must not discharge emissions through a conveyance to the atmosphere that exceed either the limit for particulate matter (PM) in paragraph (a)(1)(i) of this section or, alternatively the limit for total metal HAP in paragraph (a)(1)(ii) of this section:

(i) 0.005 grains of PM per dry standard cubic foot (gr/dscf), or

(ii) 0.0004 gr/dscf of total metal HAP.

(2) For each cupola metal melting furnace at an existing iron and steel foundry, you must not discharge emissions through a conveyance to the atmosphere that exceed either the limit for PM in paragraph (a)(2)(i) or (ii) of this section or, alternatively the limit for total metal HAP in paragraph (a)(2)(iii) or (iv) of this section:

(i) 0.006 gr/dscf of PM; or

(ii) 0.10 pound of PM per ton (lb/ton) of metal charged, or

(iii) 0.0005 gr/dscf of total metal HAP; or

(iv) 0.008 pound of total metal HAP per ton (lb/ton) of metal charged.

(3) For each cupola metal melting furnace or electric arc metal melting furnace at a new iron and steel foundry, you must not discharge emissions through a conveyance to the atmosphere that exceed either the limit for PM in paragraph (a)(3)(i) of this section or, alternatively the limit for total metal HAP in paragraph (a)(3)(ii) of this section:

(i) 0.002 gr/dscf of PM, or

(ii) 0.0002 gr/dscf of total metal HAP.

(4) For each electric induction metal melting furnace or scrap preheater at a new iron and steel foundry, you must not discharge emissions through a conveyance to the atmosphere that exceed either the limit for PM in paragraph (a)(4)(i) of this section or, alternatively the limit for total metal HAP in paragraph (a)(4)(ii) of this section:

(i) 0.001 gr/dscf of PM, or

(ii) 0.00008 gr/dscf of total metal HAP.

(5) For each pouring station at an existing iron and steel foundry, you must not discharge emissions through a conveyance to the atmosphere that exceed either the limit for PM in paragraph (a)(5)(i) of this section or, alternatively the limit for total metal HAP in paragraph (a)(5)(ii) of this section:

(i) 0.010 gr/dscf of PM, or

(ii) 0.0008 gr/dscf of total metal HAP.

(6) For each pouring area or pouring station at a new iron and steel foundry, you must not discharge emissions through a conveyance to the atmosphere that exceed either the limit for PM in paragraph (a)(6)(i) of this section or, alternatively the limit for total metal HAP in paragraph (a)(6)(ii) of this section:

(i) 0.002 gr/dscf of PM, or

(ii) 0.0002 gr/dscf of total metal HAP.

(7) For each building or structure housing any iron and steel foundry emissions source at the iron and steel foundry, you must not discharge any fugitive emissions to the atmosphere from foundry operations that exhibit opacity greater than 20 percent (6-minute average), except for one 6-minute average per hour that does not exceed 27 percent opacity.

(8) For each cupola metal melting furnace at a new or existing iron and steel foundry, you must not discharge emissions of volatile organic hazardous air pollutants (VOHAP) through a conveyance to the atmosphere that exceed 20 parts per million by volume (ppmv) corrected to 10 percent oxygen.

(9) As an alternative to the work practice standard in §63.7700(e) for a scrap preheater at an existing iron and steel foundry or in §63.7700(f) for a scrap preheater at a new iron and steel foundry, you must not discharge emissions of VOHAP through a conveyance to the atmosphere that exceed 20 ppmv.

(10) For one or more automated conveyor and pallet cooling lines that use a sand mold system or automated shakeout lines that use a sand mold system at a new iron and steel foundry, you must not discharge emissions of VOHAP through a conveyance to the atmosphere that exceed a flow-weighted average of 20 ppmv.

(11) For each triethylamine (TEA) cold box mold or core making line at a new or existing iron and steel foundry, you must meet either the emissions limit in paragraph (a)(11)(i) of this section or, alternatively the emissions standard in paragraph (a)(11)(ii) of this section:

(i) You must not discharge emissions of TEA through a conveyance to the atmosphere that exceed 1 ppmv, as determined according to theperformance test procedures in § 63.7732(g); or

(ii) You must reduce emissions of TEA from each TEA cold box mold or core making line by at least 99 percent, as determined according to the performance test procedures in § 63.7732(g).

(b) You must meet each operating limit in paragraphs (b)(1) through (5) of this section that applies to you.

(1) You must install, operate, and maintain a capture and collection system for all emissions sources subject to an emissions limit for VOHAP or TEA in paragraphs (a)(8) through (11) of this section.

(i) Each capture and collection system must meet accepted engineering standards, such as those published by the American Conference of Governmental Industrial Hygienists.

(ii) You must operate each capture system at or above the lowest value or settings established as operating limits in your operation and maintenance plan.

(2) You must operate each wet scrubber applied to emissions from a metal melting furnace, scrap preheater, pouring area, or pouring station subject to an emissions limit for PM or total metal HAP in paragraphs (a)(1) through (6) of this section such that the 3-hour average pressure drop and scrubber water flow rate does not fall below the minimum levels established during the initial or subsequent performance test.

(3) You must operate each combustion device applied to emissions from a cupola metal melting furnace subject to the emissions limit for VOHAP in paragraph (a)(8) of this section, such that the 15-minute average combustion zone temperature does not fall below 1,300 degrees Fahrenheit ( °F). Periods when the cupola is off blast and for 15 minutes after going on blast from an off blast condition are not included in the 15-minute average.

(4) You must operate each combustion device applied to emissions from a scrap preheater subject to the emissions limit for VOHAP in paragraph (a)(9) of this section or from a TEA cold box mold or core making line subject to the emissions limit for TEA in paragraph (a)(11) of this section, such that the 3-hour average combustion zone temperature does not fall below the minimum level established during the initial or subsequent performance test.

(5) You must operate each wet acid scrubber applied to emissions from a TEA cold box mold or core making line subject to the emissions limit for TEA in paragraph (a)(11) of this section such that:

(i) The 3-hour average scrubbing liquid flow rate does not fall below the minimum level established during the initial or subsequent performance test; and

(ii) The 3-hour average pH of the scrubber blowdown, as measured by a continuous parameter monitoring system (CPMS), does not exceed 4.5 or the pH of the scrubber blowdown, as measured once every 8 hours during process operations, does not exceed 4.5.

(c) If you use a control device other than a baghouse, wet scrubber, wet acid scrubber, or combustion device, you must prepare and submit a monitoring plan containing the information listed in paragraphs (c)(1) through (5) of this section. The monitoring plan is subject to approval by the Administrator.

(1) A description of the device;

(2) Test results collected in accordance with §63.7732 verifying the performance of the device for reducing emissions of PM, total metal HAP, VOHAP, or TEA to the levels required by this subpart;

(3) A copy of the operation and maintenance plan required by §63.7710(b);

(4) A list of appropriate operating parameters that will be monitored to maintain continuous compliance with the applicable emissions limitation(s); and

(5) Operating parameter limits based on monitoring data collected during the performance test.

[69 FR 21923, Apr. 22, 2004, as amended at 73 FR 7218, February 7, 2008]

**Work Practice Standards**

**§ 63.7700 What work practice standards must I meet?**

(a) For each segregated scrap storage area, bin or pile, you must either comply with the certification requirements in paragraph (b) of this section, or prepare and implement a plan for the selection and inspection of scrap according to the requirements in paragraph (c) of this section. You may have certain scrap subject to paragraph (b) of this section and other scrap subject to paragraph (c) of this section at your facility provided the scrap remains segregated until charge make-up.

(b) You must prepare and operate at all times according to a written certification that the foundry purchases and uses only metal ingots, pig iron, slitter, or other materials that do not include post-consumer automotive body scrap, post-consumer engine blocks, post-consumer oil filters, oily turnings, lead components, mercury switches, plastics, or free organic liquids. For the purpose of this paragraph (b), “free organic liquids” is defined as material that fails the paint filter test by EPA Method 9095A, “Paint Filter Liquids Test” (Revision 1, December 1996), as published in EPA Publication SW–846 “Test Methods for Evaluating Solid Waste, Physical/Chemical Methods” (incorporated by reference—see §63.14). Any post-consumer engine blocks, post-consumer oil filters, or oily turnings that are processed and/or cleaned to the extent practicable such that the materials do not include lead components, mercury switches, chlorinated plastics, or free organic liquids can be included in this certification.

(c) You must prepare and operate at all times according to a written plan for the selection and inspection of iron and steel scrap to minimize, to the extent practicable, the amount of organics and HAP metals in the charge materials used by the iron

and steel foundry. This scrap selection and inspection plan is subject to approval by the Administrator. You must keep a copy of the plan onsite and readily available to all plant personnel with materials acquisition or inspection duties. You must provide a copy of the material specifications to each of your scrap vendors. Each plan must include the information specified in paragraphs (c)(1) through (3) of this section.

(1) A materials acquisition program to limit organic contaminants according to the requirements in paragraph (c)(1)(i) or (ii) of this section, as applicable.

(i) For scrap charged to a scrap preheater, electric arc metal melting furnace, or electric induction metal melting furnace, specifications for scrap materials to be depleted (to the extent practicable) of the presence of used oil filters, chlorinated plastic parts, organic liquids, and a program to ensure the scrap materials are drained of free liquids; or

(ii) For scrap charged to a cupola metal melting furnace, specifications for scrap materials to be depleted (to the extent practicable) of the presence of chlorinated plastic, and a program to ensure the scrap materials are drained of free liquids.

(2) A materials acquisition program specifying that the scrap supplier remove accessible mercury switches from the trunks and hoods of any automotive bodies contained in the scrap and remove accessible lead components such as batteries and wheel weights. You must either obtain and maintain onsite a copy of the procedures used by the scrap supplier for either removing accessible mercury switches or for purchasing automobile bodies that have had mercury switches removed, as applicable, or document your attempts to obtain a copy of these procedures from the scrap suppliers servicing your area.

(3) Procedures for visual inspection of a representative portion, but not less than 10 percent, of all incoming scrap shipments to ensure the materials meet the specifications.

(i) The inspection procedures must identify the location(s) where inspections are to be performed for each type of shipment. Inspections may be performed at the scrap supplier's facility. The selected location(s) must provide a reasonable vantage point, considering worker safety, for visual inspection.

(ii) The inspection procedures must include recordkeeping requirements that document each visual inspection and the results.

(iii) The inspection procedures must include provisions for rejecting or returning entire or partial scrap shipments that do not meet specifications and limiting purchases from vendors whose shipments fail to meet specifications for more than three inspections in one calendar year.

(iv) If the inspections are performed at the scrap supplier's facility, the inspection procedures must include an explanation of how the periodic inspections ensure that not less than 10 percent of scrap purchased from each supplier is subject to inspection.

(d) For each furan warm box mold or core making line in a new or existing iron and steel foundry, you must use a binder chemical formulation that does not contain methanol as a specific ingredient of the catalyst formulation as determined by the Material Safety Data Sheet. This requirement does not apply to the resin portion of the binder system.

(e) For each scrap preheater at an existing iron and steel foundry, you must meet either the requirement in paragraph (e)(1) or (2) of this section. As an alternative to the requirement in paragraph (e)(1) or (2) of this section, you must meet the VOHAP emissions limit in §63.7690(a)(9).

(1) You must operate and maintain a gas-fired preheater where the flame directly contacts the scrap charged; or

(2) You must charge only material that is subject to and in compliance with the scrap certification requirement in paragraph (b) of this section.

(f) For each scrap preheater at a new iron and steel foundry, you must charge only material that is subject to and in compliance with the scrap certification requirement in paragraph (b) of this section. As an alternative to this requirement, you must meet the VOHAP emissions limit in §63.7690(a)(9).

[69 FR 21923, Apr. 22, 2004, as amended at 70 FR 29404, May 20, 2005; 73 FR 7218, February 7, 2008]

**Operation and Maintenance Requirements**

**§ 63.7710 What are my operation and maintenance requirements?**

(a) As required by §63.6(e)(1)(i), you must always operate and maintain your iron and steel foundry, including air pollution control and monitoring equipment, in a manner consistent with good air pollution control practices for minimizing emissions at least to the levels required by this subpart.

(b) You must prepare and operate at all times according to a written operation and maintenance plan for each capture and collection system and control device for an emissions source subject to a PM, metal HAP, TEA, or VOHAP emissions limit in §63.7690(a). Your operation and maintenance plan also must include procedures for igniting gases from mold vents in pouring areas and pouring stations that use a sand mold system. This operation and maintenance plan is subject to approval by the Administrator. Each plan must contain the elements described in paragraphs (b)(1) through (6) of this section.

(1) Monthly inspections of the equipment that is important to the performance of the total capture system ( i.e., pressure sensors, dampers, and damper switches). This inspection must include observations of the physical appearance of the equipment ( e.g., presence of holes in the ductwork or hoods, flow constrictions caused by dents or accumulated dust in the ductwork, and fan erosion). The operation and maintenance plan must also include requirements to repair the defect or deficiency as soon as practicable.

(2) Operating limits for each capture system for an emissions source subject to an emissions limit or standard for VOHAP or TEA in §63.7690(a)(8) through (11). You must establish the operating according to the requirements in paragraphs (b)(2)(i) through (iii) of this section.

(i) Select operating limit parameters appropriate for the capture system design that are representative and reliable indicators of the performance of the capture system. At a minimum, you must use appropriate operating limit parameters that indicate the level of the ventilation draft and damper position settings for the capture system when operating to collect emissions, including revised settings for seasonal variations. Appropriate operating limit parameters for ventilation draft include, but are not limited to: volumetric flow rate through each separately ducted hood, total volumetric flow rate at the inlet to the control device to which the capture system is vented, fan motor amperage, or static pressure. Any parameter for damper position setting may be used that indicates the duct damper position related to the fully open setting.

(ii) For each operating limit parameter selected in paragraph (b)(2)(i) of this section, designate the value or setting for the parameter at which the capture system operates during the process operation. If your operation allows for more than one process to be operating simultaneously, designate the value or setting for the parameter at which the capture system operates during each possible configuration that you may operate ( i.e., the operating limits with one furnace melting, two melting, as applicable to your plant).

(iii) Include documentation in your plan to support your selection of the operating limits established for your capture system. This documentation must include a description of the capture system design, a description of the capture system operating during production, a description of each selected operating limit parameter, a rationale for why you chose the parameter, a description of the method used to monitor the parameter according to the requirements of §63.7740(a), and the data used to set the value or setting for the parameter for each of your process configurations.

(3) Preventative maintenance plan for each control device, including a preventative maintenance schedule that is consistent with the manufacturer's instructions for routine and long-term maintenance.

(4) A site-specific monitoring plan for each bag leak detection system. For each bag leak detection system that operates on the triboelectric effect, the monitoring plan must be consistent with the recommendations contained in the U.S. Environmental Protection Agency guidance document “Fabric Filter Bag Leak Detection Guidance” (EPA–454/R–98–015). This baghouse monitoring plan is subject to approval by the Administrator. The owner or operator shall operate and maintain the bag leak detection system according to the site-specific monitoring plan at all times. The plan must address all of the items identified in paragraphs (b)(4)(i) through (v) of this section.

(i) Installation of the bag leak detection system.

(ii) Initial and periodic adjustment of the bag leak detection system including how the alarm set-point will be established.

(iii) Operation of the bag leak detection system including quality assurance procedures.

(iv) How the bag leak detection system will be maintained including a routine maintenance schedule and spare parts inventory list.

(v) How the bag leak detection system output will be recorded and stored.

(5) Corrective action plan for each baghouse. The plan must include the requirement that, in the event a bag leak detection system alarm is triggered, you must initiate corrective action to determine the cause of the alarm within 1 hour of the alarm, initiate corrective action to correct the cause of the problem within 24 hours of the alarm, and complete the corrective action as soon as practicable. Corrective actions taken may include, but are not limited to:

(i) Inspecting the baghouse for air leaks, torn or broken bags or filter media, or any other condition that may cause an increase in emissions.

(ii) Sealing off defective bags or filter media.

(iii) Replacing defective bags or filter media or otherwise repairing the control device.

(iv) Sealing off a defective baghouse compartment.

(v) Cleaning the bag leak detection system probe or otherwise repairing the bag leak detection system.

(vi) Making process changes.

(vii) Shutting down the process producing the PM emissions.

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

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

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

[69 FR 21923, Apr. 22, 2004, as amended at 73 FR 7218, February 7, 2008]

**General Compliance Requirements**

**§ 63.7720 What are my general requirements for complying with this subpart?**

(a) You must be in compliance with the emissions limitations, work practice standards, and operation and maintenance requirements in this subpart at all times, except during periods of startup, shutdown, or malfunction.

(b) During the period between the compliance date specified for your iron and steel foundry in §63.7683 and the date when applicable operating limits have been established during the initial performance test, you must maintain a log detailing the operation and maintenance of the process and emissions control equipment.

(c) You must develop a written startup, shutdown, and malfunction plan according to the provisions in §63.6(e)(3). The startup, shutdown, and malfunction plan also must specify what constitutes a shutdown of a cupola and how to determine that operating conditions are normal following startup of a cupola.

[69 FR 21923, Apr. 22, 2004, as amended at 71 FR 20468, Apr. 20, 2006]

**Initial Compliance Requirements**

**§ 63.7730 By what date must I conduct performance tests or other initial compliance demonstrations?**

(a) As required by §63.7(a)(2), you must conduct a performance test no later than 180 calendar days after the compliance date that is specified in §63.7683 for your iron and steel foundry to demonstrate initial compliance with each emissions limitation in §63.7690 that applies to you.

(b) For each work practice standard in §63.7700 and each operation and maintenance requirement in §63.7710 that applies to you where initial compliance is not demonstrated using a performance test, you must demonstrate initial compliance no later than 30 calendar days after the compliance date that is specified for your iron and steel foundry in §63.7683.

(c) If you commenced construction or reconstruction between December 23, 2002 and April 22, 2004, you must demonstrate initial compliance with either the proposed emissions limit or the promulgated emissions limit no later than October 19, 2004 or no later than 180 calendar days after startup of the source, whichever is later, according to §63.7(a)(2)(ix).

(d) If you commenced construction or reconstruction between December 23, 2002 and April 22, 2004, and you chose to comply with the proposed emissions limit when demonstrating initial compliance, you must conduct a second performance test to demonstrate compliance with the promulgated emissions limit by October 19, 2007 or after startup of the source, whichever is later, according to §63.7(a)(2)(ix).

**§ 63.7731 When must I conduct subsequent performance tests?**

(a) You must conduct subsequent performance tests to demonstrate compliance with all applicable PM or total metal HAP, VOHAP, and TEA emissions limitations in §63.7690 for your iron and steel foundry no less frequently than every 5 years and each time you elect to change an operating limit or to comply with a different alternative emissions limit, if applicable. The requirement to conduct performance tests every 5 years does not apply to an emissions source for which a continuous emissions monitoring system (CEMS) is used to demonstrate continuous compliance.

(b) You must conduct subsequent performance tests to demonstrate compliance with the opacity limit in §63.7690(a)(7) for your iron and steel foundry no less frequently than once every 6 months.

[69 FR 21923, Apr. 22, 2004, as amended at 73 FR 7219, February 7, 2008]

**§ 63.7732 What test methods and other procedures must I use to demonstrate initial compliance with the emissions limitations?**

(a) You must conduct each performance test that applies to your iron and steel foundry based on your selected compliance alternative, if applicable, according to the requirements in §63.7(e)(1) and the conditions specified in paragraphs (b) through (i) of this section.

(b) To determine compliance with the applicable emissions limit for PM in §63.7690(a)(1) through (6) for a metal melting furnace, scrap preheater, pouring station, or pouring area, follow the test methods and procedures in paragraphs (b)(1) through (6) of this section.

(1) Determine the concentration of PM according to the test methods in 40 CFR part 60, appendix A that are specified in paragraphs (b)(1)(i) through (v) of this section.

(i) Method 1 or 1A to select sampling port locations and the number of traverse points in each stack or duct. Sampling sites must be located at the outlet of the control device (or at the outlet of the emissions source if no control device is present) prior to any releases to the atmosphere.

(ii) Method 2, 2A, 2C, 2D, 2F, or 2G to determine the volumetric flow rate of the stack gas.

(iii) Method 3, 3A, or 3B to determine the dry molecular weight of the stack gas.

(iv) Method 4 to determine the moisture content of the stack gas.

(v) Method 5, 5B, 5D, 5F, or 5I, as applicable, to determine the PM concentration. The PM concentration is determined using only the front-half (probe rinse and filter) of the PM catch.

(2) Collect a minimum sample volume of 60 dscf of gas during each PM sampling run. A minimum of three valid test runs are needed to comprise a performance test.

(3) For cupola metal melting furnaces, sample only during times when the cupola is on blast.

(4) For electric arc and electric induction metal melting furnaces, sample only during normal production conditions, which may include, but are not limited to the following cycles: Charging, melting, alloying, refining, slagging, and tapping.

(5) For scrap preheaters, sample only during normal production conditions, which may include, but are not limited to the following cycles: Charging, heating, and discharging.

(6) Determine the total mass of metal charged to the furnace or scrap preheater. For a cupola metal melting furnace at an existing iron and steel foundry that is subject to the PM emissions limit in §63.7690(a)(ii), calculate the PM emissions rate in pounds of PM per ton (lb/ton) of metal charged using Equation 1 of this section:

$$EF_{PM} = C_{PM} x \left( \frac{Q}{M_{charge}} \right) x \left( \frac{t_{test}}{7{,}000} \right) \qquad \text{(Eq. 1)}$$

Where:

$EF_{PM}$ = Mass emissions rate of PM, pounds of PM per ton (lb/ton) of metal charged;

$C_{PM}$ = Concentration of PM measured during performance test run, gr/dscf;

Q = Volumetric flow rate of exhaust gas, dry standard cubic feet per minute (dscfm);

$M_{charge}$ = Mass of metal charged during performance test run, tons;

$t_{test}$ = Duration of performance test run, minutes; and
7,000 = Unit conversion factor, grains per pound (gr/lb).

(c) To determine compliance with the applicable emissions limit for total metal HAP in § 63.7690(a)(1) through (6) for a metal melting furnace, scrap preheater, pouring station, or pouring area, follow the test methods and procedures in paragraphs (c)(1) through (6) of this section.

(1) Determine the concentration of total metal HAP according to the test methods in 40 CFR part 60, appendix A that are specified in paragraphs (c)(1)(i) through (v) of this section.

(i) Method 1 or 1A to select sampling port locations and the number of traverse points in each stack or duct. Sampling sites must be located at the outlet of the control device (or at the outlet of the emissions source if no control device is present) prior to any releases to the atmosphere.

(ii) Method 2, 2A, 2C, 2D, 2F, or 2G to determine the volumetric flow rate of the stack gas.

(iii) Method 3, 3A, or 3B to determine the dry molecular weight of the stack gas.

(iv) Method 4 to determine the moisture content of the stack gas.

(v) Method 29 to determine the total metal HAP concentration.

(2) A minimum of three valid test runs are needed to comprise a performance test.

(3) For cupola metal melting furnaces, sample only during times when the cupola is on blast.

(4) For electric arc and electric induction metal melting furnaces, sample only during normal production conditions, which may include, but are not limited to the following cycles: Charging, melting, alloying, refining, slagging, and tapping.

(5) For scrap preheaters, sample only during normal production conditions, which may include, but are not limited to the following cycles: Charging, heating, and discharging.

(6) Determine the total mass of metal charged to the furnace or scrap preheater during each performance test run and calculate the total metal HAP emissions rate (pounds of total metal HAP per ton (lb/ton) of metal charged) using Equation 2 of this section:

$$EF_{TMHAP} = C_{TMHAP} x \left( \frac{Q}{M_{charge}} \right) x \left( \frac{t_{test}}{7{,}000} \right) \qquad \text{(Eq. 2)}$$

Where:

$EF_{TMHAP}$ = Emissions rate of total metal HAP, pounds of total metal HAP per ton (lb/ton) of metal charged;

$C_{TMHAP}$ = Concentration of total metal HAP measured during performance test run, gr/dscf;

Q = Volumetric flow rate of exhaust gas, dscfm;

$M_{charge}$ = Mass of metal charged during performance test run, tons;

$t_{test}$ = Duration of performance test run, minutes; and

7,000 = Unit conversion factor, gr/lb.

(d) To determine compliance with the opacity limit in §63.7690(a)(7) for fugitive emissions from buildings or structures housing any iron and steel foundry emissions source at the iron and steel foundry, follow the procedures in paragraphs (d)(1) and (2) of this section.

(1) Using a certified observer, conduct each opacity test according to the requirements in EPA Method 9 (40 CFR part 60, appendix A) and §63.6(h)(5). The certified observer may identify a limited number of openings or vents that appear to have the highest opacities and perform opacity observations on the identified openings or vents in lieu of performing observations for each opening or vent from the building or structure. Alternatively, a single opacity observation for the entire building or structure may be performed, if the fugitive release points afford such an observation.

(2) During testing intervals when PM performance tests, if applicable, are being conducted, conduct the opacity test such the opacity observations are recorded during the PM performance tests.

(e) To determine compliance with the applicable VOHAP emissions limit in §63.7690(a)(8) for a cupola metal melting furnace or in §63.7690(a)(9) for a scrap preheater, follow the test methods and procedures in paragraphs (e)(1) through (4) of this section.

(1) Determine the VOHAP concentration for each test run according to the test methods in 40 CFR part 60, appendix A that are specified in paragraphs (b)(1)(i) through (v) of this section.

(i) Method 1 or 1A to select sampling port locations and the number of traverse points in each stack or duct. Sampling sites must be located at the outlet of the control device (or at the outlet of the emissions source if no control device is present) prior to any releases to the atmosphere.

(ii) Method 2, 2A, 2C, 2D, 2F, or 2G to determine the volumetric flow rate of the stack gas.

(iii) Method 3, 3A, or 3B to determine the dry molecular weight of the stack gas.

(iv) Method 4 to determine the moisture content of the stack gas.

(v) Method 18 to determine the VOHAP concentration. Alternatively, you may use Method 25 to determine the concentration of total gaseous nonmethane organics (TGNMO) or Method 25A to determine the concentration of total organic compounds (TOC), using hexane as the calibration gas.

(2) Determine the average VOHAP, TGNMO, or TOC concentration using a minimum of three valid test runs. Each test run must include a minimum of 60 continuous operating minutes.

(3) For a cupola metal melting furnace, correct the measured concentration of VOHAP, TGNMO, or TOC for oxygen content in the gas stream using Equation 3 of this section:

$$C_{VOHAP,10\%O_2} = C_{VOHAP}\left(\frac{10.9\%}{20.9\% - \%O_2}\right) \qquad \text{(Eq. 3)}$$

Where:

$C_{VOHAP}$ = Concentration of VOHAP in ppmv as measured by Method 18 in 40 CFR part 60, appendix A or the concentration of TGNMO or TOC in ppmv as hexane as measured by Method 25 or 25A in 40 CFR part 60, appendix A; and

$\%O_2$ = Oxygen concentration in gas stream, percent by volume (dry basis).

(4) For a cupola metal melting furnace, measure the combustion zone temperature of the combustion device with the CPMS required in §63.7740(d) during each sampling run in 15-minute intervals. Determine and record the 15-minute average of the three runs.

(f) Follow the applicable procedures in paragraphs (f)(1) through (3) of this section to determine compliance with the VOHAP emissions limit in §63.7690(a)(10) for automated pallet cooling lines or automated shakeout lines.

(1) Follow these procedures to demonstrate compliance by direct measurement of total hydrocarbons (a surrogate for VOHAP) using a volatile organic compound (VOC) CEMS.

(i) Using the VOC CEMS required in §63.7740(g), measure and record the concentration of total hydrocarbons (as hexane) for 180 continuous operating minutes. You must measure emissions at the outlet of the control device (or at the outlet of the emissions source if no control device is present) prior to any releases to the atmosphere.

(ii) Reduce the monitoring data to hourly averages as specified in §63.8(g)(2).

(iii) Compute and record the 3-hour average of the monitoring data.

(2) As an alternative to the procedures in paragraph (f)(1) of this section, you may demonstrate compliance with the VOHAP emissions limit in §63.7690(a)(10) by establishing a site-specific TOC emissions limit that is correlated to the VOHAP emissions limit according to the procedures in paragraph (f)(2)(i) through (ix) of this section.

(i) Determine the VOHAP concentration for each test run according to the test methods in 40 CFR part 60, appendix A that are specified in paragraph (f)(2)(ii) through (vi) of this section.

(ii) Method 1 or 1A to select sampling port locations and the number of traverse points in each stack or duct. Sampling sites must be located at the outlet of the control device (or at the outlet of the emissions source if no control device is present) prior to any releases to the atmosphere.

(iii) Method 2, 2A, 2C, 2D, 2F, or 2G to determine the volumetric flow rate of the stack gas.

(iv) Method 3, 3A, or 3B to determine the dry molecular weight of the stack gas.

(v) Method 4 to determine the moisture content of the stack gas.

(vi) Method 18 to determine the VOHAP concentration. Alternatively, you may use Method 25 to determine the concentration of TGNMO using hexane as the calibration gas.

(vii) Using the CEMS required in §63.7740(g), measure and record the concentration of total hydrocarbons (as hexane) during each of the Method 18 (or Method 25) sampling runs. You must measure emissions at the outlet of the control device (or at the outlet of the emissions source if no control device is present) prior to any releases to the atmosphere.

(viii) Calculate the average VOHAP (or TGNMO) concentration for the source test as the arithmetic average of the concentrations measured for the individual test runs, and determine the average concentration of total hydrocarbon (as hexane) as measured by the CEMS during all test runs.

(ix) Calculate the site-specific VOC emissions limit using Equation 4 of this section:

$$VOC_{limit} = 20x\frac{C_{VOHAP,avg}}{C_{CEM}} \qquad \text{(Eq. 4)}$$

Where:

$C_{VOHAP,avg}$ = Average concentration of VOHAP for the source test in ppmv as measured by Method 18 in 40 CFR part 60, appendix A or the average concentration of TGNMO for the source test in ppmv as hexane as measured by Method 25 in 40 CFR part 60, appendix A; and

$C_{CEM}$ = Average concentration of total hydrocarbons in ppmv as hexane as measured using the CEMS during the source test.

(3) For two or more exhaust streams from one or more automated conveyor and pallet cooling lines or automated shakeout lines, compute the flow-weighted average concentration of VOHAP emissions for each combination of exhaust streams using Equation 5 of this section:

$$C_W = \frac{\sum_{i=1}^{n} C_i Q_i}{\sum_{i=1}^{n} Q_i} \qquad \text{(Eq. 5)}$$

Where:

$C_W$ = Flow-weighted concentration of VOHAP or VOC, ppmv (as hexane);

$C_i$ = Concentration of VOHAP or VOC from exhaust stream ‘‘i’’, ppmv (as hexane);

n = Number of exhaust streams sampled; and

$Q_i$ = Volumetric flow rate of effluent gas from exhaust stream ‘‘i,’’, dscfm.

(g) To determine compliance with the emissions limit or standard in §63.7690(a)(11) for a TEA cold box mold or core making line, follow the test methods in 40 CFR part 60, appendix A, specified in paragraphs (g)(1) through (4) of this section.

(1) Determine the TEA concentration for each test run according to the test methods in 40 CFR part 60, appendix A that are specified in paragraphs (g)(1)(i) through (v) of this section.

(i) Method 1 or 1A to select sampling port locations and the number of traverse points in each stack or duct. If you elect to meet the 99 percent reduction standard, sampling sites must be located both at the inlet to the control device and at the outlet of the control device prior to any releases to the atmosphere. If you elect to meet the concentration limit, the sampling site must be located at the outlet of the control device (or at the outlet of the emissions source if no control device is present) prior to any releases to the atmosphere.

(ii) Method 2, 2A, 2C, 2D, 2F, or 2G to determine the volumetric flow rate of the stack gas.

(iii) Method 3, 3A, or 3B to determine the dry molecular weight of the stack gas.

(iv) Method 4 to determine the moisture content of the stack gas.

(v) Method 18 to determine the TEA concentration. Alternatively, you may use NIOSH Method 2010 (incorporated by reference—see §63.14) to determine the TEA concentration provided the performance requirements outlined in section 13.1 of EPA Method 18 are satisfied. The sampling option and time must be sufficiently long such that either the TEA concentration in the field sample is at least 5 times the limit of detection for the analytical method or the test results calculated using the laboratory's reported analytical detection limit for the specific field samples are less than 1/5 of the applicable emissions limit. When using
Method 18, the adsorbent tube approach, as described in section 8.2.4 of Method 18, may be required to achieve the necessary analytical detection limits. The sampling time must be at least 1 hour in all cases.

(2) If you use a wet acid scrubber, conduct the test as soon as practicable after adding fresh acid solution and the system has reached normal operating conditions.

(3) If you use a wet acid scrubber that is subject to the operating limit in §63.7690(b)(5)(ii) for pH level, determine the pH of the scrubber blowdown using the procedures in paragraph (g)(3)(i) or (ii) of this section.

(i) Measure the pH of the scrubber blowdown with the CPMS required in §63.7740(f)(2) during each TEA sampling run in intervals of no more than 15 minutes. Determine and record the 3-hour average; or

(ii) Measure and record the pH level using the probe and meter required in §63.7740(f)(2) once each sampling run. Determine and record the average pH level for the three runs.

(4) If you are subject to the 99 percent reduction standard, calculate the mass emissions reduction using Equation 6 of this section:

$$\%\text{reduction} = \frac{E_i - E_o}{E_i} x100\% \qquad \text{(Eq. 6)}$$

Where:

$E_i$ = Mass emissions rate of TEA at control device inlet, kilograms per hour (kg/hr); and

$E_o$ = Mass emissions rate of TEA at control device outlet, kg/hr.

(h) To determine compliance with the PM or total metal HAP emissions limits in §63.7690(a)(1) through (6) when one or more regulated emissions sources are combined with either another regulated emissions source subject to a different emissions limit or other non-regulated emissions sources, you may demonstrate compliance using one of the procedures in paragraphs (h)(1) through (3) of this section.

(1) Meet the most stringent applicable emissions limit for the regulated emissions sources included in the combined emissions stream for the combined emissions stream.

(2) Use the procedures in paragraphs (h)(2)(i) through (iii) of this section.

(i) Determine the volumetric flow rate of the individual regulated streams for which emissions limits apply.

(ii) Calculate the flow-weighted average emissions limit, considering only the regulated streams, using Equation 5 of this section, except $C_w$ is the flow-weighted average emissions limit for PM or total metal HAP in the exhaust stream, gr/dscf; and $C_i$ is the concentration of PM or total metal HAP in exhaust stream "i", gr/dscf.

(iii) Meet the calculated flow-weighted average emissions limit for the regulated emissions sources included in the combined emissions stream for the combined emissions stream.

(3) Use the procedures in paragraphs (h)(3)(i) through (iii) of this section.

(i) Determine the PM or total metal HAP concentration of each of the regulated streams prior to the combination with other exhaust streams or control device.

(ii) Measure the flow rate and PM or total metal HAP concentration of the combined exhaust stream both before and after the control device and calculate the mass removal efficiency of the control device using Equation 6 of this section, except $E_i$ is

the mass emissions rate of PM or total metal HAP at the control device inlet, lb/hr and $E_o$ is the mass emissions rate of PM or total metal HAP at the control device outlet, lb/hr.

(iii) Meet the applicable emissions limit based on the calculated PM or total metal HAP concentration for the regulated emissions sources using Equation 7 of this section:

$$C_{released} = C_i x\left(1 - \frac{\%reduction}{100}\right) \qquad \text{(Eq. 7)}$$

Where:

$C_{released}$= Calculated concentration of PM (or total metal HAP) predicted to be released to the atmosphere from the regulated emissions source, gr/dscf; and

$C_i$= Concentration of PM (or total metal HAP) in the uncontrolled regulated exhaust stream, gr/dscf.

(i) To determine compliance with an emissions limit for situations when multiple sources are controlled by a single control device, but only one source operates at a time, or other situations that are not expressly considered in paragraphs (b) through (h) of this section, a site-specific test plan should be submitted to the Administrator for approval according to the requirements in § 63.7(c)(2) and (3).

[69 FR 21923, Apr. 22, 2004, as amended at 73 FR 7219, February 7, 2008]

**§ 63.7733 What procedures must I use to establish operating limits?**

(a) For each capture system subject to operating limits in §63.7690(b)(1)(ii), you must establish site-specific operating limits in your operation and maintenance plan according to the procedures in paragraphs (a)(1) through (3) of this section.

(1) Concurrent with applicable emissions and opacity tests, measure and record values for each of the operating limit parameters in your capture system operation and maintenance plan according to the monitoring requirements in §63.7740(a).

(2) For any dampers that are manually set and remain at the same position at all times the capture system is operating, the damper position must be visually checked and recorded at the beginning and end of each run.

(3) Review and record the monitoring data. Identify and explain any times the capture system operated outside the applicable operating limits.

(b) For each wet scrubber subject to the operating limits in §63.7690(b)(2) for pressure drop and scrubber water flow rate, you must establish site-specific operating limits according to the procedures specified in paragraphs (b)(1) and (2) of this section.

(1) Using the CPMS required in §63.7740(c), measure and record the pressure drop and scrubber water flow rate in intervals of no more than 15 minutes during each PM test run.

(2) Compute and record the average pressure drop and average scrubber water flow rate for each valid sampling run in which the applicable emissions limit is met.

(c) For each combustion device applied to emissions from a scrap preheater or TEA cold box mold or core making line subject to the operating limit in §63.7690(b)(4) for combustion zone temperature, you must establish a site-specific operating limit according to the procedures specified in paragraphs (c)(1) and (2) of this section.

(1) Using the CPMS required in §63.7740(e), measure and record the combustion zone temperature during each sampling run in intervals of no more than 15 minutes.

(2) Compute and record the average combustion zone temperature for each valid sampling run in which the applicable emissions limit is met.

(d) For each acid wet scrubber subject to the operating limit in §63.7690(b)(5), you must establish a site-specific operating limit for scrubbing liquid flow rate according to the procedures specified in paragraphs (d)(1) and (2) of this section.

(1) Using the CPMS required in §63.7740(f), measure and record the scrubbing liquid flow rate during each TEA sampling run in intervals of no more than 15 minutes.

(2) Compute and record the average scrubbing liquid flow rate for each valid sampling run in which the applicable emissions limit is met.

(e) You may change the operating limits for a capture system, wet scrubber, acid wet scrubber, or combustion device if you meet the requirements in paragraphs (e)(1) through (3) of this section.

(1) Submit a written notification to the Administrator of your request to conduct a new performance test to revise the operating limit.

(2) Conduct a performance test to demonstrate compliance with the applicable emissions limitation in §63.7690.

(3) Establish revised operating limits according to the applicable procedures in paragraphs (a) through (d) of this section.

(f) You may use a previous performance test (conducted since December 22, 2002) to establish an operating limit provided the test meets the requirements of this subpart.

[69 FR 21923, Apr. 22, 2004, as amended at 73 FR 7221, February 7, 2008]

**§ 63.7734 How do I demonstrate initial compliance with the emissions limitations that apply to me?**

(a) You have demonstrated initial compliance with the emissions limits in §63.7690(a) by meeting the applicable conditions in paragraphs (a)(1) through (11) of this section. When alternative emissions limitations are provided for a given emissions source, you are not restricted in the selection of which applicable alternative emissions limitation is used to demonstrate compliance.

(1) For each electric arc metal melting furnace, electric induction metal melting furnace, or scrap preheater at an existing iron and steel foundry,

(i) The average PM concentration in the exhaust stream, determined according to the performance test procedures in §63.7732(b), did not exceed 0.005 gr/dscf; or

(ii) The average total metal HAP concentration in the exhaust stream, determined according to the performance test procedures in §63.7732(c), did not exceed 0.0004 gr/dscf.

(2) For each cupola metal melting furnace at an existing iron and steel foundry,

(i) The average PM concentration in the exhaust stream, determined according to the performance test procedures in §63.7732(b), did not exceed 0.006 gr/dscf; or

(ii) The average total metal HAP concentration in the exhaust stream, determined according to the performance test procedures in §63.7732(c), did not exceed 0.0005 gr/dscf; or

(iii) The average PM mass emissions rate, determined according to the performance test procedures in §63.7732(b), did not exceed 0.10 pound of PM per ton (lb/ton) of metal charged; or

(iv) The average total metal HAP mass emissions rate, determined according to the performance test procedures in §63.7732(c), did not exceed 0.008 pound of total metal HAP per ton (lb/ton) of metal charged.

(3) For each cupola metal melting furnace or electric arc metal melting furnace at a new iron and steel foundry,

(i) The average PM concentration in the exhaust stream, determined according to the performance test procedures in §63.7732(b), did not exceed 0.002 gr/dscf; or

(ii) The average total metal HAP concentration in the exhaust stream, determined according to the performance test procedures in §63.7732(c), did not exceed 0.0002 gr/dscf.

(4) For each electric induction metal melting furnace or scrap preheater at a new iron and steel foundry,

(i) The average PM concentration in the exhaust stream, determined according to the performance test procedures in §63.7732(b), did not exceed 0.001 gr/dscf; or

(ii) The average total metal HAP concentration in the exhaust stream, determined according to the performance test procedures in §63.7732(c), did not exceed 0.00008 gr/dscf.

(5) For each pouring station at an existing iron and steel foundry,

(i) The average PM concentration in the exhaust stream, measured according to the performance test procedures in §63.7732(b), did not exceed 0.010 gr/dscf; or

(ii) The average total metal HAP concentration in the exhaust stream, determined according to the performance test procedures in §63.7732(c), did not exceed 0.0008 gr/dscf.

(6) For each pouring area or pouring station at a new iron and steel foundry,

(i) The average PM concentration in the exhaust stream, measured according to the performance test procedures in §63.7732(b), did not exceed 0.002 gr/dscf; or

(ii) The average total metal HAP concentration in the exhaust stream, determined according to the performance test procedures in §63.7732(c), did not exceed 0.0002 gr/dscf.

(7) For each building or structure housing any iron and steel foundry emissions source at the iron and steel foundry, the opacity of fugitive emissions from foundry operations discharged to the atmosphere, determined according to the performance test procedures in §63.7732(d), did not exceed 20 percent (6-minute average), except for one 6-minute average per hour that did not exceed 27 percent opacity.

(8) For each cupola metal melting furnace at a new or existing iron and steel foundry, the average VOHAP concentration, determined according to the performance test procedures in §63.7732(e), did not exceed 20 ppmv corrected to 10 percent oxygen.

(9) For each scrap preheater at an existing iron and steel foundry that does not meet the work practice standards in §63.7700(e)(1) or (2) and for each scrap preheater at a new iron and steel foundry that does not meet the work practice standard in §63.7700(f), the average VOHAP concentration determined according to the performance test procedures in §63.7732(e), did not exceed 20 ppmv.

(10) For one or more automated conveyor and pallet cooling lines that use a sand mold system or automated shakeout lines that use a sand mold system at a new foundry,

(i) You have reduced the data from the CEMS to 3-hour averages according to the performance test procedures in §63.7732(f)(1) or (2); and

(ii) The 3-hour flow-weighted average VOHAP concentration, measured according to the performance test procedures in §63.7332(f)(1) or (2), did not exceed 20 ppmv.

(11) For each TEA cold box mold or core making line in a new or existing iron and steel foundry, the average TEA concentration, determined according to the performance test procedures in §63.7732(g), did not exceed 1 ppmv or was reduced by 99 percent.

(b) You have demonstrated initial compliance with the operating limits in §63.7690(b) if:

(1) For each capture system subject to the operating limit in §63.7690(b)(1)(ii),

(i) You have established appropriate site-specific operating limits in your operation and maintenance plan according to the requirements in §63.7710(b); and

(ii) You have a record of the operating parameter data measured during the performance test in accordance with §63.7733(a); and

(2) For each wet scrubber subject to the operating limits in §63.7690(b)(2) for pressure drop and scrubber water flow rate, you have established appropriate site-specific operating limits and have a record of the pressure drop and scrubber water flow rate measured during the performance test in accordance with §63.7733(b).

(3) For each combustion device subject to the operating limit in §63.7690(b)(3) for combustion zone temperature, you have a record of the combustion zone temperature measured during the performance test in accordance with §63.7732(e)(4).

(4) For each combustion device subject to the operating limit in §63.7690(b)(4) for combustion zone temperature, you have established appropriate site-specific operating limits and have a record of the combustion zone temperature measured during the performance test in accordance with §63.7733(c).

(5) For each acid wet scrubber subject to the operating limits in §63.7690(b)(5) for scrubbing liquid flow rate and scrubber blowdown pH,

(i) You have established appropriate site-specific operating limits for the scrubbing liquid flow rate and have a record of the scrubbing liquid flow rate measured during the performance test in accordance with §63.7733(d); and

(ii) You have a record of the pH of the scrubbing liquid blowdown measured during the performance test in accordance with §63.7732(g)(3).

[69 FR 21923, Apr. 22, 2004, as amended at 73 FR 7221, February 7, 2008]

**§ 63.7735 How do I demonstrate initial compliance with the work practice standards that apply to me?**

(a) For each iron and steel foundry subject to the certification requirement in §63.7700(b), you have demonstrated initial compliance if you have certified in your notification of compliance status that: “At all times, your foundry will purchase and use only metal ingots, pig iron, slitter, or other materials that do not include post-consumer automotive body scrap, post-consumer engine blocks, post-consumer oil filters, oily turnings, lead components, mercury switches, plastics, or free organic liquids.”

(b) For each iron and steel foundry subject to the requirements in §63.7700(c) for a scrap inspection and selection plan, you have demonstrated initial compliance if you have certified in your notification of compliance status that:

(1) You have submitted a written plan to the Administrator for approval according to the requirements in §63.7700(c); and

(2) You will operate at all times according to the plan requirements.

(c) For each furan warm box mold or core making line in a new or existing foundry subject to the work practice standard in §63.7700(d), you have demonstrated initial compliance if you have certified in your notification of compliance status that:

(1) You will meet the no methanol requirement for the catalyst portion of each binder chemical formulation; and

(2) You have records documenting your certification of compliance, such as a material safety data sheet (provided that it contains appropriate information), a certified product data sheet, or a manufacturer's hazardous air pollutant data sheet, onsite and available for inspection.

(d) For each scrap preheater at an existing iron and steel foundry subject to the work practice standard in §63.7700(e)(1) or (2), you have demonstrated initial compliance if you have certified in your notification of compliance status that:

(1) You have installed a gas-fired preheater where the flame directly contacts the scrap charged, you will operate and maintain each gas-fired scrap preheater such that the flame directly contacts the scrap charged, and you have records documenting your certification of compliance that are onsite and available for inspection; or

(2) You will charge only material that is subject to and in compliance with the scrap certification requirements in §63.7700(b) and you have records documenting your certification of compliance that are onsite and available for inspection.

(e) For each scrap preheater at a new iron and steel foundry subject to the work practice standard in §63.7700(f), you have demonstrated initial compliance if you have certified in your notification of compliance status that you will charge only material that is subject to and in compliance with the scrap certification requirements in §63.7700(b) and you have records documenting your certification of compliance that are onsite and available for inspection.

[69 FR 21923, Apr. 22, 2004, as amended at 70 FR 29404, May 20, 2005]

**§ 63.7736 How do I demonstrate initial compliance with the operation and maintenance requirements that apply to me?**

(a) For each capture system subject to an operating limit in §63.7690(b), you have demonstrated initial compliance if you have met the conditions in paragraphs (a)(1) and (2) of this section.

(1) You have certified in your notification of compliance status that:

(i) You have submitted the capture system operation and maintenance plan to the Administrator for approval according to the requirements of §63.7710(b); and

(ii) You will inspect, operate, and maintain each capture system according to the procedures in the plan.

(2) You have certified in your performance test report that the system operated during the test at the operating limits established in your operation and maintenance plan.

(b) For each control device subject to an operating limit in §63.7690(b), you have demonstrated initial compliance if you have certified in your notification of compliance status that:

(1) You have submitted the control device operation and maintenance plan to the Administrator for approval according to the requirements of §63.7710(b); and

(2) You will inspect, operate, and maintain each control device according to the procedures in the plan.

(c) For each bag leak detection system, you have demonstrated initial compliance if you have certified in your notification of compliance status that:

(1) You have submitted the bag leak detection system monitoring information to the Administrator within the written O&M plan for approval according to the requirements of §63.7710(b);

(2) You will inspect, operate, and maintain each bag leak detection system according to the procedures in the plan; and

(3) You will follow the corrective action procedures for bag leak detection system alarms according to the requirements in the plan.

(d) For each pouring area and pouring station in a new or existing foundry, you have demonstrated initial compliance if you have certified in your notification of compliance status report that:

(1) You have submitted the mold vent ignition plan to the Administrator for approval according to the requirements in §63.7710(b); and

(2) You will follow the procedures for igniting mold vent gases according to the requirements in the plan.

[69 FR 21923, Apr. 22, 2004, as amended at 73 FR 7221, February 7, 2008]

**Continuous Compliance Requirements**

**§ 63.7740 What are my monitoring requirements?**

(a) For each capture system subject to an operating limit in §63.7690(b)(1), you must install, operate, and maintain a CPMS according to the requirements in §63.7741(a) and the requirements in paragraphs (a)(1) and (2) of this section.

(1) If you use a flow measurement device to monitor the operating limit parameter, you must at all times monitor the hourly average rate ( e.g., the hourly average actual volumetric flow rate through each separately ducted hood or the average hourly total volumetric flow rate at the inlet to the control device).

(2) Dampers that are manually set and remain in the same position are exempt from the requirement to install and operate a CPMS. If dampers are not manually set and remain in the same position, you must make a visual check at least once every 24 hours to verify that each damper for the capture system is in the same position as during the initial performance test.

(b) For each negative pressure baghouse or positive pressure baghouse equipped with a stack that is applied to meet any PM or total metal HAP emissions limitation in this subpart, you must at all times monitor the relative change in PM loadings using a bag leak detection system according to the requirements in § 63.7741(b).

(c) For each baghouse, regardless of type, that is applied to meet any PM or total metal HAP emissions limitation in this subpart, you must conduct inspections at their specified frequencies according to the requirements specified in paragraphs (c)(1) through (8) of this section.

(1) Monitor the pressure drop across each baghouse cell each day to ensure pressure drop is within the normal operating range identified in the manual.

(2) Confirm that dust is being removed from hoppers through weekly visual inspections or other means of ensuring the proper functioning of removal mechanisms.

(3) Check the compressed air supply for pulse-jet baghouses each day.

(4) Monitor cleaning cycles to ensure proper operation using an appropriate methodology.

(5) Check bag cleaning mechanisms for proper functioning through monthly visual inspections or equivalent means.

(6) Make monthly visual checks of bag tension on reverse air and shaker-type baghouses to ensure that bags are not kinked (kneed or bent) or lying on their sides. You do not have to make this check for shaker-type baghouses using self-tensioning (spring-loaded) devices.

(7) Confirm the physical integrity of the baghouse through quarterly visual inspections of the baghouse interior for air leaks.

(8) Inspect fans for wear, material buildup, and corrosion through quarterly visual inspections, vibration detectors, or equivalent means.

(d) For each wet scrubber subject to the operating limits in §63.7690(b)(2), you must at all times monitor the 3-hour average pressure drop and scrubber water flow rate using CPMS according to the requirements in §63.7741(c).

(e) For each combustion device subject to the operating limit in §63.7690(b)(3), you must at all times monitor the 15-minute average combustion zone temperature using a CPMS according to the requirements of §63.7741(d).

(f) For each combustion device subject to the operating limit in §63.7690(b)(4), you must at all times monitor the 3-hour average combustion zone temperature using CPMS according to the requirements in §63.7741(d).

(g) For each wet acid scrubber subject to the operating limits in §63.7690(b)(5),

(1) You must at all times monitor the 3-hour average scrubbing liquid flow rate using CPMS according to the requirements of §63.7741(e)(1); and

(2) You must at all times monitor the 3-hour average pH of the scrubber blowdown using CPMS according to the requirements in §63.7741(e)(2) or measure and record the pH of the scrubber blowdown once per production cycle using a pH probe and meter according to the requirements in §63.7741(e)(3).

(h) For one or more automated conveyor and pallet cooling lines and automated shakeout lines at a new iron and steel foundry subject to the VOHAP emissions limit in §63.7690(a)(10), you must at all times monitor the 3-hour average VOHAP concentration using a CEMS according to the requirements of §63.7741(g).

[69 FR 21923, Apr. 22, 2004, as amended at 73 FR 7221, February 7, 2008]

**§ 63.7741 What are the installation, operation, and maintenance requirements for my monitors?**

(a) For each capture system subject to an operating limit in §63.7690(b)(1), you must install, operate, and maintain each CPMS according to the requirements in paragraphs (a)(1) through (3) of this section.

(1) If you use a flow measurement device to monitor an operating limit parameter for a capture system, you must meet the requirements in paragraphs (a)(1)(i) through (iv) of this section.

(i) Locate the flow sensor and other necessary equipment such as straightening vanes in a position that provides a representative flow and that reduces swirling flow or abnormal velocity distributions due to upstream and downstream disturbances.

(ii) Use a flow sensor with a minimum measurement sensitivity of 2 percent of the flow rate.

(iii) Conduct a flow sensor calibration check at least semiannually.

(iv) At least monthly, visually inspect all components, including all electrical and mechanical connections, for proper functioning.

(2) If you use a pressure measurement device to monitor the operating limit parameter for a capture system, you must meet the requirements in paragraphs (a)(2)(i) through (vi) of this section.

(i) Locate the pressure sensor(s) in or as close as possible to a position that provides a representative measurement of the pressure and that minimizes or eliminates pulsating pressure, vibration, and internal and external corrosion.

(ii) Use a gauge with a minimum measurement sensitivity of 0.5 inch of water or a transducer with a minimum measurement sensitivity of 1 percent of the pressure range.

(iii) Check the pressure tap for pluggage daily. If a ‘‘non-clogging’’ pressure tap is used, check for pluggage monthly.

(iv) Using a manometer or equivalent device such as a magnahelic or other pressure indicating transmitter, check gauge and transducer calibration quarterly.

(v) Conduct calibration checks any time the sensor exceeds the manufacturer's specified maximum operating pressure range, or install a new pressure sensor.

(vi) At least monthly, visually inspect all components, including all electrical and mechanical connections, for proper functioning.

(3) Record the results of each inspection, calibration, and validation check.

(b) For each negative pressure baghouse or positive pressure baghouse equipped with a stack that is applied to meet any PM or total metal HAP emissions limitation in this subpart, you must install, operate, and maintain a bag leak detection system according to the requirements in paragraphs (b)(1) through (7) of this section.

(1) The system must be certified by the manufacturer to be capable of detecting emissions of particulate matter at concentrations of 10 milligrams per actual cubic meter (0.0044 grains per actual cubic foot) or less.

(2) The bag leak detection system sensor must provide output of relative particulate matter loadings and the owner or operator shall continuously record the output from the bag leak detection system using electronic or other means ( e.g., using a strip chart recorder or a data logger).

(3) The system must be equipped with an alarm that will sound when an increase in relative particulate loadings is detected over the alarm set point established in the operation and maintenance plan, and the alarm must be located such that it can be heard by the appropriate plant personnel.

(4) The initial adjustment of the system must, at minimum, consist of establishing the baseline output by adjusting the sensitivity (range) and the averaging period of the device, and establishing the alarm set points and the alarm delay time (if applicable).

(5) Following the initial adjustment, do not adjust the sensitivity or range, averaging period, alarm set point, or alarm delay time without approval from the Administrator. Except, once per quarter, you may adjust the sensitivity of the bag leak detection system to account for seasonable effects including temperature and humidity according to the procedures in the operation and maintenance plan required by §63.7710(b).

(6) For negative pressure, induced air baghouses, and positive pressure baghouses that are discharged to the atmosphere through a stack, the bag leak detector sensor must be installed downstream of the baghouse and upstream of any wet scrubber.

(7) Where multiple detectors are required, the system's instrumentation and alarm may be shared among detectors.

(c) For each wet scrubber subject to the operating limits in §63.7690(b)(2), you must install and maintain CPMS to measure and record the pressure drop and scrubber water flow rate according to the requirements in paragraphs (c)(1) and (2) of this section.

(1) For each CPMS for pressure drop you must:

(i) Locate the pressure sensor in or as close as possible to a position that provides a representative measurement of the pressure drop and that minimizes or eliminates pulsating pressure, vibration, and internal and external corrosion.

(ii) Use a gauge with a minimum measurement sensitivity of 0.5 inch of water or a transducer with a minimum measurement sensitivity of 1 percent of the pressure range.

(iii) Check the pressure tap for pluggage daily. If a ‘‘non-clogging’’ pressure tap is used, check for pluggage monthly

(iv) Using a manometer or equivalent device such as a magnahelic or other pressure indicating transmitter, check gauge and transducer calibration quarterly.

(v) Conduct calibration checks any time the sensor exceeds the manufacturer's specified maximum operating pressure range, or install a new pressure sensor.

(vi) At least monthly, visually inspect all components, including all electrical and mechanical connections, for proper functioning.

(2) For each CPMS for scrubber liquid flow rate, you must:

(i) Locate the flow sensor and other necessary equipment in a position that provides a representative flow and that reduces swirling flow or abnormal velocity distributions due to upstream and downstream disturbances.

(ii) Use a flow sensor with a minimum measurement sensitivity of 2 percent of the flow rate.

(iii) Conduct a flow sensor calibration check at least semiannually according to the manufacturer's instructions.

(iv) At least monthly, visually inspect all components, including all electrical and mechanical connections, for proper functioning.

(d) For each combustion device subject to the operating limit in §63.7690(b)(3) or (4), you must install and maintain a CPMS to measure and record the combustion zone temperature according to the requirements in paragraphs (d)(1) through (8) of this section.

(1) Locate the temperature sensor in a position that provides a representative temperature.

(2) For a noncryogenic temperature range, use a temperature sensor with a minimum tolerance of 2.2 °C or 0.75 percent of the temperature value, whichever is larger.

(3) For a cryogenic temperature range, use a temperature sensor with a minimum tolerance of 2.2 °C or 2 percent of the temperature value, whichever is larger.

(4) Shield the temperature sensor system from electromagnetic interference and chemical contaminants.

(5) If you use a chart recorder, it must have a sensitivity in the minor division of at least 20 °F.

(6) Perform an electronic calibration at least semiannually according to the procedures in the manufacturer's owners manual. Following the electronic calibration, conduct a temperature sensor validation check, in which a second or redundant temperature sensor placed nearby the process temperature sensor must yield a reading within 16.7 °C of the process temperature sensor's reading.

(7) Conduct calibration and validation checks any time the sensor exceeds the manufacturer's specified maximum operating temperature range, or install a new temperature sensor.

(8) At least monthly, visually inspect all components, including all electrical and mechanical connections, for proper functioning.

(e) For each wet acid scrubber subject to the operating limits in §63.7690(b)(5), you must:

(1) Install and maintain CPMS to measure and record the scrubbing liquid flow rate according to the requirements in paragraph (c)(2) of this section; and

(2) Install and maintain CPMS to measure and record the pH of the scrubber blowdown according to the requirements in paragraph (e)(2)(i) through (iv) of this section.

(i) Locate the pH sensor in a position that provides a representative measurement of the pH and that minimizes or eliminates internal and external corrosion.

(ii) Use a gauge with a minimum measurement sensitivity of 0.1 pH or a transducer with a minimum measurement sensitivity of 5 percent of the pH range.

(iii) Check gauge calibration quarterly and transducer calibration monthly using a manual pH gauge.

(iv) At least monthly, visually inspect all components, including all electrical and mechanical connections, for proper functioning.

(3) As an alternative to the CPMS required in paragraph (e)(2) of this section, you may use a pH probe to extract a sample for analysis by a pH meter that meets the requirements in paragraphs (e)(3)(i) through (iii) of this section.

(i) The pH meter must have a range of at least 1 to 5 or more;

(ii) The pH meter must have an accuracy of ±0.1; and

(iii) The pH meter must have a resolution of at least 0.1 pH.

(f) You must operate each CPMS used to meet the requirements of this subpart according to the requirements specified in paragraphs (f)(1) through (3) of this section.

(1) Each CPMS must complete a minimum of one cycle of operation for each successive 15-minute period. You must have a minimum of three of the required four data points to constitute a valid hour of data.

(2) Each CPMS must have valid hourly data for 100 percent of every averaging period.

(3) Each CPMS must determine and record the hourly average of all recorded readings and the 3-hour average of all recorded readings.

(g) For each automated conveyor and pallet cooling line and automated shakeout line at a new iron and steel foundry subject to the VOHAP emissions limit in §63.7690(a)(10), you must install, operate, and maintain a CEMS to measure and record the concentration of VOHAP emissions according to the requirements in paragraphs (g)(1) through (3) of this section.

(1) You must install, operate, and maintain each CEMS according to Performance Specification 8 in 40 CFR part 60, appendix B.

(2) You must conduct a performance evaluation of each CEMS according to the requirements of §63.8 and Performance Specification 8 in 40 CFR part 60, appendix B.

(3) You must operate each CEMS according to the requirements specified in paragraph (g)(3)(i) through (iv) of this section.

(i) As specified in §63.8(c)(4)(ii), each CEMS must complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period.

(ii) You must reduce CEMS data as specified in §63.8(g)(2).

(iii) Each CEMS must determine and record the 3-hour average emissions using all the hourly averages collected for periods during which the CEMS is not out-of-control.

(iv) Record the results of each inspection, calibration, and validation check.

[69 FR 21923, Apr. 22, 2004, as amended at 73 FR 7221, February 7, 2008]

**§ 63.7742 How do I monitor and collect data to demonstrate continuous compliance?**

(a) Except for monitoring malfunctions, associated repairs, and required quality assurance or control activities (including as applicable, calibration checks and required zero and span adjustments), you must monitor continuously (or collect data at all required intervals) any time a source of emissions is operating.

(b) You may not use data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities in data averages and calculations used to report emissions or operating levels or to fulfill a minimum data availability requirement, if applicable. You must use all the data collected during all other periods in assessing compliance.

(c) A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring system to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions.

**§ 63.7743 How do I demonstrate continuous compliance with the emissions limitations that apply to me?**

(a) You must demonstrate continuous compliance by meeting the applicable conditions in paragraphs (a)(1) through (12) of this section. When alternative emissions limitations are provided for a given emissions source, you must comply with the alternative emissions limitation most recently selected as your compliance alternative.

(1) For each electric arc metal melting furnace, electric induction metal melting furnace, or scrap preheater at an existing iron and steel foundry,

(i) Maintaining the average PM concentration in the exhaust stream at or below 0.005 gr/dscf; or

(ii) Maintaining the average total metal HAP concentration in the exhaust stream at or below 0.0004 gr/dscf.

(2) For each cupola metal melting furnace at an existing iron and steel foundry,

(i) Maintaining the average PM concentration in the exhaust stream at or below 0.006 gr/dscf; or

(ii) Maintaining the average total metal HAP concentration in the exhaust stream at or below 0.0005 gr/dscf; or

(iii) Maintaining the average PM mass emissions rate at or below 0.10 pound of PM per ton (lb/ton) of metal charged; or

(iv) Maintaining the average total metal HAP mass emissions rate at or below 0.008 pound of total metal HAP per ton (lb/ton) of metal charged.

(3) For each cupola metal melting furnace or electric arc metal melting furnace at new iron and steel foundry, (i) Maintaining the average PM concentration in the exhaust stream at or below 0.002 gr/dscf; or

(ii) Maintaining the average total metal HAP concentration in the exhaust stream at or below 0.0002 gr/dscf.

(4) For each electric induction metal melting furnace or scrap preheater at a new iron and steel foundry,

(i) Maintaining the average PM concentration in the exhaust stream at or below 0.001 gr/dscf; or

(ii) Maintaining the average total metal HAP concentration in the exhaust stream at or below 0.00008 gr/dscf.

(5) For each pouring station at an existing iron and steel foundry,

(i) Maintaining the average PM concentration in the exhaust stream at or below 0.010 gr/dscf; or

(ii) Maintaining the average total metal HAP concentration in the exhaust stream at or below 0.0008 gr/dscf.

(6) For each pouring area or pouring station at a new iron and steel foundry,

(i) Maintaining the average PM concentration in the exhaust stream at or below 0.002 gr/dscf; or

(ii) Maintaining the average total metal HAP concentration in the exhaust stream at or below 0.0002 gr/dscf.

(7) For each building or structure housing any iron and steel foundry emissions source at the iron and steel foundry, maintaining the opacity of any fugitive emissions from foundry operations discharged to the atmosphere at or below 20 percent opacity (6-minute average), except for one 6-minute average per hour that does not exceed 27 percent opacity.

(8) For each cupola metal melting furnace at a new or existing iron and steel foundry, maintaining the average VOHAP concentration in the exhaust stream at or below 20 ppmv corrected to 10 percent oxygen.

(9) For each scrap preheater at an existing new iron and steel foundry that does not comply with the work practice standard in §63.7700(e)(1) or (2) and for each scrap preheater at a new iron and steel foundry that does not comply with the work practice standard in §63.7700(f), maintaining the average VOHAP concentration in the exhaust stream at or below 20 ppmv.

(10) For one or more automated conveyor and pallet cooling lines or automated shakeout lines that use a sand mold system at a new iron and steel foundry,

(i) Maintaining the 3-hour flow-weighted average VOHAP concentration in the exhaust stream at or below 20 ppmv;

(ii) Inspecting and maintaining each CEMS according to the requirements of §63.7741(g) and recording all information needed to document conformance with these requirements; and

(iii) Collecting and reducing monitoring data for according to the requirements of §63.7741(g) and recording all information needed to document conformance with these requirements.

(11) For each TEA cold box mold or core making line at a new or existing iron and steel foundry, maintaining a 99 percent reduction in the VOHAP concentration in the exhaust stream or maintaining the average VOHAP concentration in the exhaust stream at or below 1 ppmv.

(12) Conducting subsequent performance tests at least every 5 years for each emissions source subject to an emissions limit for PM, total metal HAP, VOHAP, or TEA in §63.7690(a) and subsequent performance tests at least every 6 months for each building or structure subject to the opacity limit in §63.7690(a)(7).

(b) You must demonstrate continuous compliance for each capture system subject to an operating limit in §63.7690(b)(1) by meeting the requirements in paragraphs (b)(1) and (2) of this section.

(1) Operating the capture system at or above the lowest values or settings established for the operating limits in your operation and maintenance plan; and

(2) Monitoring the capture system according to the requirements in §63.7740(a) and collecting, reducing, and recording the monitoring data for each of the operating limit parameters according to the applicable requirements in this subpart.

(c) For each baghouse,

(1) Inspecting and maintaining each baghouse according to the requirements of §63.7740(c)(1) through (8) and recording all information needed to document conformance with these requirements; and

(2) If the baghouse is equipped with a bag leak detection system, maintaining records of the times the bag leak detection system sounded, and for each valid alarm, the time you initiated corrective action, the corrective action taken, and the date on which corrective action was completed.

(d) For each wet scrubber that is subject to the operating limits in §63.7690(b)(2), you must demonstrate continuous compliance by:

(1) Maintaining the 3-hour average pressure drop and 3-hour average scrubber water flow rate at levels no lower than those established during the initial or subsequent performance test;

(2) Inspecting and maintaining each CPMS according to the requirements of §63.7741(c) and recording all information needed to document conformance with these requirements; and

(3) Collecting and reducing monitoring data for pressure drop and scrubber water flow rate according to the requirements of §63.7741(f) and recording all information needed to document conformance with these requirements.

(e) For each combustion device that is subject to the operating limit in §63.7690(b)(3), you must demonstrate continuous compliance by:

(1) Maintaining the 15-minute average combustion zone temperature at a level no lower than 1,300 °F;

(2) Inspecting and maintaining each CPMS according to the requirements of §63.7741(d) and recording all information needed to document conformance with these requirements; and

(3) Collecting and reducing monitoring data for combustion zone temperature according to the requirements of §63.7741(f) and recording all information needed to document conformance with these requirements.

(f) For each combustion device that is subject to the operating limit in §63.7690(b)(4), you must demonstrate continuous compliance by:

(1) Maintaining the 3-hour average combustion zone temperature at a level no lower that established during the initial or subsequent performance test;

(2) Inspecting and maintaining each CPMS according to the requirements of §63.7741(d) and recording all information needed to document conformance with these requirements; and

(3) Collecting and reducing monitoring data for combustion zone temperature according to the requirements of §63.7741(f) and recording all information needed to document conformance with these requirements.

(g) For each acid wet scrubber subject to the operating limits in §63.7690(b)(5), you must demonstrate continuous compliance by:

(1) Maintaining the 3-hour average scrubbing liquid flow rate at a level no lower than the level established during the initial or subsequent performance test;

(2) Maintaining the 3-hour average pH of the scrubber blowdown at a level no higher than 4.5 (if measured by a CPMS) or maintaining the pH level of the scrubber blowdown during each production shift no higher than 4.5;

(3) Inspecting and maintaining each CPMS according to the requirements of §63.7741(e) and recording all information needed to document conformance with these requirements; and

(4) Collecting and reducing monitoring data for scrubbing liquid flow rate and scrubber blowdown pH according to the requirements of §63.7741(f) and recording all information needed to document conformance with these requirements. If the pH level of the scrubber blowdown is measured by a probe and meter, you must demonstrate continuous compliance by maintaining records that document the date, time, and results of each sample taken for each production shift.

[69 FR 21923, Apr. 22, 2004, as amended at 73 FR 7222, February 7, 2008]

**§ 63.7744 How do I demonstrate continuous compliance with the work practice standards that apply to me?**

(a) You must maintain records that document continuous compliance with the certification requirements in §63.7700(b) or with the procedures in your scrap selection and inspection plan required in §63.7700(c). Your records documenting compliance with the scrap selection and inspection plan must include a copy (kept onsite) of the procedures used by the scrap supplier for either removing accessible mercury switches or for purchasing automobile bodies that have had mercury switches removed, as applicable.

(b) You must keep records of the chemical composition of all catalyst binder formulations applied in each furan warm box mold or core making line at a new or existing iron and steel foundry to demonstrate continuous compliance with the requirements in §63.7700(d).

(c) For a scrap preheater at an existing iron and steel foundry, you must operate and maintain each gas-fired preheater such that the flame directly contacts the scrap charged to demonstrate continuous compliance with the requirement §63.7700(e)(1). If you choose to meet the work practice standard in §63.7700(e)(2), you must keep records to document that the scrap preheater charges only material that is subject to and in compliance with the scrap certification requirements in §63.7700(b).

(d) For a scrap preheater at a new iron and steel foundry, you must keep records to document that each scrap preheater charges only material that is subject to and in compliance with the scrap certification requirements in §63.7700(b) to demonstrate continuous compliance with the requirement in §63.7700(f).

**§ 63.7745 How do I demonstrate continuous compliance with the operation and maintenance requirements that apply to me?**

(a) For each capture system and control device for an emissions source subject to an emissions limit in §63.7690(a), you must demonstrate continuous compliance with the operation and maintenance requirements of §63.7710 by:

(1) Making monthly inspections of capture systems and initiating corrective action according to §63.7710(b)(1) and recording all information needed to document conformance with these requirements;

(2) Performing preventative maintenance for each control device according to the preventive maintenance plan required by §63.7710(b)(3) and recording all information needed to document conformance with these requirements;

(3) Operating and maintaining each bag leak detection system according to the site-specific monitoring plan required by §63.7710(b)(4) and recording all information needed to demonstrate conformance with these requirements;

(4) Initiating and completing corrective action for a bag leak detection system alarm according to the corrective action plan required by §63.7710(b)(5) and recording all information needed to document conformance with these requirements; and

(5) Igniting gases from mold vents according to the procedures in the plan required by §63.7710(b)(6). (Any instance where you fail to follow the procedures is a deviation that must be included in your semiannual compliance report.)

(b) You must maintain a current copy of the operation and maintenance plans required by §63.7710(b) onsite and available for inspection upon request. You must keep the plans for the life of the iron and steel foundry or until the iron and steel foundry is no longer subject to the requirements of this subpart.

**§ 63.7746 What other requirements must I meet to demonstrate continuous compliance?**

(a) Deviations. You must report each instance in which you did not meet each emissions limitation in §63.7690 (including each operating limit) that applies to you. This requirement includes periods of startup, shutdown, and malfunction. You also must report each instance in which you did not meet each work practice standard in §63.7700 and each operation and maintenance requirement of §63.7710 that applies to you. These instances are deviations from the emissions limitations, work practice standards, and operation and maintenance requirements in this subpart. These deviations must be reported according to the requirements of §63.7751.

(b) Startups, shutdowns, and malfunctions. (1) Consistent with the requirements of §§63.6(e) and 63.7(e)(1), deviations that occur during a period of startup, shutdown, or malfunction are not violations if you demonstrate to the Administrator's satisfaction that you were operating in accordance with §63.6(e)(1).

(2) The Administrator will determine whether deviations that occur during a period of startup, shutdown, or malfunction are violations according to the provisions in §63.6(e).

[69 FR 21923, Apr. 22, 2004, as amended at 71 FR 20468, Apr. 20, 2006]

**§ 63.7747 How do I apply for alternative monitoring requirements for a continuous emissions monitoring system?**

(a) You may request an alternative monitoring method to demonstrate compliance with the VOHAP emissions limits in §63.7690(a)(10) for automated pallet cooling lines or automated shakeout lines at a new iron and steel foundry according to the procedures in this section.

(b) You can request approval to use an alternative monitoring method in the notification of construction or reconstruction for new sources, or at any time.

(c) You must submit a monitoring plan that includes a description of the control technique or pollution prevention technique, a description of the continuous monitoring system or method including appropriate operating parameters that will be monitored, test results demonstrating compliance with the emissions limit, operating limit(s) (if applicable) determined according to the test results, and the frequency of measuring and recording to establish continuous compliance. If applicable, you must also include operation and maintenance requirements for the monitors.

(d) The monitoring plan is subject to approval by the Administrator. Use of the alternative monitoring method must not begin until approval is granted by the Administrator.

**Notifications, Reports, and Records**

**§ 63.7750 What notifications must I submit and when?**

(a) You must submit all of the notifications required by §§63.6(h)(4) and (5), 63.7(b) and (c); 63.8(e); 63.8(f)(4) and (6); 63.9(b) through (h) that apply to you by the specified dates.

(b) As specified in §63.9(b)(2), if you start up your iron and steel foundry before April 22, 2004, you must submit your initial notification no later than August 20, 2004.

(c) If you start up your new iron and steel foundry on or after April 22, 2004, you must submit your initial notification no later than 120 calendar days after you become subject to this subpart.

(d) If you are required to conduct a performance test, you must submit a notification of intent to conduct a performance test at least 60 calendar days before the performance test is scheduled to begin as required by §63.7(b)(1).

(e) If you are required to conduct a performance test or other initial compliance demonstration, you must submit a notification of compliance status according to the requirements of §63.9(h)(2)(ii). For opacity performance tests, the notification of compliance status may be submitted with the semiannual compliance report in §63.7751(a) and (b) or the semiannual part 70 monitoring report in § 63.7551(d).

(1) For each initial compliance demonstration that does not include a performance test, you must submit the notification of compliance status before the close of business on the 30th calendar day following completion of the initial compliance demonstration.

(2) For each initial compliance demonstration that does include a performance test, you must submit the notification of compliance status, including the performance test results, before the close of business on the 60th calendar day following the completion of the performance test according to the requirement specified in §63.10(d)(2).

**§ 63.7751 What reports must I submit and when?**

(a) Compliance report due dates. Unless the Administrator has approved a different schedule, you must submit a semiannual compliance report to your permitting authority according to the requirements specified in paragraphs (a)(1) through (5) of this section.

(1) The first compliance report must cover the period beginning on the compliance date that is specified for your iron and steel foundry by §63.7683 and ending on June 30 or December 31, whichever date comes first after the compliance date that is specified for your iron and steel foundry.

(2) The first compliance report must be postmarked or delivered no later than July 31 or January 31, whichever date comes first after your first compliance report is due.

(3) Each subsequent compliance report must cover the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31.

(4) Each subsequent compliance report must be postmarked or delivered no later than July 31 or January 31, whichever date comes first after the end of the semiannual reporting period.

(5) For each iron and steel foundry that is subject to permitting regulations pursuant to 40 CFR part 70 or 40 CFR part 71, and if the permitting authority has established dates for submitting semiannual reports pursuant to 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A), you may submit the first and subsequent compliance reports according to the dates the permitting authority has established instead of the dates specified in paragraphs (a)(1) through (4) of this section.

(b) Compliance report contents. Each compliance report must include the information specified in paragraphs (b)(1) through (3) of this section and, as applicable, paragraphs (b)(4) through (8) of this section.

(1) Company name and address.

(2) Statement by a responsible official, with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report.

(3) Date of report and beginning and ending dates of the reporting period.

(4) If you had a startup, shutdown, or malfunction during the reporting period and you took action consistent with your startup, shutdown, and malfunction plan, the compliance report must include the information in §63.10(d)(5)(i).

(5) If there were no deviations from any emissions limitations (including operating limit), work practice standards, or operation and maintenance requirements, a statement that there were no deviations from the emissions limitations, work practice standards, or operation and maintenance requirements during the reporting period.

(6) If there were no periods during which a continuous monitoring system (including a CPMS or CEMS) was out-of-control as specified by §63.8(c)(7), a statement that there were no periods during which the CPMS was out-of-control during the reporting period.

(7) For each deviation from an emissions limitation (including an operating limit) that occurs at an iron and steel foundry for which you are not using a continuous monitoring system (including a CPMS or CEMS) to comply with an emissions limitation or work practice standard required in this subpart, the compliance report must contain the information specified in paragraphs (b)(1) through (4) and (b)(7)(i) and (ii) of this section. This requirement includes periods of startup, shutdown, and malfunction.

(i) The total operating time of each emissions source during the reporting period.

(ii) Information on the number, duration, and cause of deviations (including unknown cause) as applicable and the corrective action taken.

(8) For each deviation from an emissions limitation (including an operating limit) or work practice standard occurring at an iron and steel foundry where you are using a continuous monitoring system (including a CPMS or CEMS) to comply with the emissions limitation or work practice standard in this subpart, you must include the information specified in paragraphs (b)(1) through (4) and (b)(8)(i) through (xi) of this section. This requirement includes periods of startup, shutdown, and malfunction.

(i) The date and time that each malfunction started and stopped.

(ii) The date and time that each continuous monitoring system was inoperative, except for zero (low-level) and high-level checks.

(iii) The date, time, and duration that each continuous monitoring system was out-of-control, including the information in §63.8(c)(8).

(iv) The date and time that each deviation started and stopped, and whether each deviation occurred during a period of startup, shutdown, or malfunction or during another period.

(v) A summary of the total duration of the deviations during the reporting period and the total duration as a percent of the total source operating time during that reporting period.

(vi) A breakdown of the total duration of the deviations during the reporting period into those that are due to startup, shutdown, control equipment problems, process problems, other known causes, and unknown causes.

(vii) A summary of the total duration of continuous monitoring system downtime during the reporting period and the total duration of continuous monitoring system downtime as a percent of the total source operating time during the reporting period.

(viii) A brief description of the process units.

(ix) A brief description of the continuous monitoring system.

(x) The date of the latest continuous monitoring system certification or audit.

(xi) A description of any changes in continuous monitoring systems, processes, or controls since the last reporting period.

(c) Immediate startup, shutdown, and malfunction report. If you had a startup, shutdown, or malfunction during the semiannual reporting period that was not consistent with your startup, shutdown, and malfunction plan and the source exceeds any applicable emissions limitation in § 63.7690, you must submit an immediate startup, shutdown, and malfunction report according to the requirements of §63.10(d)(5)(ii).

(d) Part 70 monitoring report. If you have obtained a title V operating permit for an iron and steel foundry pursuant to 40 CFR part 70 or 40 CFR part 71, you must report all deviations as defined in this subpart in the semiannual monitoring report required by 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A). If you submit a compliance report for an iron and steel foundry along with, or as part of, the semiannual monitoring report required by 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A), and the compliance report includes all the required information concerning deviations from any emissions limitation or operation and maintenance requirement in this subpart, submission of the compliance report satisfies any obligation to report the same deviations in the semiannual monitoring report. However, submission of a compliance report does not otherwise affect any obligation you may have to report deviations from permit requirements for an iron and steel foundry to your permitting authority.

[69 FR 21923, Apr. 22, 2004, as amended at 73 FR 7222, February 7, 2008]

**§ 63.7752 What records must I keep?**

(a) You must keep the records specified in paragraphs (a)(1) through (4) of this section:

(1) A copy of each notification and report that you submitted to comply with this subpart, including all documentation supporting any initial notification or notification of compliance status that you submitted, according to the requirements of §63.10(b)(2)(xiv).

(2) The records specified in §63.6(e)(3)(iii) through (v) related to startup, shutdown, and malfunction.

(3) Records of performance tests and performance evaluations as required by §63.10(b)(2)(viii).

(4) Records of the annual quantity of each chemical binder or coating material used to coat or make molds and cores, the Material Data Safety Sheet or other documentation that provides the chemical composition of each component, and the annual quantity of HAP used in these chemical binder or coating materials at the foundry as calculated from the recorded quantities and chemical compositions (from Material Data Safety Sheets or other documentation).

(b) You must keep the following records for each CEMS.

(1) Records described in §63.10(b)(2)(vi) through (xi).

(2) Previous ( i.e., superseded) versions of the performance evaluation plan as required in §63.8(d)(3).

(3) Request for alternatives to relative accuracy tests for CEMS as required in §63.8(f)(6)(i).

(4) Records of the date and time that each deviation started and stopped, and whether the deviation occurred during a period of startup, shutdown, or malfunction or during another period.

(c) You must keep the records required by §§63.7743, 63.7744, and 63.7745 to show continuous compliance with each emissions limitation, work practice standard, and operation and maintenance requirement that applies to you.

[69 FR 21923, Apr. 22, 2004, as amended at 73 FR 7222, February 7, 2008]

**§ 63.7753 In what form and for how long must I keep my records?**

(a) You must keep your records in a form suitable and readily available for expeditious review, according to the requirements of §63.10(b)(1).

(b) As specified in §63.10(b)(1), you must keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record.

(c) You must keep each record onsite for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record according to the requirements in §63.10(b)(1). You can keep the records for the previous 3 years offsite.

**Other Requirements and Information**

**§ 63.7760 What parts of the General Provisions apply to me?**

Table 1 to this subpart shows which parts of the General Provisions in §§63.1 through 63.15 apply to you.

**§ 63.7761 Who implements and enforces this subpart?**

(a) This subpart can be implemented and enforced by us, the U.S. Environmental Protection Agency (EPA), or a delegated authority such as your State, local, or tribal agency. If the U.S. EPA Administrator has delegated authority to your State, local, or tribal agency, then that agency, in addition to the U.S. EPA, has the authority to implement and enforce this subpart. You should contact your U.S. EPA Regional Office to find out if implementation and enforcement of this subpart is delegated to your State, local, or tribal agency.

(b) In delegating implementation and enforcement authority of this subpart to a State, local, or tribal agency under 40 CFR part 63, subpart E, the authorities contained in paragraph (c) of this section are retained by the Administrator of the U.S. EPA and are not transferred to the State, local, or tribal agency.

(c) The authorities that cannot be delegated to State, local, or tribal agencies are specified in paragraphs (c)(1) through (4) of this section.

(1) Approval of alternatives to non-opacity emissions limitations in §63.7690 and work practice standards in §63.7700 under §63.6(g).

(2) Approval of major alternatives to test methods under §63.7(e)(2)(ii) and (f) and as defined in §63.90.

(3) Approval of major alternatives to monitoring under §63.8(f) and as defined in §63.90.

(4) Approval of major alternatives to recordkeeping and reporting under §63.10(f) and as defined in §63.90.

**Definitions**

**§ 63.7765 What definitions apply to this subpart?**

Terms used in this subpart are defined in the Clean Air Act (CAA), in §63.2, and in this section.

*Automated conveyor and pallet cooling line* means any dedicated conveyor line or area used for cooling molds received from pouring stations.

*Automated shakeout line* means any mechanical process unit designed for and dedicated to separating a casting from a mold. These mechanical processes include, but are not limited to, shaker decks, rotary separators, and high-frequency vibration units. Automated shakeout lines do not include manual processes for separating a casting from a mold, such as personnel using a hammer, chisel, pick ax, sledge hammer, or jackhammer.

*Bag leak detection system* means a system that is capable of continuously monitoring relative particulate matter (dust) loadings in the exhaust of a baghouse to detect bag leaks and other upset conditions. A bag leak detection system includes, but is not limited to, an instrument that operates on triboelectric, electrodynamic, light scattering, light transmittance, or other effect to continuously monitor relative particulate matter loadings.

*Binder chemical* means a component of a system of chemicals used to bind sand together into molds, mold sections, and cores through chemical reaction as opposed to pressure.

*Capture system* means the collection of components used to capture gases and fumes released from one or more emissions points and then convey the captured gas stream to a control device or to the atmosphere. A capture system may include, but is not limited to, the following components as applicable to a given capture system design: duct intake devices, hoods, enclosures, ductwork, dampers, manifolds, plenums, and fans.

*Cold box mold or core making line* means a mold or core making line in which the formed aggregate is hardened by catalysis with a gas.

*Combustion device* means an afterburner, thermal incinerator, or scrap preheater.

*Conveyance* means the system of equipment that is designed to capture pollutants at the source, convey them through ductwork, and exhaust them using forced ventilation. A conveyance may, but does not necessarily include, control equipment designed to reduce emissions of the pollutants. Emissions that are released through windows, vents, or other general building ventilation or exhaust systems are not considered to be discharged through a conveyance.

*Cooling* means the process of molten metal solidification within the mold and subsequent temperature reduction prior to shakeout.

*Cupola* means a vertical cylindrical shaft furnace that uses coke and forms of iron and steel such as scrap and foundry returns as the primary charge components and melts the iron and steel through combustion of the coke by a forced upward flow of heated air.

*Deviation* means any instance in which an affected source or an owner or operator of such an affected source:

(1) Fails to meet any requirement or obligation established by this subpart including, but not limited to, any emissions limitation (including operating limits), work practice standard, or operation and maintenance requirement;

(2) Fails to meet any term or condition that is adopted to implement an applicable requirement in this subpart and that is included in the operating permit for any iron and steel foundry required to obtain such a permit; or

(3) Fails to meet any emissions limitation (including operating limits) or work practice standard in this subpart during startup, shutdown, or malfunction, regardless of whether or not such failure is permitted by this subpart. A deviation is not always a violation. The determination of whether a deviation constitutes a violation of the standard is up to the discretion of the entity responsible for enforcement of the standards.

*Electric arc furnace* means a vessel in which forms of iron and steel such as scrap and foundry returns are melted through resistance heating by an electric current flowing through the arcs formed between the electrodes and the surface of the metal and also flowing through the metal between the arc paths.

*Electric induction furnace* means a vessel in which forms of iron and steel such as scrap and foundry returns are melted though resistance heating by an electric current that is induced in the metal by passing an alternating current through a coil surrounding the metal charge or surrounding a pool of molten metal at the bottom of the vessel.

*Emissions limitation* means any emissions limit or operating limit.

*Exhaust stream* means gases emitted from a process through a conveyance as defined in this subpart.

*Free organic liquids* means material that fails the paint filter test by EPA Method 9095A (incorporated by reference—see §63.14). That is, if any portion of the material passes through and drops from the filter within the 5-minute test period, the material contains free liquids.

*Fresh acid solution* means a sulfuric acid solution used for the control of triethylamine emissions that has a pH of 2.0 or less.

*Fugitive emissions* means any pollutant released to the atmosphere that is not discharged through a conveyance as defined in this subpart.

*Furan warm box mold or core making line* means a mold or core making line in which the binder chemical system used is that system commonly designated as a furan warm box system by the foundry industry.

*Hazardous air pollutant* means any substance on the list originally established in 112(b)(1) of the CAA and subsequently amended as published in the Code of Federal Regulations.

*Iron and steel foundry* means a facility or portion of a facility that melts scrap, ingot, and/or other forms of iron and/or steel and pours the resulting molten metal into molds to produce final or near final shape products for introduction into commerce. Research and development facilities and operations that only produce non-commercial castings are not included in this definition.

*Metal melting furnace* means a cupola, electric arc furnace, or electric induction furnace that converts scrap, foundry returns, and/or other solid forms of iron and/or steel to a liquid state. This definition does not include a holding furnace, an argon oxygen decarburization vessel, or ladle that receives molten metal from a metal melting furnace, to which metal ingots or other material may be added to adjust the metal chemistry.

*Mold or core making line* means the collection of equipment that is used to mix an aggregate of sand and binder chemicals, form the aggregate into final shape, and harden the formed aggregate. This definition does not include a line for making green sand molds or cores.

*Mold vent* means an intentional opening in a mold through which gases containing pyrolysis products of organic mold and core constituents produced by contact with or proximity to molten metal normally escape the mold during and after metal pouring.

*Off blast* means those periods of cupola operation when the cupola is not actively being used to produce molten metal. Off blast conditions include cupola startup when air is introduced to the cupola to preheat the sand bed and other cupola startup procedures as defined in the startup, shutdown, and malfunction plan. Off blast conditions also include idling conditions when the blast air is turned off or down to the point that the cupola does not produce additional molten metal.

*On blast* means those periods of cupola operation when combustion (blast) air is introduced to the cupola furnace and the furnace is capable of producing molten metal. On blast conditions are characterized by both blast air introduction and molten metal production.

*Pouring area* means an area, generally associated with floor and pit molding operations, in which molten metal is brought to each individual mold. Pouring areas include all pouring operations that do not meet the definition of a pouring station.

*Pouring station* means the fixed location to which molds are brought in a continuous or semicontinuous manner to receive molten metal, after which the molds are moved to a cooling area.

*Responsible official* means responsible official as defined in §63.2.

*Scrap preheater* means a vessel or other piece of equipment in which metal scrap that is to be used as melting furnace feed is heated to a temperature high enough to eliminate volatile impurities or other tramp materials by direct flame heating or similar means of heating. Scrap dryers, which solely remove moisture from metal scrap, are not considered to be scrap preheaters for purposes of this subpart.

*Scrubber blowdown* means liquor or slurry discharged from a wet scrubber that is either removed as a waste stream or processed to remove impurities or adjust its composition or pH before being returned to the scrubber.

*Total metal HAP* means, for the purposes of this subpart, the sum of the concentrations of antimony, arsenic, beryllium, cadmium, chromium, cobalt, lead, manganese, mercury, nickel, and selenium as measured by EPA Method 29 (40 CFR part 60, appendix A). Only the measured concentration of the listed analytes that are present at concentrations exceeding one-half the quantitation limit of the analytical method are to be used in the sum. If any of the analytes are not detected or are detected at concentrations less than one-half the quantitation limit of the analytical method, the concentration of those analytes will be assumed to be zero for the purposes of calculating the total metal HAP for this subpart.

*Work practice standard* means any design, equipment, work practice, or operational standard, or combination thereof, that is promulgated pursuant to section 112(h) of the CAA.

[69 FR 21923, Apr. 22, 2004, as amended at 70 FR 29404, May 20, 2005; 73 FR 7222, February 7, 2008]

**Table 1 to Subpart EEEEE of Part 63—Applicability of General Provisions to Subpart EEEEE**

[As stated in §63.7760, you must meet each requirement in the following table that applies to you.]

| Citation | Subject | Applies to Subpart EEEEE? | Explanation |
|---|---|---|---|
| 63.1 | Applicability | Yes | |

| Citation | Subject | Applies to Subpart EEEEE? | Explanation |
|---|---|---|---|
| 63.2 | Definitions | Yes | |
| 63.3 | Units and abbreviations | Yes | |
| 63.4 | Prohibited activities | Yes | |
| 63.5 | Construction/reconstruction | Yes | |
| 63.6(a)–(g) | Compliance with standards and maintenance requirements | Yes | |
| 63.6(h) | Opacity and visible emissions standards | Yes | |
| 63.6(i)–(j) | Compliance extension and Presidential compliance exemption | Yes | |
| 63.7(a)(1)–(a)(2) | Applicability and performance test dates | No | Subpart EEEEE specifies applicability and performance test dates. |
| 63.7(a)(3), (b)–(h) | Performance testing requirements | Yes | |
| 63.8(a)(1)–(a)(3), (b), (c)(1)–(c)(3), (c)(6)–(c)(8), (d), (e), (f)(1)–(f)(6), (g)(1)–(g)(4) | Monitoring requirements | Yes | Subpart EEEEE specifies requirements for alternative monitoring systems. |
| 63.8(a)(4) | Additional monitoring requirements for control devices in §63.11 | No | Subpart EEEEE does not require flares. |
| 63.8(c)(4) | Continuous monitoring system (CMS) requirements | No | Subpart EEEEE specifies requirements for operation of CMS and CEMS. |
| 63.8(c)(5) | Continuous opacity monitoring system (COMS) Minimum Procedures | No | Subpart EEEEE does not require COMS. |
| 63.8(g)(5) | Data reduction | No | Subpart EEEEE specifies data reduction requirements. |
| 63.9 | Notification requirements | Yes | Except: for opacity performance tests, Subpart EEEEE allows the notification of compliance status to be submitted with the semiannual compliance report or the semiannual part 70 monitoring report. |
| 63.10(a)–(b), (c)(1)–(6), (c)(9)–(15), (d)(1)–(2), (e)(1)–(2), (f) | Recordkeeping and reporting requirements | Yes | Additional records for CMS in §63.10(c)(1)–(6), (9)–(15) apply only to CEMS. |
| 63.10(c)(7)–(8) | Records of excess emissions and parameter monitoring exceedances for CMS | No | Subpart EEEEE specifies records requirements. |
| 63.10(d)(3) | Reporting opacity or visible emissions observations | Yes | |
| 63.10(e)(3) | Excess emissions reports | No | Subpart EEEEE specifies reporting requirements. |
| 63.10(e)(4) | Reporting COMS data | No | Subpart EEEEE data does not require COMS. |
| 63.11 | Control device requirements | No | Subpart EEEEE does not require |

| Citation | Subject | Applies to Subpart EEEEE? | Explanation |
|---|---|---|---|
| | | | flares. |
| 63.12 | State authority and delegations | Yes | |
| 63.13–63.15 | Addresses of State air pollution control agencies and EPA regional offices. Incorporation by reference. Availability of information and confidentiality | Yes | |

[69 FR 21923, Apr. 22, 2004, as amended at 73 FR 7223, February 7, 2008]

# Indiana Department of Environmental Management
# Office of Air Quality

## Addendum to the Technical Support Document (TSD) for a Part 70 Operating Permit Renewal

### Source Description and Location

| | |
|---|---|
| Source Name: | Dalton Corporation, Warsaw Manufacturing Facility |
| Source Location: | 1900 E. Jefferson Street, Warsaw, Indiana 46580 |
| County: | Kosciusko |
| SIC Code: | 3321 |
| Permit Renewal No.: | T085-30768-00003 |
| Permit Reviewer: | Heath Hartley |

### Public Notice Information

On June 9, 2012, the Office of Air Quality (OAQ) had a notice published in the Times Union in Warsaw, Indiana, stating that the Dalton Corporation, Warsaw Manufacturing Facility had applied for a Part 70 Operating Permit Renewal. The notice also stated that OAQ proposed to issue a permit for this operation and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

### Comments Received

OAQ received comments from the following people (and groups of people):

- Dalton Corporation, Warsaw Manufacturing Facility

The comments are summarized in the subsequent pages, with IDEM's corresponding responses.

The IDEM does not amend the Technical Support Document (TSD). The TSD is maintained to document the original review. This addendum to the TSD is used to document comments, responses to comments and changes made from the time the permit was drafted until a final decision is made.

### Dalton Comments and IDEM's Responses

On July 9, 2012, OAQ received comments from Dalton Corporation, Warsaw Manufacturing Facility. The summary of the comments and IDEM, OAQ responses, including changes to the permit (language deleted is shown in ~~strikeout~~ and language added is shown in **bold**) are as follows:

## TSD – Appendix A Comments (Public Notice Copy contains 26 pages)

Page 1 of 26 Uncontrolled Potential to Emit (ton/yr)

**Comment 1:** VOC emissions for Line #9 listed include "HAP: Metals" emissions. The sum of the VOC emissions should be listed as 225.98 tons/year.

**Comment 2:** The total VOC emissions at the bottom of the table should be 3141.78 tons/year.

Page 2 of 26 Limited Potential to Emit (tons/yr)

(*A revised table has been provided with the following comments implemented*)

**Comment 3:** PM10 & PM2.5 emissions for Shot Blast Machines should be listed as 57.15 tons/year as summed in Total Emissions table on page 12.

**Comment 4:** PM, PM10, & PM2.5 emissions for Grinders should be listed as 28.56 tons/year as calculated in the first table on page 13.

**Comment 5:** Lead and Total HAPs emissions for Grinders should be listed as 0.25 tons/year as calculated in the first table on page 13.

**Comment 6:** VOC emissions for Phenolic Urethane Core Making Lines #1, #2, #3, #4, #5, & #8 all refer to summed totals in the column Limited PTE (tons/yr) in the tables on pages 15 and 16 of 26. This column currently shows catalyst emissions without the control device. All of the processes and pollutants in the Limited Potential to Emit table include emissions after the acceptance of a limitation and the control device. The tables on page 15 and 16 need to be revised to include a second column with the title "Limited & Controlled PTE (ton/yr)" that would include the control device for the catalyst and then list these total VOC emissions in the Limited Potential to Emit table. The existing table needs to be relabeled as "Limited & Uncontrolled PTE (ton/yr)". Revised tables for Phenolic Urethane Core Making Lines #1, #2, #3, #4, #5, & #8 have been provided with this submission.

**Comment 7:** VOC emissions for Line #9 listed include "HAP: Metals" emissions. The sum of the VOC emissions should be listed as 24.70 tons/year.

Page 8 of 26 Herman 3 Mold Line

**Comment 8:** There is not a combustion source to generate CO emissions in sand handling. Please strike the statement with the double star of "The CO emissions from sand handling are accounted for in the emission factor for shakeout" found under the Calculation Methodology section.

**Response 1 - 8:**

IDEM agrees with these changes. This addendum to the TSD is used to document these changes. As stated above, IDEM does not amend the Technical Support Document (TSD) because the TSD and amendments to the TSD are maintained to document the original review. If additional clarification is needed regarding information in the TSD or Appendix A, a review request may be submitted to IDEM. The minimum information needed to process a review request is an application cover sheet, GSD-01, and a letter explaining the reason for the request.

Page 12 of 26 Shot Blast Machines

**Comment 9:** The emission factor for HAP – Lead (Pb) in the SB-10 Blow-off chamber is incorrect. This was missed during a previous review. The emission factor should read as 0.016 lbs/ton of metal.

**Comment 10:** PDS Minor Limit (ton/yr) of HAP – Lead (Pb) emissions from the SB-10 Blow-off chamber should recalculate as 0.16 tons/yr with the corrected emission factor.

**Response 9 - 10:**

The emission factor in the permit (0.16 lb/ton) was incorrect. However, the correct emission factor should be the same as the uncontrolled emission factor (0.058 lb/ton), instead of 0.016 lb/ton.

Pages 15 – 17 Phenolic Urethane Core Making Lines #1, #2, #3, #4, #5, & #8
(*A revised Table has been provided with the following comments implemented*)

**Comment 11:** As discussed in the above comment number 6, the tables need to have a new column added to include the control device for the catalyst emissions.

**Comment 12:** In order to calculate properly the resin usage in the tables, additional columns were inserted and the methodology was changed. Unlike the other sources of emissions, the resin emissions listed are those VOC emissions of the resin that do not react. As part of the process, the "resin" consists of two parts mixed to together and the reaction ties up the majority of the

VOCs in the individual parts. The use of the resin and resulting emissions requires a different calculation methodology in order to provide a material usage for the year than what was originally used and is applied to the other sources of VOC emissions from the core making process. This different methodology was inserted into Calculation Methodology section to reflect the different approach.

**Response 11 - 12:**

These changes have been included in the attached updated calculation document.

Page 18 of 26 Phenolic Urethane Core Making Line #9

**Comment 13:** Total VOC emissions for Uncontrolled PTE (ton/yr) include HAP: Metal emissions. The Total VOC emissions should be 225.98 ton/yr.
**Comment 14:** Total VOC emissions for Limited PTE (ton/yr) include HAP: Metal emissions. The Total VOC emissions should be 24.70 ton/yr.

Page 22 of 26 Large Core Production Cell

**Comment 15:** The Controlled Emission Factor for HAPs: Metals should be revised to include a second significant digit so the value presented reads as 0.33 lb/ton of sand.

**Response 13 - 15:**

IDEM agrees with these changes. This addendum to the TSD is used to document these changes. As stated above, IDEM does not amend the Technical Support Document (TSD) because the TSD and amendments to the TSD are maintained to document the original review. If additional clarification is needed regarding information in the TSD or Appendix A, a review request may be submitted to IDEM. The minimum information needed to process a review request is an application cover sheet, GSD-01, and a letter explaining the reason for the request.

## TSD Comments (Public Notice Copy contains 38 pages)

Page 5 of 38 Permitted Emission Units and Pollution Control Equipment

**Comment 16:** The Paint Dip Tank needs to be inserted into the list of units at Dalton. Please insert the following description for the Paint Dip Tank on page five after the description for (9) **Grinders** and before **SECTION D.7**.

(10) **Paint Dip Tank**
One (1) Paint Dip Tank for painting processed iron castings, constructed prior to 1977, with a nominal throughput of 6.5 gallons of paint per hour.

Emissions from the Paint Dip Tank are uncontrolled.

Page 22 of 38 Unrestricted Potential Emissions

**Comment 17:** The VOC emissions in the table need to be revised to reflect changes proposed in the comments for Uncontrolled Potential to Emit (ton/year) in TSD – Appendix A. The VOC emissions should be roughly 3,142 tons/year.

Page 23 of 38 Potential to Emit of the Entire Source After Issuance of Renewal (tons/year)

**Comment 18:** There are emissions in the table that need to be revised to reflect changes proposed in the comments for Limited Potential to Emit (tons/year) in TSD – Appendix A. A revised table Limited Potential to Emit (ton/yr) has been provided implementing the comments listed.

**Response 16 - 18:**

IDEM agrees with these changes. This addendum to the TSD is used to document these changes. As stated above, IDEM does not amend the Technical Support Document (TSD) because the TSD and amendments to the TSD are maintained to document the original review. If additional clarification is needed regarding information in the TSD or Appendix A, a review request may be submitted to IDEM. The minimum information needed to process a review request is an application cover sheet, GSD-01, and a letter explaining the reason for the request.

Page 25 of 38 Federal Rule Applicability

**Comment 19:** "Herman 3 Sand Handling: VOC" emissions for Uncontrolled PTE (tons/year) should read 97 tons/year.
**Comment 20:** "Herman 3 Sand Handling: VOC" emissions for Controlled PTE (tons/year) should read 36 tons/year.
**Comment 21:** "Shot Blast Machines: PM10/PM2.5" emissions for Controlled PTE (tons/year) should read 57.15 tons/year.
**Comment 22:** "Shot Blast Machines: PM" emissions for Controlled PTE (tons/year) should read 65.04 tons/year.
**Comment 23:** "Grinders: PM10/PM2.5" emissions for Controlled PTE (tons/year) should read 28.56 tons/year.
**Comment 24:** "Grinders: PM" emissions for Controlled PTE (tons/year) should read 28.56 tons/year.
**Comment 25:** "Phenolic Urethane Line #3: VOC" emissions for Controlled PTE (tons/year) should read 17.33 tons/year.
**Comment 26:** "Phenolic Urethane Line #4: VOC" emissions for Controlled PTE (tons/year) should read 9.64 tons/year.
**Comment 27:** "Phenolic Urethane Line #9: VOC" has the Acid Scrubber listed in the Control Device Used column. This emission unit has a limitation assigned to it but a control device was not used to establish the limitation. Please remove the Acid Scrubber from this column since it does not meet the criteria listed in the paragraph before the table under (a)(3).
**Comment 28:** "Phenolic Urethane Line #9: VOC" emissions for Uncontrolled PTE (tons/year) should read 225.98 tons/year.
**Comment 29:** "Phenolic Urethane Line #9: VOC" emissions for Controlled PTE (tons/year) should read 24.70 tons/year.
**Comment 30:** "Large Core Production Cell: VOC" has the Acid Scrubber listed in the Control Device Used column. This emission unit has a limitation assigned to it but a control device was not used to establish the limitation. Please remove the Acid Scrubber from this column since it does not meet the criteria listed in the paragraph before the table under (a)(3).
**Comment 31:** "Large Core Production Cell: VOC" emissions for Controlled PTE (tons/year) should read 24.76 tons/year.

Page 27 of 38 State Rule Applicability – Entire Source

**Comment 32:** NOx emission limitation for the Cupola Melt Furnace should read as 0.42 pounds per ton of metal.

Page 31 of 38 2010 Modification

**Comment 33:** The total Lead emission listed in the table should read 0.54 tons/year.
**Comment 34:** In the paragraph following the table, the year of the modification should be 2010 instead of 2011.

**Response 19 - 34:**

IDEM agrees with these changes. This addendum to the TSD is used to document these changes. As stated above, IDEM does not amend the Technical Support Document (TSD) because the TSD and amendments to the TSD are maintained to document the original review. If additional clarification is needed regarding information in the TSD or Appendix A, a review request may be submitted to IDEM. The minimum information needed to process a review request is an application cover sheet, GSD-01, and a letter explaining the reason for the request.

Page 31 of 38 2011 Modification

**Comment 35:** The Lead (Pb) emission factor for the SB 10 Blow-off Chamber should be 0.016 lb/ton.
**Comment 36:** The Lead (Pb) emissions for the SB 10 Blow-off Chamber and Total should be 0.16 tons/year.

**Response 35 - 36:**

The emission factor in the permit (0.16 lb/ton) was incorrect. However, The correct emission factor should be the same as the uncontrolled emission factor (0.058 lb/ton), instead of 0.016 lb/ton.

D.6.1.4 PSD Minor Limits [326 IAC 2-2]

.....

(d) The lead (Pb) emission rate from the SB 10 Blow-Off Chamber controlled by an internally exhausted fabric filter control device shall not exceed ~~0.16~~ **0.058** pounds per ton.

.....

Comment:

The Potential to Emit After Issuance Table from the TSD is revised as follows:

| Process/ Emission Unit | Potential To Emit of the Entire Source After Issuance of Renewal (tons/year) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | PM | $PM_{10}$ | $PM_{2.5}$* | $SO_2$ | $NO_x$ | VOC | CO | GHGs | Worst Single HAP | Total HAPs |
| Cupola Charge Handling | 60 | 36 | 36 | 0 | 0 | 0 | 0 | 0 | 0.2 Lead | 0.2 |
| Cupola Melt Furnace | 77 | 69 | 69 | 117 | ~~9~~**40** | 1 | 681 | 63,352 | 0.2 | 77 |
| Herman 2 Mold Line | 286 | 217 | 217 | 11 | 6 | 609 | 3383 | 0 | 9.2 | 267 |
| Herman 3 Mold Line | 40 | 48 | 48 | 0 | 0 | 60 | 630 | 0 | 0.6 | 29 |
| Inclined Shakeout and Sort System | 15 | 15 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Vibratory Shaker | 13 | 11 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Waste Sand Handling, Screening and Transport System | 4 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| Process/ Emission Unit | Potential To Emit of the Entire Source After Issuance of Renewal (tons/year) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | PM | $PM_{10}$ | $PM_{2.5}$* | $SO_2$ | $NO_x$ | VOC | CO | GHGs | Worst Single HAP | Total HAPs |
| Shot Blast Machines | 65 | ~~65~~**57** | ~~0~~**57** | 0 | 0 | 0 | 0 | 0 | ~~2.4~~**1.3** | ~~2.4~~**1.4** |
| Grinders | ~~125~~**29** | ~~125~~**29** | ~~125~~**29** | 0 | 0 | 0 | 0 | 0 | 0.**2**5 | 0.**2**5 |
| Paint Dip Tank | 0 | 0 | 0 | 0 | 0 | 236 | 0 | 0 | 0 | 0 |
| Phenolic Urethane Core Making | | | | | | | | | | |
| Line # 1 | 11.3 | 11.3 | 11.3 | 0 | 0 | 35 | 0 | 0 | 0 | 11.3 |
| Line # 2 | 11.3 | 11.3 | 11.3 | 0 | 0 | 9 | 0 | 0 | 0 | 11.3 |
| Line # 3 | 11.3 | 11.3 | 11.3 | 0 | 0 | 46 | 0 | 0 | 0 | 11.3 |
| Line # 4 | 11.3 | 11.3 | 11.3 | 0 | 0 | 25 | 0 | 0 | 0 | 11.3 |
| Line # 5 | 11.3 | 11.3 | 11.3 | 0 | 0 | 5 | 0 | 0 | 0 | 11.3 |
| Line # 8 | 11.3 | 11.3 | 11.3 | 0 | 0 | 13 | 0 | 0 | 0 | 11.3 |
| Line # 9 | 2 | 0.4 | 0.4 | 0 | 4 | ~~26.7~~**2 4.7** | 3 | 0 | 0 | 2 |
| Shell Core Making Process | 11 | 11 | 11 | 0 | 0 | 13 | 0 | 0 | 0 | 11 |
| Air Set Core Making Process | 11 | 11 | 11 | 0 | 0 | 98 | 0 | 0 | 0 | 11 |
| Large Core Production Cell | 2 | 0.4 | 0.4 | 0 | 0 | 24.8 | 0 | 0 | 0 | 11 |
| Combustion | 0.5 | 2 | 2 | 0 | 26 | 1 | 21 | 30878 | 0 | 0.4 |
| Total PTE of Entire Source | ~~783~~**686** | ~~683~~**578** | ~~683~~**57 8** | 129 | 71 | ~~1202~~**1 200** | 4716 | 94,230 | 13 | 480 |
| Title V Major Source Thresholds | NA | 100 | 100 | 100 | 100 | 100 | 100 | 100,000 $CO_2e$ | 10 | 25 |
| PSD Major Source Thresholds | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100,000 $CO_2e$ | NA | NA |
| *$PM_{2.5}$ listed is direct $PM_{2.5}$. | | | | | | | | | | |

## Permit Comments (Public Notice Copy contains 159 pages)

Page 12 of 159 A.2 - Permitted Emission Units and Pollution Control Equipment

**Comment 37:** Please remove the designation of Section D.7 for the Paint Dip Tank process. This process does need to remain listed as it remains at the facility but listing the process as D.7 creates confusion with the Table of Contents and the detailed processes/units of Sections D.7 through D.12. Please reassign Section D.7 to the Phenolic Urethane Core Making Line #9 (also

referred to as Core Making Line #9) and the following Section designations so A.2 matches with the Table of Contents and the detailed process/units of Section D.8 through D.12. The text would resemble the following:

(d) Four (4) Grinders, identified as GR-31 through GR-33; and GR-37, constructed prior to 1977, each with a nominal throughput of 4.0 tons of iron castings per hour.

Particulate emissions from these Grinders are captured and controlled by Baghouse #12, exhausting through Stack X.

(10) **Paint Dip Tank**
One (1) Paint Dip Tank for painting processed iron castings, constructed prior to 1977, with a nominal throughput of 6.5 gallons of paint per hour.

Emissions from the Paint Dip Tank are uncontrolled.

**SECTION D.7**

(11) **Phenolic Urethane Core Making Line #9 (also referred to as Core Making Line #9)**
One (1) Phenolic Urethane Core Making Line #9, constructed in 2002 as a hotbox process and modified in 2008 to be a phenolic process, with a nominal sand throughput of 18.0 tons of sand per hour. The Phenolic Urethane Core Making line #9 consists of the following emission units:

**Response 37:**

The paint dip tank was removed from Section A.2 of the permit. The remaining processes were re-numbered to match the permit conditions.

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

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

.....

SECTION D.7

~~(10) Paint Dip Tank~~
~~One (1) Paint Dip Tank for painting processed iron castings, constructed prior to 1977, with a nominal throughput of 6.5 gallons of paint per hour.~~

~~Emissions from the Paint Dip Tank are uncontrolled.~~

Page 47 of 159 D.2.1 PSD Minor Limits [326 IAC 2-2] [326 IAC 6-3-2]

**Comment 38:** The NOx emission limitation listed in (e) needs to be 0.42 pounds per ton of metal.

**Response 38:**

This limitation was changed to 0.42 lb per ton.

D.2.1 PSD Minor Limits [326 IAC 2-2] [326 IAC 6-3-2]

.....

(e) The $NO_X$ emissions from the Cupola Melt Furnace shall be limited to **0.42**~~0.38~~ pounds per ton of metal.

.....

Page 48 of 159 D.2.3 Emission Control Operation [326 IAC 2-7-6(6)]

**Comment 39:** Condition (c), Afterburners – Cupola Melt Furnace needs the first sentence, as requested in the Significant Permit Modification application submitted on April 30, 2012, to read as: "The afterburner system used to maintain 1300ºF shall be in operation…"

**Response 39:**

The temperature does not need to be included in this condition. Then number "three" is removed as follows:

D.2.3 Emission Controls Operation [326 IAC 2-7-6(6)]

.....

(c) Afterburners – Cupola Melt Furnace
The ~~three (3)~~ afterburner system shall be in operation for CO emissions control from the Cupola Melt Furnace at all times when:

.....

Page 49 of 159 D.2.4 Testing Requirements [326 IAC 2-7-6(1),(6)]

**Comment 40:** Condition (f) is missing in the second sentence the emission CO from the list of pollutants to be sampled every five (5) years. The sentence should read as: "Testing of PM, $PM_{10}$, VOC, **CO** and Pb, shall…"

**Response 40:**

D.2.4 Testing Requirements [326 IAC 2-7-6(1),(6)]

.....

(f) Testing shall be conducted utilizing methods as approved by the Commissioner. Testing of PM, $PM_{10}$, VOC**, CO** and Pb, shall be repeated at least once every five (5) years from the date of the last valid compliance demonstration. Section C – Performance Testing contains the Permittee's obligations with regard to the testing required by this condition.

Page 114 of 159 D.11.4 Testing Requirements [326 IAC 2-7-6(1),(6)] [326 IAC 2-1.1-11]

**Comment 41:** Condition (c) Resin #3 / Catalyst #3 – Operating Scenario #3 has the designation of Resin #2 and Catalyst #2 referred to in the first sentence. The sentence should read as: "…Core Machine #29 using the resin identified as Resin #**3** and the catalyst identified as Catalyst #**3**."

**Response 41:**

D.11.4 Testing Requirements [326 IAC 2-7-6(1),(6)] [326 IAC 2-1.1-11]

.....

(c) Resin #3 / Catalyst #3 – Operating Scenario #3

During the period within 60 days of achieving the nominal production rate but no later than 180 days after start-up of the Sand / resin Mixer #10 and the Cold Box Phenolic Urethane Core Machine #29 using the resin identified as Resin #**3**~~2~~ and the catalyst identified as Catalyst #2, In order to demonstrate the compliance status with Condition D.11.1 – VOC PSD Minor Limits, the Permittee shall perform VOC testing in the event of a change in the operating scenario of the uncontrolled exhaust for the Sand / Resin Mixer #10 and of the uncontrolled exhaust for the Cold Box Phenolic Urethane Core Machine #29 when using the resin identified as Resin #3 and the catalyst identified as Catalyst #3.

Page 117 of 159 D.11.12 Reporting Requirements

**Comment 42:** The paragraph refers to Condition D.12.2(c) – PSD Minor Limits. The correct referral should be Condition D.**11**.2(c) – PSD Minor Limits

**Response 42:**

D.11.12 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.11.1 – VOC Minor Limits and Condition D.1**12**.2(c) – PSD Minor Limits shall be submitted not later than thirty (30) days following the end of each calendar quarter. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(34). Section C - General Reporting Requirements contains the Permittee's obligations with regard to the reporting required by this condition.

Page 140 of 159 Part 70 Report for Facility SB10 Blow-off Chamber

**Comment 43:** The limit referred needs the unit "tons" inserted after 20,000. The new sentence would read as: "20,000 tons per twelve…"

**Response 43:**

.....

## Part 70 Quarterly Report

.....

Limits: 20,000 **tons** per twelve (12) consecutive month period, rolled on a monthly basis with compliance determined at the end of each month. (Section D.6)

.....

Page 150 of 159 Part 70 Report for Facility Phenolic Urethane Core Making Lines #1 through #5, and #8

**Comment 44:** The Usage limit needs to read as 1188 gallons. The new sentence would read as: "1188 gallons per twelve…"

**Response 44:**

.....

Limits: **1188**~~671~~ gallons per twelve consecutive month period, rolled on a monthly basis, and VOC content of the core machines cleaner shall not exceed 8.17 pounds per gallon. Compliance determined at the end of each month. (Section D.9)

.....

**Comment 45:** No page Missing Part 70 Report for Facility Core Making Line #9

Please create the appropriate form for the Parameter "Amount of Sand Throughput" with the limitation of 12,000 tons sand per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of the month. (Section D.7)

**Response 45:**

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

## Part 70 Quarterly Report

**Source Name:** **Dalton Corporation, Warsaw Manufacturing Facility**
**Source Address:** **1900 Jefferson Street, Warsaw, Indiana 46580**
**Part 70 Permit No.:** **T 085-30768-00003**
**Facilities:** **Core Making Line #9**
**Parameters:** **Amount of Sand Throughput**
**Limits:** **12,000 tons per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Section D.12)**

**YEAR:** _____

| Month | This Month | Previous 11 Months | 12 Month Total |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

☐ **No deviation occurred in this quarter.**

☐ **Deviations occurred in this quarter.**
**Deviation has been reported on:** _____

**Submitted By:** _____

**Title/Position:** _____

**Signature:** _____

**Date:** _____

**Phone:** _____

.....

## Other Changes

Upon further review, the OAQ has decided to make the following revisions to the permit:

**Change No. 1:**

The TSD "Existing Approvals" section should contain the following in order to note a limit change:

The following changes have been made:

- The Cupola melt furnace NOx PSD Minor Limit has been changed from 0.1 lb/ton to 0.42 lb/ton iron melted, per Significant Permit Modification 085-31790-00003. This is a Title I change.
- The word "noncatalyst" was added to D.7.1(c).

This addendum to the TSD is used to document these changes. As stated above, IDEM does not amend the Technical Support Document (TSD) because the TSD and amendments to the TSD are maintained to document the original review. If additional clarification is needed regarding information in the TSD or Appendix A, a review request may be submitted to IDEM. The minimum information needed to process a review request is an application cover sheet, GSD-01, and a letter explaining the reason for the request.

**Change No. 2:**

D.8.1 BACT Requirements [326 IAC 2-2] [326 IAC 8-1-6]

Pursuant to 326 IAC 2-2 (PSD) and 326 IAC 8-1-6 (New Facilities General Reduction Requirements), the following requirements shall apply:

.....

(c) Core Machines

.....

(2) The VOC emissions from the **amine** catalysts (after the Acid Scrubber AF) shall not exceed 0.319 pounds per ton of sand.

## IDEM Contact

Questions regarding this proposed permit can be directed to Heath Hartley at the Indiana Department Environmental Management, Office of Air Quality, MC 61-53, Room 1003, 100 North Senate Avenue, Indianapolis, Indiana 46204-2251 or by telephone at (317) 232-8217 or toll free at 1-800-451-6027 extension 2-8217.

| | **Uncontrolled Potential To Emit** (ton/yr) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **PM** | **$PM_{10}$** | **$PM_{2.5}$** | **$SO_2$** | **$NO_X$** | **VOC** | **CO** | **CO2e** | **Pb** | **Total HAPs** |
| Cupola Charge Handling | 140.5 | 84.3 | 84.3 | 0 | 0 | 0 | 0 | 0 | 0.47 | 0 |
| Cupola Melt Furnace | 2,931.5 | 2,634.1 | 2,634.1 | 265.5 | 21.2 | 38.2 | 30,802.4 | 143,231 | 233.7 | 2,931.53 |
| Herman 2 Mold Line | 449.3 | 340.8 | 340.8 | 17.8 | 8.9 | 960.3 | 5,334.8 | 0 | 14.5 | 421.19 |
| Herman 3 Mold Line | 400.4 | 308.0 | 308.0 | 0 | 0 | 539.3 | 5,072.0 | 0 | 11.0 | 371.70 |
| Inclined Shakeout and Sort System | 155.2 | 108.6 | 65.0 | 0 | 0 | 0 | 0 | 0 | 0.0 | 0 |
| Vibratory Shaker | 679.8 | 475.8 | 475.8 | 0 | 0 | 0 | 0 | 0 | 0.0 | 0 |
| Waste Sand Handling, Screening and | 315.4 | 47.3 | 47.3 | 0 | 0 | 0 | 0 | 0 | 0.0 | 0 |
| Shot Blast Machines | 4,877.1 | 487.7 | 487.7 | 0 | 0 | 0 | 0 | 0 | 1.4 | 1.4 |
| Grinders | 8,339.5 | 834.0 | 834.0 | 0 | 0 | 0 | 0 | 0 | 0.0 | 0.0 |
| Robotic Grinders ABB and FANUC | 186.2 | 18.6 | 18.6 | 0 | 0 | 0 | 0 | 0 | 0.6 | 0.6 |
| Paint Dip Tank | 0 | 0 | 0 | 0 | 0 | 235.7 | 0 | 0 | 0 | 0 |
| Phenolic Urethane Core Making | | | | | | | | | | |
| Line # 1 | 11 | 11 | 11 | 0 | 0 | 120.3 | 0 | 0 | 0 | 11 |
| Line # 2 | 11 | 11 | 11 | 0 | 0 | 51.6 | 0 | 0 | 0 | 11 |
| Line # 3 | 11 | 11 | 11 | 0 | 0 | 120.3 | 0 | 0 | 0 | 11 |
| Line # 4 | 11 | 11 | 11 | 0 | 0 | 120.3 | 0 | 0 | 0 | 11 |
| Line # 5 | 11 | 11 | 11 | 0 | 0 | 103.1 | 0 | 0 | 0 | 11 |
| Line # 8 | 11 | 11 | 11 | 0 | 0 | 86.0 | 0 | 0 | 0 | 11 |
| Line # 9 | 283.8 | 42.6 | 42.6 | 0 | 0 | 226.0 | 0 | 0 | 0 | 26 |
| Shell Core Making Process | 11.3 | 11.3 | 11.3 | 0 | 0 | 13.1 | 0 | 0 | 0 | 11.26 |
| Air Set Core Making Process | 11.3 | 11.3 | 11.3 | 0 | 0 | 98.3 | 0 | 0 | 1.31E-05 | 11.26 |
| Large Core Production Cell | 473.0 | 71.0 | 71.0 | 0 | 0 | 427.8 | 0 | 0 | 0 | 43.36 |
| Combustion | 0.5 | 1.9 | 1.9 | 0.15 | 25.58 | 1.4 | 21.48 | 30,878 | 0.00 | 0.43 |
| | **19,322.3** | **5,544.8** | **5,501.1** | **283.5** | **55.7** | **3,141.8** | **41,230.7** | **174,108** | **261.7** | **3,886.8** |

| | **Limited Potential To Emit** (ton/yr) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **PM** | **$PM_{10}$** | **$PM_{2.5}$** | **$SO_2$** | **$NO_X$** | **VOC** | **CO** | **CO2e** | **Pb** | **Total HAPs** |
| Cupola Charge Handling | 59.8 | 35.9 | 35.9 | 0 | 0 | 0 | 0 | 0 | 0.20 | 0.2 |
| Cupola Melt Furnace | 77.1 | 69.3 | 69.3 | 117.4 | 39.5 | 0.8 | 681.2 | 63,352 | 0.19 | 77.14 |
| Herman 2 Mold Line | 285.9 | 216.7 | 216.7 | 11.3 | 5.6 | 608.9 | 3,382.5 | 0 | 9.22 | 267.05 |
| Herman 3 Mold Line | 39.9 | 48.0 | 48.0 | 0 | 0 | 60.14 | 630.42 | 0 | 0.59 | 29.15 |
| Inclined Shakeout and Sort System | 15.3 | 15.3 | 15.3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Vibratory Shaker | 13.3 | 10.9 | 10.9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Waste Sand Handling, Screening and | 4.1 | 0.6 | 0.6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Shot Blast Machines | 65.0 | 57.1 | 57.1 | 0 | 0 | 0 | 0 | 0 | 1.36 | 1.4 |
| Grinders | 28.6 | 28.6 | 28.6 | 0 | 0 | 0 | 0 | 0 | 0.25 | 0.25 |
| Robotic Grinders ABB and FANUC | 2.6 | 2.6 | 2.6 | 0 | 0 | 0 | 0 | 0 | 0.55 | 0.55 |
| Paint Dip Tank | 0 | 0 | 0 | 0 | 0 | 236 | 0 | 0 | 0 | 0 |
| Phenolic Urethane Core Making | | | | | | | | | | |
| Line # 1 | 11.3 | 11.3 | 11.3 | 0 | 0 | 35 | 0 | 0 | 0 | 11.3 |
| Line # 2 | 11.3 | 11.3 | 11.3 | 0 | 0 | 9.1 | 0 | 0 | 0 | 11.3 |
| Line # 3 | 11.3 | 11.3 | 11.3 | 0 | 0 | 45.5 | 0 | 0 | 0 | 11.3 |
| Line # 4 | 11.3 | 11.3 | 11.3 | 0 | 0 | 25.3 | 0 | 0 | 0 | 11.3 |
| Line # 5 | 11.3 | 11.3 | 11.3 | 0 | 0 | 4.7 | 0 | 0 | 0 | 11.3 |
| Line # 8 | 11.3 | 11.3 | 11.3 | 0 | 0 | 12.5 | 0 | 0 | 0 | 11.3 |
| Line # 9 | 2.0 | 0.4 | 0.4 | 0 | 0.0 | 24.7 | 0.0 | 0 | 0 | 1.98 |
| Shell Core Making Process | 11.3 | 11.3 | 11.3 | 0 | 0 | 13.1 | 0 | 0 | 0 | 11.26 |
| Air Set Core Making Process | 11.3 | 11.3 | 11.3 | 0 | 0 | 98.3 | 0 | 0 | 0 | 11.26 |
| Large Core Production Cell | 2.0 | 0.4 | 0.4 | 0 | 0 | 24.8 | 0 | 0 | 0 | 11.26 |
| Combustion | 0.49 | 1.94 | 1.94 | 0.15 | 25.58 | 1.41 | 21.48 | 30,877.61 | 0 | 0.43 |
| | **686.2** | **577.9** | **577.9** | **128.9** | **70.7** | **1,200.1** | **4,715.7** | **94,229.7** | **12.4** | **479.5** |

## Cupola Charge Handling
## Installation Date(s): Prior to 1977

| | | |
|---|---|---|
| Maximum Capacity: | 468,222 | tons per year of melted metal, coke & limestone |
| | 53.45 | tons per hour of metal, coke & limestone |
| Limited Capacity: | 199,194 | tons per year of metal charged |

| Pollutant | Emission Factors (lb/ton) | Uncontrolled PTE (ton/yr) | PSD Minor Limit (ton/yr) | 326 IAC 6-3-2 (ton/yr) |
|---|---|---|---|---|
| PM | 0.6 | 140.5 | 59.8 | 198.0 |
| $PM_{10}/PM_{2.5}$ | 0.36 | 84.3 | 35.9 | 198.0 |
| HAP - Lead (Pb) | 0.002 | 0.5 | 0.2 | NA |

Process Weight, P (ton/hr) = 53.45

**Calculation Methodology**

The annual metal limit and emission factors for the Cupola Charge Handling were derived from SSM 085-14027-00003, issued on February 22, 2002.
PM/PM10 Emission factor from FIRE 3-04-003-15.
Uncontrolled PTE (ton/yr) = Controlled PTE (lb/hr) x 8760 hr/yr / 2000 lb/ton

Limited PTE (ton/yr) = Limited Capacity (ton metal/year) x Emission Factor (lb/ton metal) x 1 ton/2000 lb
Emissions from cupola charge handling are not controlled.

## Cupola Melt Furnace
## Installation Date(s): Prior to 1977

Limited Capacity: 187,919 tons per year of melted metal
Maximum Capacity: 424,860 tons per year of melted metal, coke & limestone
48.5 tons per hour of metal

| Pollutant | Emission Factors (lb/ton) | Uncontrolled PTE (ton/yr) | Limited Emission Factors (lb/ton) | PSD Minor Limit (ton/yr) | 326 IAC 6-3-2 (ton/yr) |
|---|---|---|---|---|---|
| PM | 13.8 | 2931.5 | 0.821 | 77.14 | 194.0 |
| $PM_{10}$ | 12.4 | 2634.1 | 0.738 | 69.34 | 194.0 |
| $PM_{2.5}$ | 12.4 | 2634.1 | -- | 69.34 | |
| $SO_2$ | 1.25 | 265.5 | 1.25 | 117.45 | |
| $NO_X$ | 0.1 | 21.2 | 0.42 | 39.46 | |
| VOC | 0.18 | 38.2 | 0.009 | 0.85 | |
| CO | 145 | 30802.4 | 7.250 | 681.21 | |
| HAP - Lead (Pb) | 1.1 | 233.7 | 0.002 | 0.19 | |
| HAP: Metals | 13.8 | 2931.5 | 0.821 | 77.14 | |

Process Weight, P (ton/hr) = 48.5 **E** (lb/hr) **= 44.3**

**Calculation Methodology**

The annual metal limit and emission factors for the Cupola Melt Furnace were derived from SSM 085-14027-00003, issued on February 22, 2002.

PM, PM10, SO2, Nox, VOC, CO, Pb uncontrolled emission factors from FIRE 3-04-003-01

Uncontrolled PTE (ton/yr) = Controlled PTE (lb/hr) x 8760 hr/yr / 2000 lb/ton

Limited PTE (ton/yr) = Limited Capacity (ton metal/year) x Emission Factor (lb/ton metal) x 1 ton/2000 lb

All PM emissions are also HAP-Metals emissions.

The emissions from the melt furnace are controlled by Wet Scrubber A and 3 afterburners.

The charge door emissions are controlled by Baghouse #14.

| Cupola | Greenhouse Gas | | |
|---|---|---|---|
| | CO2 | CH4 | N2O |
| Emission Factor in lb/ton | 5,578.99 | 0.60 | 0.09 |
| Potential Emission in tons/yr | 142,217 | 15 | 2 |
| Summed Potential Emissions in tons/yr | 142,235 | | |
| CO2e Total in tons/yr | 143,231 | | |
| | 62,904 | 7 | 1 |
| | 62,912 | | |
| Limited CO2e Total in tons/yr | 63,352 | | |

**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.

GHG regulations have emission factors based upon coke usage and not emissions factors for metal. In order to relate between coke and metal, a ratio of coke usage to metal usage (0.12).

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).

## Herman 2 Mold Line
## Installation Date(s): Prior to 1977

| | | |
|---|---|---|
| Limited Capacity: | 1,127,516 | tons per year of core and mold sand handled |
| Maximum Capacity: | 324,120 | tons per year of metal throughput |
| | 1,454,160 | tons per year of sand throughput |
| | 37 | tons per hour of metal |
| | 166 | tons per hour of sand |

| Pollutant | Emission Factors (lb/ton) | Uncontrolled PTE (ton/yr) | PSD Minor Limit (ton/yr) | 326 IAC 6-3-2 (ton/yr) |
|---|---|---|---|---|
| **Pouring** | | | | |
| PM | 0.118 | 104.56 | 66.30 | 257.0 |
| $PM_{10}$ | 0.052 | 46.59 | 29.54 | 257.0 |
| $PM_{2.5}$ | 0.052 | 46.59 | 29.54 | |
| $SO_2$ | 0.020 | 17.78 | 11.28 | |
| $NO_X$ | 0.010 | 8.89 | 5.64 | |
| VOC | 0.163 | 144.93 | 91.89 | |
| CO | 1.800 | 1600.45 | 1014.76 | |
| HAP - Lead (Pb) | 0.016 | 14.23 | 9.02 | |
| HAP: Metals | 0.118 | 104.56 | 66.30 | |
| **Casting/Cooling** | | | | |
| PM | 0.288 | 256.16 | 162.42 | 257.0 |
| $PM_{10}$ | 0.196 | 174.18 | 110.44 | 257.0 |
| $PM_{2.5}$ | 0.196 | 174.18 | 110.44 | |
| VOC | 0.687 | 610.84 | 387.30 | |
| CO | 2.880 | 2560.72 | 1623.62 | |
| HAP: Metals | 0.288 | 256.16 | 162.42 | |
| **Shakeout** | | | | |
| PM | 0.034 | 30.23 | 19.17 | 257.0 |
| $PM_{10}$ | 0.058 | 51.57 | 32.70 | 257.0 |
| $PM_{2.5}$ | 0.058 | 51.57 | 32.70 | |
| VOC | 0.115 | 102.25 | 64.83 | |
| CO | 1.320 | 1173.66 | 744.16 | |
| HAP - Lead (Pb) | 0.00018 | 0.16 | 0.10 | |
| HAP: Metals | 0.034 | 30.23 | 19.17 | |
| **Sand Handling** | | | | |
| PM | 0.034 | 30.23 | 19.17 | 247.5 |
| $PM_{10}$ | 0.058 | 51.57 | 32.70 | 247.5 |
| $PM_{2.5}$ | 0.058 | 51.57 | 32.70 | |
| VOC | 0.115 | 102.25 | 64.83 | |
| HAP - Lead (Pb) | 0.00018 | 0.16 | 0.10 | |
| HAP: Metals | 0.034 | 30.23 | 19.17 | |
| **Waste Sand Handling - Klein Transports** | | *106000* | *imited Waste Sand (tpy)* | |
| PM | 0.356 | 28.07 | 18.87 | 1.91 |
| $PM_{10}$ | 0.214 | 16.87 | 11.34 | 0.29 |
| $PM_{2.5}$ | 0.214 | 16.87 | 11.34 | 0.29 |
| HAP - Lead (Pb) | | 0.00 | 0.00 | fugitive |
| HAP: Metals | | 0.00 | 0.00 | |
| | | | | |

## Herman 2 Mold Line
## Installation Date(s): Prior to 1977

| **Total Emissions:** | **Uncontrolled PTE** | **Limited PTE** (ton/yr) |
|---|---|---|
| PM | 449.25 | 285.92 |
| $PM_{10}$ | 340.79 | 216.72 |
| $PM_{2.5}$ | 340.79 | 216.72 |
| $SO_2$ | 17.78 | 11.28 |
| $NO_X$ | 8.89 | 5.64 |
| VOC | 960.27 | 608.86 |
| CO | 5334.84 | 3382.55 |
| HAP - Lead (Pb) | 14.55 | 9.22 |
| HAP: Metals | 421.19 | 267.05 |

| | |
|---|---|
| Pouring | P (ton/hr) = 203 |
| Casting/Cooling | P (ton/hr) = 203 |
| Shakeout | P (ton/hr) = 203 |
| Sand Handling | P (ton/hr) = 166 |

**Calculation Methodology**

The annual sand limit and emission factors for Herman 2 were derived from SSM 085-14027-00003, issued on February 22, 2002.

Pouring & Casting/Cooling & Shakeout:

EF for PM, PM10 and VOC from site specific stack tests. SO2 and Nox EF from FIRE 3-04-003-18

Uncontrolled PTE (ton/yr) = Max Capacity ((ton sand + metal)/hour) x Emission Factor (lb/(ton sand + metal)) x 8760 hr/yr / 2000 lb/ton

Limited PTE (ton/yr) = Limited Capacity ((ton sand + metal)/year) x Emission Factor (lb/(ton sand + metal)) x 1 ton/2000 lb

All PM emissions are also HAP-Metals emissions.

Particulate emissions from pouring and casting/cooling are not controlled.

Particulate emissions from shakeout are controlled by Wet Collector #3.

The Wet Collector #3 is common to Herman 2 Shakeout & Klein Transport PF504-5.

Sand Handling

Uncontrolled PTE (ton/yr) = Max Capacity ((ton sand)/hour) x Emission Factor (lb/(ton sand)) x 8760 hr/yr / 2000 lb/ton

Limited PTE (ton/yr) = Limited Capacity ((ton sand)/year) x Emission Factor (lb/ton sand) x 1 ton/2000 lb

Particulate emissions from sand handling are controlled by Baghouse #1 and Baghouse #13.

## Herman 3 Mold Line
## Installation Date(s): 1991

Limited Capacity: 90,578 tons per year of metal throughput
543,470 tons per year of sand throughput

Maximum Capacity: 245,280 tons per year of metal throughput
1,445,400 tons per year of sand throughput
28 tons per hour of metal
165 tons per hour of sand

| Pollutant | Uncontrolled Emission Factors (lb/ton) | Uncontrolled PTE (ton/yr) | PSD Minor Limit (ton/yr) | 326 IAC 6-3-2 E (ton/yr) |
|---|---|---|---|---|
| **Pouring** | | | | |
| PM | 0.1176 | 99.41 | 5.33 | 254.6 |
| $PM_{10}$ | 0.0524 | 44.30 | 2.37 | 254.6 |
| $PM_{2.5}$ | 0.0524 | 44.30 | 2.37 | |
| VOC | 0.163 | 137.79 | 7.38 | |
| CO | 1.800 | 1521.61 | 81.52 | |
| HAP - Lead (Pb) | 0.013 | 10.99 | 0.59 | |
| HAP: Metals | 0.118 | 99.41 | 5.33 | |
| **Casting/Cooling** | | | | |
| PM | 0.2881 | 243.54 | 13.05 | 254.6 |
| $PM_{10}$ | 0.1959 | 165.60 | 8.87 | 254.6 |
| $PM_{2.5}$ | 0.1959 | 165.60 | 8.87 | |
| VOC | 0.36 | 304.32 | 16.30 | |
| CO | 2.880 | 2434.58 | 130.43 | |
| HAP - Lead (Pb) | NA | Counted Above * | Counted Above * | |
| HAP: Metals | 0.29 | 243.54 | 13.05 | |
| **Shakeout** | | | | |
| PM | 0.034 | 28.74 | 10.78 | 254.6 |
| $PM_{10}$ | 0.058 | 49.03 | 18.39 | 254.6 |
| $PM_{2.5}$ | 0.058 | 49.03 | 18.39 | |
| VOC | 0.115 | 97.21 | 36.46 | |
| CO | 1.320 | 1115.85 | 418.47 | |
| HAP - Lead (Pb) | NA | Counted Above * | Counted Above * | |
| HAP: Metals | 0.034 | 28.74 | 10.78 | |
| **Sand Handling** | | | | |
| PM | 0.034 | 28.74 | 10.78 | 247.2 |
| $PM_{10}$ | 0.058 | 49.03 | 18.39 | 247.2 |
| $PM_{2.5}$ | 0.058 | 49.03 | 18.39 | |
| VOC | NA | Counted Above ** | Counted Above ** | |
| CO | NA | NA | NA | |
| HAP - Lead (Pb) | NA | Counted Above * | Counted Above * | |
| **Return Sand Conveyor RSC1** | | | | |
| PM | 0.034 | 28.74 | 10.78 | |
| $PM_{10}$ | 0.058 | 49.03 | 18.39 | |
| $PM_{2.5}$ | 0.058 | 49.03 | 18.39 | |
| VOC | NA | Counted Above ** | Counted Above ** | |
| CO | NA | NA | NA | |
| HAP - Lead (Pb) | NA | Counted Above * | Counted Above * | |

## Herman 3 Mold Line
## Installation Date(s): 1991

| Total Emissions: | Uncontrolled PTE (ton/yr) | Limited PTE (ton/yr) |
|---|---|---|
| PM | 400.44 | 39.93 |
| $PM_{10}$ | 307.96 | 48.02 |
| $PM_{2.5}$ | 307.96 | 48.02 |
| VOC | 539.33 | 60.14 |
| CO | 5072.04 | 630.42 |
| HAP - Lead (Pb) | 10.99 | 0.59 |
| HAP: Metals | 371.70 | 29.15 |

| | |
|---|---|
| Pouring | P (ton/hr) = 193 |
| Casting/Cooling | P (ton/hr) = 193 |
| Shakeout | P (ton/hr) = 193 |
| Sand Handling | P (ton/hr) = 165 |

**Calculation Methodology**

The annual sand limit and emission factors for Herman 3 were derived from SSM 085-14027-00003, issued on February 22, 2002, and SSM 085-18009-00003, issued on December 9, 2003.

VOC emissions from Herman 3 Pouring Station, Castings Cooling, Shakeout, and Sand Handling are controlled by the Sonoperoxone® system.

The Sonoperoxone® system is common to Herman 3 Pouring, Castings Cooling, Shakeout, and Sand Handling.

* All lead emissions are accounted for in the emission factor for Pouring.

** The VOC emissions from sand handling are accounted for in the emission factor for shakeout.

Pouring & Casting/Cooling & Shakeout:

Uncontrolled PTE (ton/yr) = Max Capacity ((ton sand + metal)/hour) x Emission Factor (lb/(ton sand + metal)) x 8760 hr/yr / 2000 lb/ton

Limited PTE (ton/yr) = Limited Capacity ((ton sand + metal)/year) x Emission Factor (lb/(ton sand + metal)) x 1 ton/2000 lb

All PM emissions are also HAP-Metals emissions.

Particulate emissions from pouring and casting/cooling are not controlled.

Particulate emissions from shakeout are controlled by Wet Collector #1, #4 and Baghouse #11.

Sand Handling

Uncontrolled PTE (ton/yr) = Max Capacity ((ton sand)/hr) x Emission Factor (lb/(ton sand)) x 8760 / 2000

Limited PTE (ton/yr) = Limited Capacity ((ton sand)/year) x Emission Factor (lb/ton sand) x 1 ton/2000 lb

Particulate emissions from sand handling are controlled by Wet Collector #1, #2, #4 and Baghouse #11.

The Baghouse #11 is common to Herman 3 Shakeout, and Herman 3 Sand Handling.

## Inclined Shakeout and Sort System
## Installation Date(s): Prior to 1977

Maximum Capacity: 424,860 tons per year of metal throughput
48.5 tons per hour of metal

| Pollutant | Uncontrolled Emission Factors (lb/ton) | Uncontrolled PTE (ton/yr) | Limited Emission Factors (lb/ton) | PSD Minor Limit Limited PTE (ton/yr) | 326 IAC 6-3-2 Limited PTE E (ton/yr) |
|---|---|---|---|---|---|
| PM | 3.2 | 155.20 | 0.072 | 15.29 | 194.0 |
| $PM_{10}$ | 2.24 | 108.64 | 0.072 | 15.29 | 194.0 |
| $PM_{2.5}$ | 1.34 | 64.99 | 0.072 | 15.29 | 194.0 |

Process Weight, P (ton/hr) = 48.5

**Calculation Methodology**
The emission factors for the Inclined Shakeout and Sort System from AP-42 12.10-9.
The emission factors for the Inclined Shakeout and Sort System were derived from SSM 085-14027-00003, issued on February 22, 2002.
Uncontrolled PTE (ton/yr) = Controlled PTE (lb/hr) x 8760 hr/yr / 2000 lb/ton
Limited PTE (ton/yr) = Emission Factor (lb/ton) x Capacity (ton/hr) x 8760 hr/yr / 2000 lb/ton
Particulate emissions from the inclined shakeout and sort system are controlled by Baghouse #2.

## Vibratory shaker

The vibratory shaker station will assist in the removal of sand from casting cavities prior to casting finishing.

Nominal Throughput: 48.5 ton/hr
Annual Throughput: 424,860 ton/yr
Limited Capacity: 142,000 ton/yr

| Pollutant | Uncontrolled Emission Factors (lb/ton) | Uncontrolled PTE (ton/yr) | Fugitives (ton/yr) | Limited Emission Factors (lb/ton) | PSD Minor Lim (ton/yr) | 326 IAC 6-3-2 (ton/yr) |
|---|---|---|---|---|---|---|
| PM | 3.2 | 679.78 | 4.54 | 0.188 | 13.35 | 194.0 |
| $PM_{10}$ | 2.24 | 475.84 | 3.18 | 0.154 | 10.93 | 194.0 |

**Methodology**
Emission factors for uncontrolled emissions are from WebFIRE, SCC 3-04-003-31 (Casting Shakeout)
Uncontrolled Emission (tons/yr) = Maximum Throughput (ton/yr) x Emission Factor (lb/ton)/2,000 lb/ton
Fugitive Emissions (tons/yr) = (Uncontrolled Emissions x (Limited Throughput / Maximum Throughput)) x (1 - Capture Efficiency)
Process Weight, P (ton/hr) = 48.5

## Waste Sand Handling, Screening and Transport System
## Installation Date(s): Prior to 1977

| | | |
|---|---|---|
| Limited Capacity: | 112,752 | tons per year of waste sand throughput |
| Maximum Capacity: | 175,200 | tons per year of waste sand throughput |
| | 20 | tons per hour of waste sand |

| **Pollutant** | **Uncontrolled Emission Factors** (lb/ton) | **Uncontrolled PTE** (ton/yr) | **Limited Emission Factors** (lb/ton) | **PSD Minor Limit** (ton/yr) | **326 IAC 6-3-2 E** (ton/yr) |
|---|---|---|---|---|---|
| PM | 3.6 | 315.36 | 0.072 | 4.06 | 159.7 |
| $PM_{10}$ | 0.54 | 47.30 | 0.011 | 0.62 | 159.7 |
| $PM_{2.5}$ | 0.54 | 47.30 | 0.011 | 0.62 | 159.7 |

Process Weight, P (ton/hr) = 20

**Calculation Methodology**

The annual metal limit and emission factors for the Inclined Shakeout and Sort System were derived from SSM 085-14027-00003, issued on February 22, 2002.

## Shot Blast Machines

Limited Capacity: 112,752 tons per year of finished metal (total for SB-1 through SB-9)
tal Maximum Capacity: 573,780 tons per year of finished metal throughput
Total Hourly Capacity: 65.50 tons per hour of finished metal

| Pollutant | Uncontrolled Emission Factors (lb/ton) | Uncontrolled PTE (ton/yr) | Limited Emission Factors (lb/ton) | PSD Minor Limit (ton/yr) | 326 IAC 6-3-2 E (ton/yr) | |
|---|---|---|---|---|---|---|
| **SB-1, SB-2, SB-4 & SB-5** | | | Max. Capacity: | 5.0 | tons/hr finished metal (each) | |
| PM | 17 | 1489 | 0.5066 | 12.69 | 112.4 | |
| $PM_{10}$ | 1.7 | 149 | 0.5066 | 12.69 | 112.4 | |
| $PM_{2.5}$ | 1.7 | 149 | NA | 12.69 | 112.4 | |
| HAP - Lead (Pb) | | | 0.0045 | 0.09 | | |
| **SB-3, SB-6, & SB-8** | | | Max. Capacity: | 3.0 | tons/hr finished metal (each) | |
| PM | 17 | 670 | 0.5066 | 9.52 | 96.6 | |
| $PM_{10}$ | 1.7 | 67 | 0.5066 | 9.52 | 96.6 | |
| $PM_{2.5}$ | 1.7 | 67 | NA | 9.52 | 96.6 | |
| HAP - Lead (Pb) | | | 0.0045 | 0.08 | | |
| **SB-7** | | | Max. Capacity: | 6.0 | tons/hr finished metal | |
| PM | 17 | 447 | 0.5066 | 3.17 | 118.2 | |
| $PM_{10}$ | 1.7 | 45 | 0.5066 | 3.17 | 118.2 | |
| $PM_{2.5}$ | 1.7 | 45 | NA | 3.17 | 118.2 | |
| HAP - Lead (Pb) | | | 0.0045 | 0.03 | | |
| **SB-9** | | | Max. Capacity: | 12.5 | tons/hr finished metal | |
| PM | 17 | 931 | 0.5066 | 3.17 | 142.9 | |
| $PM_{10}$ | 1.7 | 93 | 0.5066 | 3.17 | 142.9 | |
| $PM_{2.5}$ | 1.7 | 93 | NA | 3.17 | 142.9 | |
| HAP - Lead (Pb) | | | 0.0045 | 0.03 | | |
| **SB-10** | | | Max. Capacity: | 5.0 | tons/hr finished metal | |
| PM | 17 | 372 | NA | 24.9 | 112.4 | |
| $PM_{10}$ | 1.7 | 37 | NA | 14.9 | 112.4 | |
| $PM_{2.5}$ | 1.7 | 37 | NA | 14.90 | 112.4 | |
| HAP - Lead (Pb) | | | NA | | | |
| **Hose Blast for SB-8** | *Limited (ton/yr): 16500* | | Max. Capacity: | 8.0 | tons/hr finished metal | fugitive |
| PM | 17 | 596 | 0.67 | 5.53 | 127.6 | 1.40 |
| $PM_{10}$ | 1.7 | 60 | 0.34 | 2.81 | 127.6 | 0.14 |
| $PM_{2.5}$ | 1.7 | 60 | NA | 2.81 | 127.6 | |
| HAP - Lead (Pb) | 0.058 | 2.03 | 0.066 | 0.54 | | 0.005 |

## Shot Blast Machines

**SB-10 Blow-off chaml** *Limited (ton/yr): 20000* Max. Capacity: 5.0 tons/hr finished metal fugitive

| | | | | | | |
|---|---|---|---|---|---|---|
| PM | 17 | 372 | 0.605 | 6.05 | 112.4 | 40.95 |
| $PM_{10}$ | 1.7 | 37 | 1.088 | 10.88 | 112.4 | 7.45 |
| $PM_{2.5}$ | 1.7 | 37 | NA | 10.88 | 112.4 | |
| HAP - Lead (Pb) | 0.058 | 1.27 | 0.058 | 0.58 | | 0.25 |

| **Total Emissions:** | **Uncontrolled PTE** (ton/yr) | **Limited PTE** (ton/yr) |
|---|---|---|
| PM | 4877 | 65.04 |
| $PM_{10}$ | 488 | 57.15 |
| $PM_{2.5}$ | 488 | 57.15 |
| HAP - Lead (Pb) | | 1.36 |

**326 IAC 6-3-2 Particulate Emission Rate Limitation**

| | | |
|---|---|---|
| SB-1, SB-2, SB-4 & SE | P (ton/hr) = | 5.0 |
| SB-3, SB-6, & SB-8 | P (ton/hr) = | 3.0 |
| SB-7 | P (ton/hr) = | 6.0 |
| SB-9 | P (ton/hr) = | 12.5 |
| SB-10 | P (ton/hr) = | 5 |
| Hose Blast for SB-8 | P (ton/hr) = | 8 |
| SB-10 Blow-off chamber | P (ton/hr) = | 5 |
| Total: | P (ton/hr) = | 65.50 |

**Calculation Methodology**

Uncontrolled PTE (ton/yr) = Emission Factor (lb/ton) * 8760 / 2000

Emission Factors from FIRE 3-04-003-40

The annual metal limit and emission factors for the Shot Blasting Machines were derived from SSM 085-14027-00003, issued on February 22, 2002.

The emission factors for Shot Blasting Machines SB-10 and SB-11 were derived from SSM 085-22046-00003, issued on March 23, 2006.

Uncontrolled PTE (ton/yr) = No. of like units x Max Capacity (ton finished metal/hour) x Emission Factor (lb/ton finished metal) x 8760 hr/yr / 2000 lb/ton

Limited PTE (ton/yr) = No. of like units x Limited Capacity (ton finished metal/yr) x [ Emission Factor (lb/ton finished metal) / Total No. of units ] x 8760 x 1 ton/2000 lb

Fugitive Emissions (tons/yr) = (Uncontrolled Emissions x (Limited Throughput / Maximum Throughput)) x (1 - Capture Efficiency)

Baghouse #3 is common to SB-1, SB-2, SB-3, & SB-4 & SB-10.

Baghouse #6 is common to SB-7, GR-19, GR-20, GR-23, GR-25, GR-26, GR-34, GR-35, & GR-36.

Baghouse #12 is common to SB-9, GR-31, GR-32, GR-33, & GR-37.

Baghouse #15 is common to GR-1 through GR-10, GR-29, GR-30, Grinders ABB & FANUC.

Baghouse #16 is common to SB-5, SB-6, & SB-8, Hose Blast System #8, GR-11, GR-12, GR-13, GR-14, GR-16, & GR-17.

## Grinders
## Installation Date(s): Prior to 1977

| | | |
|---|---|---|
| Total Maximum Capacity: | 981,120 | tons per year of finished metal throu |
| Total Hourly Capacity: | 112.0 | tons per hour of finished metal |
| Total Number of Grinders: | 28 | |
| Limited Capacity: | 15500 | tons per year ABB and FANUC |
| Limited Capacity: | 112,752 | tons per year of finished castings |

| Pollutant | Uncontrolled Emission Factors (lb/ton) | Uncontrolled PTE (ton/yr) | Limited Emission Factor (lb/ton) | Limited PTE (ton/yr) | 326 IAC 6-3-2 Limited PTE (ton/yr) |
|---|---|---|---|---|---|
| PM | 17 | 8339.5 | 0.5066 | 28.56 | 96.8 |
| $PM_{10}$ | 1.7 | 834.0 | 0.5066 | 28.56 | 96.8 |
| $PM_{2.5}$ | 1.7 | 834.0 | 0.5066 | 28.56 | 96.8 |
| Lead (Pb) | | | 0.0045 | 0.25 | |

| | Nominal Throughput | | Annual Throughput | |
|---|---|---|---|---|
| ABB Robot Grinder | 1.0 | ton/hr | 8,760 | ton/yr |
| FANUC Robot Grinder | 1.5 | ton/hr | 13,140 | ton/yr |
| Total | | | 21,900 | ton/yr |

| ABB and FANUC | Emissions | | |
|---|---|---|---|
| | PM | $PM_{10}/PM_{2.5}$ | Lead |
| *WebFIRE Emission Factor (lb/ton)* | *17* | *1.70* | *0.058* |
| Uncontrolled PTE (ton/yr) | 186.15 | 18.62 | 0.64 |
| Capture Efficiency (%) | 99% | 99% | 99% |
| Control Efficiency (%) | 98% | 80% | 98% |
| Controlled PTE (ton/yr) | 2.61 | 2.61 | 0.01 |
| **Limited PTE (ton/yr)** | **2.61** | **2.61** | **0.55** |
| **PSD Minor Limits (lb/ton)** | **0.34** | **0.34** | **0.071** |

**Calculation Methodology**

The annual metal limit and emission factors for the Grinders were derived from SSM 085-14027-00003, issued on February 22, 2002. ABB & FANUC from WebFIRE.

Emission Factors for limited emissions were provided by Dalton Foundry

Uncontrolled PTE (ton/yr) = No. of like units x Max Capacity (ton finished metal/hour) x Emission Factor (lb/ton finished metal) x 8760 hr/yr / 2000 lb/ton

Limited PTE (ton/yr) = No. of like units x Limited Capacity (ton finished metal/yr) x [ Emission Factor (lb/ton finished metal) / Total No. of units ] x 8760 x 1 ton/2000 lb

Controlled Emissions (tons/yr) = (Uncontrolled Emissions x (Limited Throughput / Maximum Throughput)) x Capture Efficiency x (1 - Control Efficiency)

All Grinders are controlled by Baghouses.

Baghouse #6 is common to SB-7, GR-19, GR-20, GR-23, GR-25, GR-26, GR-34, GR-35, & GR-36.

Baghouse #12 is common to SB-9, GR-31, GR-32, GR-33, & GR-37.

Baghouse #15 is common to GR-1 through GR-4, GR-9, GR-10, GR-29, GR-30, Grinders ABB & FANUC

Baghouse #16 is common to SB-5, SB-6, & SB-8, Hose Blast System #8, GR-11, GR-12, GR-13, GR-14, GR-16, & GR-17.

## Paint Dip Tank
## Installation Date(s): Prior to 1977

| Material | Density (lb/gal) | Weight % Volatile ($H_20$ & Organics) | Weight % Water (%) | Weight % Organics (%) | Volume % Water (%) | Volume % Solids (%) | Material Usage (gal/unit) | Max. Production (unit/hr) | VOC Content less $H_2O$ (lb/gal) | VOC Content (lb/gal) | PTE VOC (ton/yr) | PTE PM (ton/yr) | lb VOC / gal solids (lb/gal) | Transfer Efficiency (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Black Water-Reducible Primer (N-5570N) | 11.68 | 43% | 37% | 7% | 52% | 37% | 0.052 | 125 | 1.60 | 0.77 | 21.97 | 0.00 | 2.07 | 100% |
| Butyl Cellusolve (T-76) | 7.51 | 100% | 0% | 100% | 0% | 0% | 0.052 | 125 | 7.51 | 7.51 | 213.70 | 0.00 | 0.00 | 0% |
| | | | | | | | | | | | **235.67** | **0.00** | | |

**Calculation Methodology**

Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) * Weight % Organics) / (1-Volume % water)
Pounds of VOC per Gallon Coating = (Density (lb/gal) * Weight % Organics)
Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr)
Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (24 hr/day)
Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (8760 hr/yr) * (1 ton/2000 lbs)
Potential PM (ton/yr) = (units/hr) * (gal/unit) * (lbs/gal) * (1- Weight % Volatiles) * (1-Transfer efficiency) *(8760 hr/yr) *(1 ton/2000 lbs)
Pounds VOC per Gallon of Solids = (Density (lbs/gal) * Weight % organics) / (Volume % solids)
Total = Worst Coating + Sum of all solvents used

| Material | Density (lb/gal) | Material Usage (gal/unit) | Max. Production (unit/hr) | Weight % Xylene (%) | Weight % Toluene (%) | Weight % Formaldeh (%) | Weight % Benzene (%) | Weight % Hexane (%) | Weight % Glycol (%) | Weight % Methanol (%) |
|---|---|---|---|---|---|---|---|---|---|---|
| Black Water-Reducible Primer (N-5570N) | 11.68 | 0.052 | 125 | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Butyl Cellusolve (T-76) | 7.51 | 0.052 | 125 | 0% | 0% | 0% | 0% | 0% | 0% | 0% |

| Xylene Emissions (ton/yr) | Toluene Emissions (ton/yr) | Formaldehyde Emissions (ton/yr) | Benzene Emissions (ton/yr) | Hexane Emissions (ton/yr) | Glycol Ethers Emissions (ton/yr) | Methanol Emissions (ton/yr) |
|---|---|---|---|---|---|---|
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

**Calculation Methodology**

HAPS emission rate (tons/yr) = Density (lb/gal) * Gal of Material (gal/unit) * Maximum (unit/hr) * Weight % HAP * 8760 hrs/yr * 1 ton/2000 lbs

## Phenolic Urethane Core Making Lines (#1, #2, #3, #4, #5, & #8)
## Installation Date(s): pre 1977 - 1998

| Material | Pollutant | Emission Factors (lb/ton) | Uncontrolled PTE (ton/yr) | Limited PTE (ton/yr) | *Controlled PTE (ton/yr) | Percent Volatile (%) | Resin addition (lb resin / lb sand) | Resin addition (lb / lb sand) | Specific Gravity | Density (lb/gal) | VOC Content (lb/gal) | Material Usage (gal/yr) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Phenolic Urethane Core Making Line #1** | | | *Installation Date(s): 1986 - 1989* | | | (15-19) | | | | | | |
| Limited Capacity: | | 17,922 | tons per year of sand | | | | | | | | | |
| Maximum Capacity: | | 61,320 | tons per year of sand | | | 7.0 | | | tons per hour of sand | | | |
| Mixers Resin | VOC | 0.185 | 5.67 | 1.66 | 1.66 | See note | 0.0125 | 25 | 1.10 | 9.4 | | 47,665 |
| Core Machine Resin | VOC | 0.541 | 16.59 | 4.85 | 4.85 | below | | | 1.16 | 9.4 | | |
| Core Wash | VOC | 0.200 | 6.13 | 1.79 | 1.79 | 1% | | | 1.38 | | 0.12 | 31,144 |
| Amine Catalyst | VOC | 2.750 | 84.32 | 24.64 | 2.86 | 100% | | | 0.72 | | 5.97 | 8,259 |
| Core Box Cleaner | VOC | 0.144 | 4.42 | 1.29 | 1.29 | 100% | | | 0.98 | | 8.17 | 316 |
| Release Agent | VOC | 0.105 | 3.22 | 0.94 | 0.94 | 90% | | | 0.82 | | 6.15 | 306 |
| | | | **120.34** | **35.17** | **13.39** | | | | | | | |
| **Phenolic Urethane Core Making Line #2** | | | *Installation Date(s): pre 1977 - 1992* | | | | | | | | | |
| Limited Capacity: | | 4,656 | tons per year of sand | | | | | | | | | |
| Maximum Capacity: | | 26,280 | tons per year of sand | | | 3.0 | | | tons per hour of sand | | | |
| Mixers Resin | VOC | 0.185 | 2.43 | 0.43 | 0.43 | See note | 0.0125 | 25 | 1.10 | 9.4 | | 12,383 |
| Core Machine Resin | VOC | 0.541 | 7.11 | 1.26 | 1.26 | below | | | 1.16 | 9.4 | | |
| Core Wash | VOC | 0.200 | 2.63 | 0.47 | 0.47 | 1% | | | 1.38 | | 0.12 | 8,091 |
| Amine Catalyst | VOC | 2.750 | 36.14 | 6.40 | 0.74 | 100% | | | 0.72 | | 5.97 | 2,146 |
| Core Box Cleaner | VOC | 0.144 | 1.89 | 0.34 | 0.34 | 100% | | | 0.98 | | 8.17 | 82 |
| Release Agent | VOC | 0.105 | 1.38 | 0.24 | 0.24 | 90% | | | 0.82 | | 6.15 | 79 |
| | | | **51.57** | **9.14** | **3.48** | | | | | | | |
| **Phenolic Urethane Core Making Line #3** | | | *Installation Date(s): pre 1977 - 1982* | | | | | | | | | |
| Limited Capacity: | | 23,200 | tons per year of sand | | | | | | | | | |
| Maximum Capacity: | | 61,320 | tons per year of sand | | | 7.0 | | | tons per hour of sand | | | |
| Mixers Resin | VOC | 0.185 | 5.67 | 2.15 | 2.15 | See note | 0.0125 | 25 | 1.10 | 9.4 | | 61,702 |
| Core Machine Resin | VOC | 0.541 | 16.59 | 6.28 | 6.28 | below | | | 1.16 | 9.4 | | |
| Core Wash | VOC | 0.200 | 6.13 | 2.32 | 2.32 | 1% | | | 1.38 | | 0.12 | 40,316 |
| Amine Catalyst | VOC | 2.750 | 84.32 | 31.90 | 3.70 | 100% | | | 0.72 | | 5.97 | 10,692 |
| Core Box Cleaner | VOC | 0.144 | 4.42 | 1.67 | 1.67 | 100% | | | 0.98 | | 8.17 | 409 |
| Release Agent | VOC | 0.105 | 3.22 | 1.22 | 1.22 | 90% | | | 0.82 | | 6.15 | 396 |
| | | | **120.34** | **45.53** | **17.33** | | | | | | | |
| **Phenolic Urethane Core Making Line #4** | | | *Installation Date(s): pre 1977 - 1993* | | | | | | | | | |
| Limited Capacity: | | 12,910 | tons per year of sand | | | | | | | | | |
| Maximum Capacity: | | 61,320 | tons per year of sand | | | 7.0 | | | tons per hour of sand | | | |
| Mixers Resin | VOC | 0.185 | 5.67 | 1.19 | 1.19 | See note | 0.0125 | 25 | 1.10 | 9.4 | | 34,335 |
| Core Machine Resin | VOC | 0.541 | 16.59 | 3.49 | 3.49 | below | | | 1.16 | 9.4 | | |
| Core Wash | VOC | 0.200 | 6.13 | 1.29 | 1.29 | 1% | | | 1.38 | | 0.12 | 22,434 |
| Amine Catalyst | VOC | 2.750 | 84.32 | 17.75 | 2.06 | 100% | | | 0.72 | | 5.97 | 5,950 |
| Core Box Cleaner | VOC | 0.144 | 4.42 | 0.93 | 0.93 | 100% | | | 0.98 | | 8.17 | 227 |
| Release Agent | VOC | 0.105 | 3.22 | 0.68 | 0.68 | 90% | | | 0.82 | | 6.15 | 220 |
| | | | **120.34** | **25.34** | **9.64** | | | | | | | |

## Phenolic Urethane Core Making Lines (#1, #2, #3, #4, #5, & #8)
## Installation Date(s): pre 1977 - 1998

**Phenolic Urethane Core Making Line #5** (21, 22 & 28)

Limited Capacity: 2,383 tons per year of sand
Maximum Capacity: 52,560 tons per year of sand 6.0 tons per hour of sand

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mixers Resin | VOC | 0.185 | 4.86 | 0.22 | 0.22 | See note below | 0.0125 | 25 | 1.10 | 9.4 | | 6,338 |
| Core Machine Resin | VOC | 0.541 | 14.22 | 0.64 | 0.64 | | | | 1.16 | 9.4 | | |
| Core Wash | VOC | 0.200 | 5.26 | 0.24 | 0.24 | 1% | | | 1.38 | | 0.12 | 4,141 |
| Amine Catalyst | VOC | 2.750 | 72.27 | 3.28 | 0.38 | 100% | | | 0.72 | | 5.97 | 1,098 |
| Core Box Cleaner | VOC | 0.144 | 3.78 | 0.17 | 0.17 | 100% | | | 0.98 | | 8.17 | 42 |
| Release Agent | VOC | 0.105 | 2.76 | 0.13 | 0.13 | 90% | | | 0.82 | | 6.15 | 41 |
| | | | **103.15** | **4.68** | **1.78** | | | | | | | |

**Phenolic Urethane Core Making Line #8** *Installation Date(s): 1997 - 1998*

Limited Capacity: 6,350 tons per year of sand
Maximum Capacity: 43,800 tons per year of sand 5.0 tons per hour of sand

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mixers Resin | VOC | 0.185 | 4.05 | 0.59 | 0.59 | See note below | 0.0125 | 25 | 1.10 | 9.4 | | 16,888 |
| Core Machine Resin | VOC | 0.541 | 11.85 | 1.72 | 1.72 | | | | 1.16 | 9.4 | | |
| Core Wash | VOC | 0.200 | 4.38 | 0.64 | 0.64 | 1% | | | 1.38 | | 0.12 | 11,035 |
| Amine Catalyst | VOC | 2.750 | 60.23 | 8.73 | 1.01 | 100% | | | 0.72 | | 5.97 | 2,926 |
| Core Box Cleaner | VOC | 0.144 | 3.15 | 0.46 | 0.46 | 100% | | | 0.98 | | 8.17 | 112 |
| Release Agent | VOC | 0.105 | 2.30 | 0.33 | 0.33 | 90% | | | 0.82 | | 6.15 | 108 |
| | | **3.925** | **85.96** | **12.46** | **4.74** | | | | | | | |

Limited Capacity: 67,421 tons per year of sand
Maximum Capacity: 306,600 tons per year of sand *78.01%* *Reduction on sand throughput*
Maximum Resin Usage: 0.726 lb VOC per ton of sand
*Post Control Catalyst VOC Emission Factor: 0.319 lb VOC per ton of sand

| | **Uncontrolled PTE** (ton/yr) | **Limited PTE** (ton/yr) | **Material Usage** (gal/yr) |
|---|---|---|---|
| Mixers Resin | 28.36 | 6.24 | 179,311 |
| Core Wash | 30.66 | 6.74 | 117,160 |
| Core Machine Resin | 82.94 | 18.24 | 0 |
| Core Machine Catalyst | 421.58 | 92.70 | 31,071 |
| Core Box Cleaner | 22.08 | 4.85 | 1,188 |
| Release Agent | 16.10 | 3.54 | 1,150 |
| **Total VOC Emissions:** | **601.70** | **132.31** | |

## Phenolic Urethane Core Making Lines (#1, #2, #3, #4, #5, & #8)
## Installation Date(s): pre 1977 - 1998

| **Particulate Emissions:** ($PM/PM_{10}/PM_{2.5}$) Lines 1-5 & 8 | **Air Flowrate** (acfm) | **Grain Loading** (gr/ascf) | **PM Uncontrolled PTE** (lb/hr) | **PM Uncontrolled PTE** (ton/yr) | **PM Controlled PTE** (ton/yr) | | | **$PM_{10}$ Controlled PTE** (ton/yr) | | **HAP (Metals) PTE** (ton/yr) |
|---|---|---|---|---|---|---|---|---|---|---|
| | 15,000 | 0.02 | 2.57 | 11.26 | **0.22** | | | **0.22** | | **0.22** |

**326 IAC 6-3-2 Particulate Emission Rate Limitation**

| | | E = 4.10 P^0.67 | | | ton/yr |
|---|---|---|---|---|---|
| Phenolic Urethane Core Making Line #1 | P (ton/hr) = 7.0 | **E** (lb/hr) = | **15.1** | | **66.1** |
| Phenolic Urethane Core Making Line #2 | P (ton/hr) = 3.0 | **E** (lb/hr) = | **8.6** | | **37.5** |
| Phenolic Urethane Core Making Line #3 | P (ton/hr) = 7.0 | **E** (lb/hr) = | **15.1** | | **66.1** |
| Phenolic Urethane Core Making Line #4 | P (ton/hr) = 7.0 | **E** (lb/hr) = | **15.1** | | **66.1** |
| Phenolic Urethane Core Making Line #5 | P (ton/hr) = 6.0 | **E** (lb/hr) = | **13.6** | | **59.7** |
| Phenolic Urethane Core Making Line #8 | P (ton/hr) = 5.0 | **E** (lb/hr) = | **12.1** | | **52.8** |
| | | | | | 348.4 |

**Calculation Methodology**

VOC Controlled PTE (ton/yr) = Max Capacity (ton sand/hr) x Emission Factor (lb/ton sand) x 8760 hr/yr / 2000 lb/ton
VOC Limited PTE (ton/yr) = Limited Capacity (ton sand/yr) x Emission Factor (lb/ton sand) x 1 ton/2000 lb
(tons/year) = [ Limited PTE

Percent Volatile for Resin Note: The amount of VOCs from the resin is an emitted amount after the chemical reation of the two parts. Since the majority of the VOC content of the resins is reacted a different method of using the amount of VOC emitted from the resin per amount of resin used must be employed for calculating the resin usage (gal/yr).

Material Usage for resin (gal/yr) = Sum of Mixer and core machine limited & controlled PTE (ton/yr) x 2,000 lb/ton x Resin addition lb/ton sand x 1 / sum of mixer and core machine emission factor (lb VOC / ton sand) / Density (lb/gal)
VOC Content (lb/gal) = Specific Gravity x Density H20 (lb/gal) x Percent Volatile
Material Usage (gal/yr) = Max Capacity (ton sand/yr) x Emission Factor (lb/ton sand) / VOC Content (lb/gal)
Particulate emissions are captured and controlled by a Cyclone prior to entering Acid Scrubber
All PM emissions are also HAP-Metals emissions.

Acid Scrubber AF is common to:

Phenolic Urethane Core Machines #1 and #2,
Phenolic Urethane Core Machines #4 and #5,
Phenolic Urethane Core Machines #7 through #19,
Phenolic Urethane Core Machines #21 and #22,
Phenolic Urethane Core Machine #25,
Phenolic Urethane Core Machines #27 through #29, and
Cold Box Phenolic Urethane Core Machines #31 through #33.

Baghouse Q is common to Phenolic Urethane Core Sand Hopper #1, and Phenolic Urethane electric Sand Heater #1.
Baghouse U is common to Phenolic Urethane Core Sand Hoppers #3 and #4, Phenolic Urethane electric Sand Heaters #3 and #4, and Air Set Core Sand Hopper #3.

Baghouse Z is common to:

Sand Hopper #9,
Sand Heater #9.
Phenolic Urethane Core Sand Hopper #8
Phenolic Urethane Sand Heater #5, and
Phenolic Urethane Sand Heater #8.

## Phenolic Urethane Core Making Line #9

Maximum Capacity:

| | | | |
|---|---|---|---|
| 18 | tons per hour of sand | 157,680 | tons per year of sand |
| 41.04 | pounds per hour of resin | 180 | tons per year of resin |
| 2.75 | pound of catalyst per ton of core sand | 217 | tons per year of catalyst |
| 20.408 | pound of core wash per ton of core sand | 1,609 | tons per year of core wash |
| 18 | tons per hour of cores | 157,680 | tons per year of cores |

**Usage Limits:**

| | | | |
|---|---|---|---|
| 315,360,000 | pounds per year of sand | 12,000 | tons per year of sand |
| 359,510 | pounds per year of resin | 295,000.0 | pounds per year of resin |
| 433,620 | pounds per year of catalyst | 32,935.0 | pounds per year of catalyst |
| 245,505 | pounds per year of core wash | 245,505.0 | pounds per year of core wash |
| 1,397 | pounds per year of release agent | 1,397 | pounds per year of release agent |
| 1,725 | pounds per year of core box cleane | 1,725 | pounds per year of core box cleaner |
| 315,360,000 | pounds per year of cores | | |

| **Material** | **Pollutant** | **Uncontrolled Emission Factors (lb/ton)** | **Controlled Emission Factors** PM=lb/ton sand, **Uncontrolled Emission Factors** VOC=lb/lb material | **Uncontrolled PTE** (ton/yr) | **Limited PTE** (ton/yr) |
|---|---|---|---|---|---|
| Mixers | PM | 3.6 | 0.33 | 283.82 | 1.98 |
| Mixers | $PM_{10}$ | 0.54 | 0.065 | 42.57 | 0.39 |
| Resin | Noncatalyst VOC | | 0.02904 | 5.22 | 4.28 |
| Catalyst | VOC | | 1.0 | 216.81 | 16.47 |
| Core Wash | VOC | | 0.02 | 2.46 | 2.46 |
| Release Agent | VOC | | 0.9 | 0.63 | 0.63 |
| Core Box Cleaner | VOC | | 1.0 | 0.86 | 0.86 |
| Mixers | HAP: Metals | | 0.3 | 26.02 | **1.98** |
| | | | **Total VOC Emissions:** | **226.0** | **24.7** |

**326 IAC 6-3-2 Particulate Emission Rate Limitation** E = 55 P^0.11 - 40

Sand Handling: P (ton/hr) = 18 **E** (lb/hr) **= 35.6** 155.9

**Calculation Methodology**

The annual limits and emission factors for the Large Core Production Cell were derived from SSM 085-21851-00003, issued on October 6, 2006.

Uncontrolled PTE (ton/yr) = Max Capacity (ton sand/yr) x Emission Factor (lb/ton sand) * 8760 / 2000

PM Limited PTE (ton/yr) = Limited Capacity (ton sand/yr) x Emission Factor (lb/ton sand) x 1 ton/2000 lb

All PM emissions are also HAP-Metals emissions.

Particulate emissions from the enclosed pneumatic sand transporter are controlled by Baghouse V.

The Baghouse V is common to Large Core Sand Holding Hopper, and Large Core Sand Weigh Hopper.

VOC Limited PTE (ton/yr) = Limited Capacity (lb material/yr) x Emission Factor (lb VOC/lb material) x 1 ton/2000 lb

Phenolic Resin VOC Limited PTE (ton/yr) = Limited Capacity (lb resin/yr) x Emission Factor (lb noncatalyst VOC/lb resin) x 1 ton/2000 lb

## Shell Core Making Process
## Installation Date(s): Prior to 1977

| Material | Pollutant | Uncontrolled Emission Factors (lb/ton) | Uncontrolled PTE (ton/yr) | Percent Volatile (%) | Specific Gravity | VOC Content (lb/gal) | Material Usage (gal/yr) |
|---|---|---|---|---|---|---|---|
| Maximum Capacity: | 7,008 tons / year of sand | | | 0.8 tons per hour of sand | | | |
| Core Wash | VOC | 0.200 | 0.70 | 1% | 1.38 | 0.12 | 12,178 |
| Core Machine Resin | VOC | 0.541 | 1.90 | 100% | 1.16 | 9.67 | 392 |
| Catalysts | VOC | 2.750 | 9.64 | 100% | 0.72 | 5.97 | 3,230 |
| Core Box Cleaner | VOC | 0.144 | 0.50 | 100% | 0.98 | 8.17 | 123 |
| Release Agent | VOC | 0.105 | 0.37 | 90% | 0.82 | 6.15 | 120 |
| | | **Total VOC Emissions:** | **13.10** | | | | |

**Particulate Emissions:** ($PM/PM_{10}/PM_{2.5}$)

| **Air Flowrate** (acfm) | **Grain Loading** (gr/ascf) | **$PM/PM_{10}/PM_{2.5}$ Uncontrolled PTE** (ton/yr) | **HAP (Metals) Uncontrolled PTE** (ton/yr) |
|---|---|---|---|
| 15,000 | 0.02 | **11.26** | **11.26** |

**326 IAC 6-3-2 Particulate Emission Rate Limitation**

E = 4.10 P^0.67

| | | | | ton/yr |
|---|---|---|---|---|
| Sand Making Process: | P (ton/hr) = | 0.8 | **E** (lb/hr) **=** 3.5 | 15.5 |
| Shell Core Machine #6: | P (ton/hr) = | 0.2 | **E** (lb/hr) **=** 1.4 | 6.1 |
| Shell Core Machine #7: | P (ton/hr) = | 0.3 | **E** (lb/hr) **=** 1.8 | 8.0 |
| Shell Core Machine #8: | P (ton/hr) = | 0.3 | **E** (lb/hr) **=** 1.8 | 8.0 |

**Calculation Methodology**

Uncontrolled PTE (ton/yr) = Max Capacity (ton sand/yr) x Emission Factor (lb/ton sand) * 8760 / 2000
Limited PTE (ton/yr) = Limited Capacity (ton sand/yr) x Emission Factor (lb/ton sand) x 1 ton/2000 lb
Particulate emissions from the shell core making process are uncontrolled.

## Air Set Core Making Process
## Installation Date(s): Prior to 1977

| Material | Pollutant | Emission Factors (lb/ton) | Uncontrolled PTE (ton/yr) | Percent Volatile (%) | Specific Gravity | VOC Content (lb/gal) | Material Usage (gal/yr) |
|---|---|---|---|---|---|---|---|
| Maximum Capacity: | 52,560 | tons per year of | | 6.0 | tons per hour of sand | | |
| | 0 | gallons per year of core wash | | | gallons per hour of core wash | | |
| Core Wash | VOC | 0.200 | 5.26 | 1% | 1.38 | 0.12 | 91,336 |
| Core Machine Resin | VOC | 0.541 | 14.22 | 100% | 1.16 | 9.67 | 2,939 |
| Catalysts | VOC | 2.750 | 72.27 | 100% | 0.72 | 5.97 | 24,222 |
| Core Box Cleaner | VOC | 0.144 | 3.78 | 100% | 0.98 | 8.17 | 926 |
| Release Agent | VOC | 0.105 | 2.76 | 90% | 0.82 | 6.15 | 897 |
| | | **Total VOC Emissions:** | **98.29** | | | | |

**Particulate Emissions:** ($PM/PM_{10}/PM_{2.5}$)

| **Air Flowrate** (acfm) | **Grain Loading** (gr/ascf) | **PM Uncontrolled PTE** (ton/yr) | **HAP (Metals) Uncontrolled PTE** (ton/yr) |
|---|---|---|---|
| 15,000 | 0.02 | 11.26 | 11.26 |

**326 IAC 6-3-2 Particulate Emission Rate Limitation**

E = 4.10 P^0.67

| | | | | ton/yr |
|---|---|---|---|---|
| Sand Handling: | P (ton/hr) = | 6.0 | **E** (lb/hr) = 13.6 | 59.7 |
| Sand Mixer: | P (ton/hr) = | 6.0 | **E** (lb/hr) = 13.6 | 59.7 |
| Air Set Core Machine #2: | P (ton/hr) = | 6.0 | **E** (lb/hr) = 13.6 | 59.7 |
| | | | | 179.0 |

**Calculation Methodology**

Uncontrolled PTE (ton/yr) = Max Capacity (ton sand/yr) x Emission Factor (lb/ton sand) * 8760 / 2000

All VOC emissions are also HAP emissions of triethylamine (TEA).

Particulate emissions from the air set core making process are controlled by Baghouse U.

All PM emissions are also HAP-Metals emissions.

Baghouse U is common to Phenolic Urethane Core Sand Hoppers #3 and #4, Phenolic Urethane electric Sand Heaters #3 and #4, and Air Set Core Sand Hopper #3.

## Large Core Production Cell

Maximum Capacity:

| | | | |
|---|---|---|---|
| 30 | tons per hour of sand | 262,800 | tons per year of sand |
| 68.52 | pounds per hour of resin | 300 | tons per year of resin |
| 2.75 | pound of catalyst per ton of core sand | 361 | tons per year of catalyst |
| 20.408 | pound of core wash per ton of core sand | 2,682 | tons per year of core wash |
| 30 | tons per hour of cores | 262,800 | tons per year of cores |

**Usage Limits:**

| | | | |
|---|---|---|---|
| 525,600,000 | pounds per year of sand | **12,005** | **tons per year of sand** |
| 600,235 | pounds per year of resin | **299,399.3** | **pounds per year of resin** |
| 722,700 | pounds per year of catalyst | **32,934.6** | **pounds per year of catalyst** |
| 5,363,222 | pounds per year of core wash | **245,504.7** | **pounds per year of core wash** |
| 525,600,000 | pounds per year of cores | **1,397** | **pounds per year of release agent** |
| | | **1,725** | **pounds per year of core box cleaner** |

| **Material** | **Pollutant** | **Uncontrolled Emission Factors (lb/ton)** | **Controlled Emission Factors** PM=lb/ton sand, VOC=lb/lb material | **Uncontrolled PTE** (ton/yr) | **Limited PTE** (ton/yr) |
|---|---|---|---|---|---|
| Mixers | PM | 3.6 | 0.33 | 473.04 | **1.98** |
| Mixers | $PM_{10}$ | 0.54 | 0.065 | 70.96 | **0.39** |
| Resin | VOC | | 0.02904 | 8.72 | 4.35 |
| Catalyst | VOC | | 1.0 | 361.35 | 16.47 |
| Core Wash | VOC | | 0.02 | 53.63 | 2.46 |
| Release Agent | VOC | | 0.9 | 3.25 | 0.63 |
| Core Box Cleaner | VOC | | 1.0 | 0.86 | 0.86 |
| Mixers | HAP: Metals | | 0.33 | 43.36 | **1.98** |
| | | | **Total VOC Emissions:** | **427.81** | **24.76** |

**326 IAC 6-3-2 Particulate Emission Rate Limitation** E = 55 P^0.11 - 40

Sand Handling: P (ton/hr) = 30 **E** (lb/hr) **= 40.0** 175.0

**Calculation Methodology**

The annual limits and emission factors for the Large Core Production Cell were derived from SSM 085-21851-00003, issued on October 6, 2006.

Uncontrolled PTE (ton/yr) = Max Capacity (ton sand/yr) x Emission Factor (lb/ton sand) * 8760 / 2000

PM Limited PTE (ton/yr) = Limited Capacity (ton sand/yr) x Emission Factor (lb/ton sand) x 1 ton/2000 lb

All PM emissions are also HAP-Metals emissions.

Particulate emissions from the enclosed pneumatic sand transporter are controlled by Baghouse V.

The Baghouse V is common to Large Core Sand Holding Hopper, and Large Core Sand Weigh Hopper.

VOC Limited PTE (ton/yr) = Limited Capacity (lb material/yr) x Emission Factor (lb VOC/lb material) x 1 ton/2000 lb

The VOC emissions from the catalyst captured at the core box of the Phenolic Urethane Core Machines are controlled by an acid scrubber, identified as Acid Scrubber AF, exhaust to a stack, identified as Stack AF.

Particulate emissions are captured and controlled by a Cyclone prior to entering the Acid Scrubber

Acid Scrubber AF is common to: Phenolic Urethane Core Machines #1 and #2,
Phenolic Urethane Core Machines #4 and #5,
Phenolic Urethane Core Machines #7 through #19,
Phenolic Urethane Core Machines #21 and #22,
Phenolic Urethane Core Machine #25,
Phenolic Urethane Core Machines #27 and #28, and
Cold Box Phenolic Urethane Core Machines #29 and #30.

## Natural Gas Combustion

| | Heat Input Capacity (MMBtu/hr) | Potential Throughput (MMCF/yr) |
|---|---|---|
| **Phenolic Urethane Core Making Line #9** | | |
| Core Oven #10 | 6.0 | 52.6 |
| Core Oven #11 | 3.0 | 26.3 |
| **Phenolic Urethane Core Making Lines** | | |
| Core Oven #1 | 2.0 | |
| Core Oven #2 | 2.0 | |
| Core Oven #3 | 2.0 | |
| Core Oven #4 | 2.0 | |
| Core Oven #8 | 2.4 | |
| Core Oven #9 | 2.4 | |
| Core Oven #17 | 2.0 | |
| Core Oven #21 | 2.4 | |
| Core Oven #25 | 0.8 | |
| Core Oven #27 | 1.6 | |
| Core Oven #28 | 1.6 | |
| Phenolic Urethane Sand Heater #5 | 0.192 | |
| Phenolic Urethane Sand Heater #8 | 0.192 | |
| | 21.4 | 187.4 |
| **Large Core Production Cell** | | |
| natural gas-fired Core Oven #29 | 6.0 | 52.6 |
| **Hot Blast Preheater** | 22.0 | 192.7 |
| cupola | | |

511.5

**Hot Blast Preheater**
**Particulate Matter (PM) Emission Rate**
Pt = 1.09 / Q^0.26
Q = 22.0 Pt = 0.49

| | Pollutant | | | | | | |
|---|---|---|---|---|---|---|---|
| | **PM** | **$PM_{10}$** | **$PM_{2.5}$** | **$SO_2$** | **$NO_X$** | **VOC** | **CO** |
| *Emission Factor in lb/MMCF* | *1.9* | *7.6* | *7.6* | *0.6* | *100* | *5.5* | *84.0* |
| **Potential Emission in tons/yr** | | | | | | | |
| Phenolic Urethane Core Making Line #9 | 0.1 | 0.3 | 0.3 | 0.0 | 3.9 | 0.2 | 3.3 |
| Phenolic Urethane Core Making Lines | 0.2 | 0.7 | 0.7 | 0.1 | 9.4 | 0.5 | 7.9 |
| Large Core Production Cell | 0.0 | 0.2 | 0.2 | 0.0 | 2.6 | 0.1 | 2.2 |
| Hot Blast Preheater | 0.2 | 0.7 | 0.7 | 0.1 | 9.6 | 0.5 | 8.1 |
| | **0.5** | **1.9** | **1.9** | **0.2** | **25.6** | **1.4** | **21.5** |

**Calculation Methodology**

All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
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 (SUPPLEMENT D 3/98)
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF) / 2,000 lb/ton

## Natural Gas Combustion

| | HAPs - Organics | | | | |
|---|---|---|---|---|---|
| | Benzene | Dichloro-benzene | Formalde-hyde | Hexane | Toluene |
| *Emission Factor in lb/MMCF* | *2.1E-03* | *1.2E-03* | *7.5E-02* | *1.8E+00* | *3.4E-03* |
| **Potential Emission in tons/yr** | | | | | |
| Phenolic Urethane Core Making Line #9 | 2.8E-05 | 1.6E-05 | 9.9E-04 | 2.4E-02 | 4.5E-05 |
| Phenolic Urethane Core Making Lines | 2.0E-04 | 1.1E-04 | 7.0E-03 | 1.7E-01 | 3.2E-04 |
| Large Core Production Cell | 5.5E-05 | 3.2E-05 | 2.0E-03 | 4.7E-02 | 8.9E-05 |
| Hot Blast Preheater | 2.0E-04 | 1.2E-04 | 7.2E-03 | 1.7E-01 | 3.3E-04 |
| | **0.0** | **0.0** | **0.0** | **0.4** | **0.0** |

| | HAPs - Metals | | | | |
|---|---|---|---|---|---|
| | Lead (Pb) | Cadmium | Chromium | Manganese | Nickel |
| *Emission Factor in lb/MMCF* | *5.0E-04* | *1.1E-03* | *1.4E-03* | *3.8E-04* | *2.1E-03* |
| **Potential Emission in tons/yr** | | | | | |
| Phenolic Urethane Core Making Line #9 | 6.6E-06 | 1.4E-05 | 1.8E-05 | 5.0E-06 | 2.8E-05 |
| Phenolic Urethane Core Making Lines | 4.7E-05 | 1.0E-04 | 1.3E-04 | 3.6E-05 | 2.0E-04 |
| Large Core Production Cell | 1.3E-05 | 2.9E-05 | 3.7E-05 | 1.0E-05 | 5.5E-05 |
| Hot Blast Preheater | 4.8E-05 | 1.1E-04 | 1.3E-04 | 3.7E-05 | 2.0E-04 |
| | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

0.43

**Calculation Methodology**

Methodology is the same as the previous page.
The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Core Oven #1 is common to Phenolic Urethane Core Machines #1, #2, #15, & #18.
Core Oven #2 is common to Phenolic Urethane Core Machines #16 & #19
Core Oven #4 is common to Phenolic Urethane Core Machines #4 and #5.
Core Oven #21 is common to Phenolic Urethane Core Machines #21, #22, & #27.
Core Oven #29 is common to Large Core Production Cell Lines #10 and #11.

**Greenhouse Gas Emissions**

| | Greenhouse Gas | | |
|---|---|---|---|
| | CO2 | CH4 | N2O |
| Emission Factor in lb/MMcf | 120,000 | 2.3 | 2.2 |
| Potential Emission in tons/yr | 30,691 | 1 | 1 |
| Summed Potential Emissions in tons/yr | 30,692 | | |
| CO2e Total in tons/yr | 30,878 | | |

**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.
Greenhouse 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 (21) + N2O Potential Emission ton/yr x N2O GWP (310).

| Section* | Emission Unit / Process | Installation Date(s): | Included Emission Units | Controls |
|---|---|---|---|---|
| D.1 | Cupola Charge Handling | Prior to 1977 | | NONE |
| D.2 | Cupola Melt Furnace | Prior to 1977 | furnace & charge door | Wet Scrubber A; Baghouse #14 |
| D.3 | Herman 2 Mold Line | Prior to 1977 | Pouring, casting/cooling, shakeout & sand handling | Wet Collectors #3 (so) |
| D.3 | Herman 2 Sand Handling - Klein Transports | 2009 | | Baghouse #13, Wet Collector #3 |
| D.4 | Herman 3 Mold Line | 1991 | Pouring, casting/cooling, shakeout & sand handling | Sonoperoxone® system, Wet Collector #4 (so), Wet Collector #1 (sh), Baghouse #11 (so & sh) |
| D.5 | Inclined Shakeout and Sort System | Prior to 1977 | | Baghouse #2 |
| D.5 | Waste Sand Handling, Screening and Transport System | Prior to 1977 | | Baghouse #9 |
| D.5 | Vibratory Shaker | 2011 | | Baghouse #2 |
| D.6 | Shot Blast Machines | pre 1977 - 2006 | SB-1 through SB-11 | Baghouses #3, #6, #12, & #16 |
| D.6 | Grinders | Prior to 1977 | GR-1 through GR-38 | Baghouses #6, #12, #15, & #16 |
| D.6 | Hose Blast System for Shot Blast Machine SB-8 | 2011 | | Baghouse #16 |
| D.6 | Robotic Grinders ABB and FANUC | 2009 | | Baghouse #15 |
| D.6 | SB10 Blow-off Chamber | TBD | | Fabric Filter Control Device exhausted within building |
| D.7 | Paint Dip Tank | Prior to 1977 | | |
| D.8 | Hot Box Core Making Line #6 (aka "Mercury Marine") | 1991 | SH#6, NGH#6, SM#6, CM#1 | Baghouse Z |
| D.8 | Hot Box Core Making Line #7 | 1996 | SH#7, NGH#7, SM#79, CM#26 | Baghouse Z |
| D.8 | Phenolic Urethane Core Making Line #9 | 2002 | Mixer #9 (2002), SH#9, SM#9, CM#s8-10, CWDT#s8-10, CO#s8-10, ECO#5 | Acid Scrubber AF, Baghouse Z |
| | Hot Box Sand Mixer #9<br>Core Wash Dip Tank #8<br>Core Wash Dip Tank #9<br>Core Wash Dip Tank #10 | | | |
| D.9 | Phenolic Urethane Core Making Lines | pre 1977 - 1998 | | |
| | Phenolic Urethane Core Making Line #1 | 1986 - 1989 | Mixer #1 & CM #s 18&19 (1989), CM #17 (1988), CM #s 15&16 (1986) | Acid Scrubber AF, Baghouse Q |
| | Phenolic Urethane Core Making Line #2 | pre 1977 - 1992 | Mixer #2 (1987), CM #s 10&11 (pre 1977), CM #s 12&13 (1978), CM #14 (1992) | Acid Scrubber AF |
| | Phenolic Urethane Core Making Line #3 | pre 1977 - 1982 | Mixer #3 (1980), CM #s 1&2 (1982), CM #4 (1981), CM #5 (pre 1977) | Acid Scrubber AF, Baghouse U, Baghouse Z |
| | Phenolic Urethane Core Making Line #4 | pre 1977 - 1993 | Mixer #4 & CM #7 (1986), CM #s 8&9 (pre 1977), CM #s 25&26 (1993) | Acid Scrubber AF, Baghouse U |
| | Phenolic Urethane Core Making Line #5 | 1992 - 1996 | Mixer #5 & CM #s 21&22 (1992), CM #17 (1996) | Acid Scrubber AF, Baghouse Z |
| | Phenolic Urethane Core Making Line #8 | 1997 - 1998 | Mixer #8 (1997), CM #28 (1998) | Acid Scrubber AF, Baghouse Z |
| D.10 | Shell Core Making Process | Prior to 1977 | SCM#s6-8, SCWDT#s6-8 | NONE |
| D.11 | Air Set Core Making Process | Prior to 1977 | SH#3, ASCM#2 | Baghouse U |
| D.12 | Large Core Production Cell | 2007 (to be installed) | Mixer #s10-11, CM#s29-30, CWDT#s29-30, CO#29 | Acid Scrubber AF, Baghouse V |
| D.13 | Hot Blast Preheater | 1981 | | |

**Notes:**
* Section corresponds to the Section Ds of the Part 70 Permit.

so = shakeout
sh = sand handling
SH = sand hopper
SM = sand mixer

CO = core oven
ECO = electric core oven
NGH = natural gas heater
CWDT = core wash dip tank

ASCM = air set core machine
SCWDT = shell core wash dip tank
SCM = shell core machine
CM = core machine

## Annual Enforceable Limits

| Emission Unit / Process | Annual Limitation | |
|---|---|---|
| Cupola Charge Handling | 199,194 | tons per year of metal charged |
| Cupola Melt Furnace | 187,919 | tons per year of melted metal |
| Herman 2 and Herman 3 Sand Handling | 1,127,516 | tons per year of core and mold sand handled |
| Herman 2 Sand Handling - Klein Transports | 106,000 | tons per year of core and mold sand handled |
| Herman 3 Mold Line | 90,578 | tons per year of metal throughput |
| | 543,470 | tons per year of sand throughput |
| Waste Sand Handling, Screening and Transport System | 112,752 | tons per year of waste sand throughput |
| Shot Blast Machines | 112,752 | tons per year of finished metal (total for SB-1 through SB-9) |
| Hose Blast System for Shot Blast Machine SB-8 | 16,500 | tons per year of finished castings |
| Robotic Grinders ABB and FANUC | 15,500 | tons per year of finished castings |
| SB10 Blow-off Chamber | 20,000 | tons per year of finished castings |
| Vibratory Shaker | 142,000 | tons per year of metal throughput |
| Phenolic Urethane Core Making Line #9 | 295,000 | pounds per year of resin usage |
| | 32,935 | gallons per year of catalyst usage |
| | 12,000 | tons per year of sand |
| Phenolic Urethane Core Making Line #1 | 17,922 | tons per year of sand |
| Phenolic Urethane Core Making Line #2 | 4,656 | tons per year of sand |
| Phenolic Urethane Core Making Line #3 | 23,200 | tons per year of sand |
| Phenolic Urethane Core Making Line #4 | 12,910 | tons per year of sand |
| Phenolic Urethane Core Making Line #5 | 2,383 | tons per year of sand |
| Phenolic Urethane Core Making Line #8 | 6,350 | tons per year of sand |
| Phenolic Urethane Core Making Lines | 177,260 | gallons per year of core wash |
| | 1,150 | gallons per year of release agent |
| | 1,188 | gallons per year of core box cleaner |
| Large Core Production Cell | 12,005 | tons per year of sand |
| | 299,399 | pounds per year of resin |
| | 32,935 | pounds per year of catalyst |
| | 245,505 | pounds per year of core wash |
| | 1,397 | pounds per year of release agent |
| | 1,725 | pounds per year of core box cleaner |

# Indiana Department of Environmental Management
Office of Air Quality

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

### Source Background and Description

| | |
|---|---|
| Source Name: | Dalton Corporation, Warsaw Manufacturing Facility |
| Source Location: | 1900 E. Jefferson Street, Warsaw, Indiana 46580 |
| County: | Kosciusko |
| SIC Code: | 3321 |
| Permit Renewal No.: | T085-30768-00003 |
| Permit Reviewer: | Heath Hartley |

The Office of Air Quality (OAQ) has reviewed the operating permit renewal application from Dalton Corporation, Warsaw Manufacturing Facility relating to the operation of a gray iron foundry. On August 5, 2011, Dalton Corporation, Warsaw Manufacturing Facility submitted an application to the OAQ requesting to renew its operating permit. Dalton Corporation, Warsaw Manufacturing Facility was issued a Part 70 Operating Permit T085-6708-00003 on May 9, 2007.

### Permitted Emission Units and Pollution Control Equipment

The source consists of the following permitted emission units:

**SECTION D.1**

(1) **Cupola Charge Handling**
Cupola Charge Handling operations, constructed prior to 1977, with a nominal charging capacity of 53.45 tons per hour of solid metal, coke, and limestone.

Emissions from the Cupola Charge Handling operations are uncontrolled.

**SECTION D.2**

(2) **Cupola Melt Furnace**
One (1) Cupola Melt Furnace, constructed prior to 1977, with a nominal capacity of 48.5 tons per hour of metal melted, and a maximum heat input capacity of 69.95 million British thermal units (MMBtu) per hour.

Particulate emissions are captured and controlled by Wet Scrubber A and Wet Electrostatic Precipitator WESP (for NESHAP EEEEE compliance). Carbon monoxide emissions are captured and controlled by three (3) natural gas fired afterburners, each with a maximum heat input capacity of 5.0 million British thermal units (MMBtu) per hour. Emissions exhaust through Stack A.

Fugitive particulate emissions from the Cupola Charge Door are captured and controlled by Baghouse #14, exhausting through Stack AD.

(3) **Hot Blast Preheater**
One natural gas fired Hot Blast Preheater, constructed in 1981, with a maximum heat input capacity of 22 million British thermal units (MMBtu) per hour for preheating the blast air for the Cupola Melt Furnace.

**SECTION D.3**

(4) **Herman 2 Mold Line**

(a) One (1) Herman 2 Pouring Station, constructed prior to 1977, with a nominal throughput of 37 tons of iron per hour and 166 tons of mold and core sand per hour, with emissions captured, but uncontrolled, and exhausting to the atmosphere through Vent V-19.

(b) One (1) Herman 2 Castings Cooling process, constructed prior to 1977, with a nominal throughput of 37 tons of iron per hour and 166 tons of mold and core sand per hour, with emissions captured, but uncontrolled, and exhausting to the atmosphere through Vents V-8 and V-9.

(c) One (1) Herman 2 Shakeout process, constructed prior to 1977, with a nominal throughput of 37 tons of iron per hour and 166 tons of mold and core sand per hour, with particulate emissions captured and controlled by Wet Collector #3, exhausting through Stack B.

(d) One (1) Herman 2 Sand Handling process, constructed prior to 1977 and modified in 2009, with a nominal throughput of 166 tons of mold and core sand per hour.

The Herman 2 Sand Handling process includes

(1) sand screening, sand cooling, water addition, sand mulling, and the ancillary equipment associated with each, all constructed prior to 1977, with particulate emissions captured and controlled by Baghouse #1, exhausting through Stack F, and Baghouse #13, exhausting through Stack Y.

and

(2) One (1) waste sand handling system supporting the Herman 2 Mold Line, consisting of two (2) Klein transports, constructed in 2009, identified as:

(A) PF504-5, with a total nominal capacity of 12.0 tons per hour, with particulate emissions from sending operations captured and controlled by Wet Collector #3, exhausting through Stack B; and

(B) F902-5, with a total nominal capacity of 9.0 tons per hour, with particulate emissions from sending operations captured and controlled by Baghouse #13, exhausting through Stack Y.

**SECTION D.4**

(5) **Herman 3 Mold Line**
The volatile organic compound (VOC) emissions from the Herman 3 Mold line are reduced by one (1) Sonoperoxone® system (or an equivalent advanced oxidation system), sand system optimization, use of low VOC core resin binder materials, and automatic mold vent-off gas ignition.

(a) One (1) Herman 3 Pouring Station, constructed in 1991, with a nominal throughput of 28 tons of iron per hour and 165 tons of mold and core sand per hour, with emissions captured, but uncontrolled, and exhausting to the atmosphere through Vent V-10.

(b) One (1) Herman 3 Castings Cooling process, constructed in 1991, and modified in 2004, with a nominal throughput of 28 tons of iron per hour, and 165 tons of mold and core sand per hour, with emissions captured, but uncontrolled and exhausting to the atmosphere through Vent V-12.

(c) One (1) Herman 3 Shakeout process, constructed in 1991, with a nominal throughput of 28 tons of iron per hour, and 165 tons of mold and core sand per hour, with particulate emissions captured and controlled by Wet Collector #1, exhausting to Stack D, Wet Collector #4, exhausting through Stack E, and Baghouse #11, exhausting through Stack W.

(d) One (1) Herman 3 Sand Handling process, constructed in 1991 and modified in 2009, with a nominal throughput of 165 tons of mold and core sand per hour.

The Herman 3 Sand Handling process includes:

(1) sand screening, sand cooling, water addition, sand mulling, and the ancillary equipment associated with each, all constructed in 1991, with particulate emissions captured and controlled by Wet Collector #1, exhausting through Stack D, Wet Collector #2, exhausting through Stack C, Wet Collector #4, exhausting through Stack E, and Baghouse #11, exhausting through Stack W.

and

(2) one (1) Return Sand Conveyor, constructed in 2009, identified as RSC1, with particulate emissions captured and controlled by Wet Collector #1, exhausting through Stack D.

**SECTION D.5**

(6) **Inclined Shakeout and Sort System (servicing Herman 2 and Herman 3)**

(a) One (1) Inclined Shakeout and Sort System, constructed prior to 1977, with a nominal throughput of 48.5 tons of iron per hour, with particulate emissions captured and controlled by Baghouse #2, exhausting through Stack G.

(b) One (1) vibratory shaker, permitted in 2011, identified as VB1, with a nominal capacity of 48.5 tons per hour, with particulate emissions captured and controlled by Baghouse #2, exhausting through Stack G.

(7) **Waste Sand Handling, Screening and Transport System (servicing Herman 2 and Herman 3)**
One (1) Waste Sand Handling, Screening and Transport System, constructed prior to 1977, with a nominal throughput of 20 tons of waste sand per hour.

The Waste Sand Handling, Screening and Transport System consists of a rotary screen process, a magnetic separator, a silo, an elevated bin hopper, and a transport (Dependable) system.

Particulate emissions from the Waste Sand Handling, Screening and Transport system are captured and controlled by Baghouse #9, exhausting through Stack R.

**SECTION D.6**

(8) **Shot Blast Machines**

(a) Five (5) Shot Blast Machines:

(1) Three (3) Shot Blast Machines, identified as SB-1, SB-2, and SB-4, each constructed prior to 1977, each with a nominal capacity of 5.0 tons of iron castings per hour.

(2) One (1) Shot Blast Machine, identified as SB-3, constructed in 1981, with a nominal throughput of 5.0 tons of iron castings per hour.

(3) One (1) Shot Blast Machine, permitted in 2006 and modified in 2011 to add a manual blow-off chamber, identified as SB-10, with a nominal capacity of 5 tons of iron castings per hour.

Particulate emissions from these Shot Blast Machines are captured and controlled by Baghouse #3, exhausting through Stack H.

Particulate emissions from the manual blow-off chamber for SB-10 are captured and controlled by a fabric filter control device exhausted internally.

(b) Three (3) Shot Blast Machines:

(1) One (1) Shot Blast Machine, identified as SB-5, constructed prior to 1977, with a nominal throughput of 5.0 tons of iron castings per hour.

(2) One (1) Shot Blast Machine, identified as SB-6, constructed in 1981, with a nominal throughput of 5.0 tons of iron castings per hour.

(3) One (1) Shot Blast Machine, identified as SB-8, constructed in 1988, with a nominal throughput of 8.0 tons of iron castings per hour.

(4) One (1) hose blast operation for Shot Blast #8, permitted in 2011, identified as HB1, with a nominal capacity of 8.0 tons of iron castings per hour.

Particulate emissions from these Shot Blast Machines and the hose blast operation are captured and controlled by Baghouse #16, exhausting through Stack AG.

(c) One (1) Shot Blast Machine, identified as SB-7, constructed in 1978 with a nominal throughput of 6.0 tons of iron castings per hour.

Particulate emissions from this Shot Blast Machine are captured and controlled by Baghouse #6, exhausting through Stack K.

(d) One (1) Shot Blast Machine, identified as SB-9, constructed in 1995 with a nominal throughput of 12.5 tons of iron castings per hour.

Particulate emissions from this Shot Blast Machine are captured and controlled by Baghouse #12, exhausting through Stack X.

(9) **Grinders**

(a) Fourteen (14) Grinders:

(1) Twelve (12) Grinders, identified as GR-1 through GR-4, GR-9, GR-10, GR-29, and GR-30, constructed prior to 1977, each with a nominal throughput of 4.0 tons of iron castings per hour.

(2) Two (2) robotic grinders, constructed in 2009, identified as:

(A) ABB, with a total nominal capacity of 1.0 tons of iron castings per hour, and
(B) FANUC, with a total nominal capacity of 1.5 tons of iron castings per hour.

Particulate emissions from these Grinders are captured and controlled by Baghouse #15, exhausting through Stack AE.

(b) Six (6) Grinders, identified as GR-11 through GR-14, GR-16, and GR-17, constructed prior to 1977, each with a nominal throughput of 4.0 tons of iron castings per hour, with particulate emissions from these Grinders are captured and controlled by Baghouse #16, exhausting through Stack AG.

(c) Eight (8) Grinders, identified as GR-19, GR-20, GR-23, GR-25, GR-26, and GR-34 through GR-36, constructed prior to 1977, each with a nominal throughput of 4.0 tons of iron castings per hour.

Particulate emissions from these Grinders are captured and controlled by Baghouse #6, exhausting through Stack K.

(d) Four (4) Grinders, identified as GR-31 through GR-33; and GR-37, constructed prior to 1977, each with a nominal throughput of 4.0 tons of iron castings per hour.

Particulate emissions from these Grinders are captured and controlled by Baghouse #12, exhausting through Stack X.

**SECTION D.7**

(11) **Phenolic Urethane Core Making Line #9 (also referred to as Core Making Line #9)**

One (1) Phenolic Urethane Core Making Line #9, constructed in 2002 as a hotbox process and modified in 2008 to be a phenolic process, with a nominal sand throughput of 18.0 tons of sand per hour. The Phenolic Urethane Core Making line #9 consists of the following emission units:

(a) One (1) Core Sand Handling Process, with a nominal sand throughput of 18.0 tons of sand per hour:

(1) One (1) Northeast (NE) Sand Silo, constructed prior to 1977, with an integral bin vent to control particulate emissions when loading.

(2) One (1) enclosed Pneumatic Sand Transporter #1, constructed in 1996, for transferring sand from the Northeast (NE) Sand Silo to the Sand Hopper #9.

(3) One (1) Sand Hopper #9, constructed in 2002, with particulate emissions captured and controlled by Baghouse Z, exhausting through Stack Z.

(4) One (1) electric Sand Heater #9, constructed in 2002, with particulate emissions captured and controlled by Baghouse Z, exhausting through Stack Z.

(b) One (1) Sand Mixer #9, constructed in 2002 and modified in 2008, with a nominal throughput of 18 tons of sand per hour.

Emissions from the Sand Mixer #9 are uncontrolled.

(c) Three (3) Core Machines, constructed in 2002 and modified in 2008, three (3) Core Wash Dip Tanks and one (1) natural gas fired Core Oven:

(1) One (1) Phenolic Urethane Core Machine #31 and its corresponding Core Wash Dip Tank #31and natural gas fired Core Oven #10, each with a nominal throughput of 4.5 tons of sand per hour.

Emissions from the Phenolic Urethane Core Machine #31 are uncontrolled. Emissions from the Core Wash Dip Tank #31 are uncontrolled.

(2) One (1) Phenolic Urethane Core Machine #32, and its corresponding Core Wash Dip Tank #32 and natural gas fired Core Oven #10, each with a nominal throughput of 4.5 tons of sand per hour.

Emissions from the Phenolic Urethane Core Machine #32 are uncontrolled. Emissions from the Core Wash Dip Tank #32 are uncontrolled.

(3) One (1) Phenolic Urethane Core Machine #33, and its corresponding Core Wash Dip Tank #33 and natural gas fired Core Oven #10, each with a nominal throughput of 4.5 tons of sand per hour.

Emissions from the Phenolic Urethane Core Machine #33 are uncontrolled. Emissions from the Core Wash Dip Tank #33 are uncontrolled.

The one (1) natural gas fired Core Oven #10 has a maximum heat input capacity of 6.0 million British thermal units (MMBtu) per hour.

(d) One (1) electric Phenolic Urethane Core Oven #5.

Emissions from the Phenolic Urethane Core Oven #5 are uncontrolled.

(e) One (1) natural gas fired Core Oven #11, constructed in 2011, has a maximum heat input capacity of 3.0 million British thermal units (MMBtu) per hour.

Emissions from the Phenolic Urethane Core Oven #11 are uncontrolled.

**SECTION D.8**

(12) **Phenolic Urethane Core Making Line #1**
One (1) Phenolic Urethane Core Making Line #1, with a nominal sand throughput of 7.0 tons of sand per hour. The Phenolic Urethane Core Making Line #1 consists of the following emission units:

(a) One (1) Core Sand Handling Process, with a nominal sand throughput of 7.0 tons of sand per hour:

(1) One (1) South (S) Sand Silo, constructed prior to 1977, with an integral bin vent to control particulate emissions when loading.

(2) One (1) enclosed Pneumatic Sand Transporter #2, constructed in 1996, for transferring sand from the South (S) Sand Silo to the Phenolic Urethane Core Sand Hopper #1.

(3) One (1) Phenolic Urethane Core Sand Hopper #1, constructed in 1989, with particulate emissions controlled by Baghouse Q, exhausting through Stack Q.

(4) One (1) electric Phenolic Urethane Sand Heater #1, constructed in 1989, for heating sand, with particulate emissions controlled by Baghouse Q, exhausting through Stack Q.

(b) One (1) Phenolic Urethane Core Sand Mixer #1, constructed in 1989, with a nominal throughput of 7.0 tons of sand per hour and 0.185 pounds of VOC (from resin) per ton of sand.

Emissions from the Phenolic Urethane Core Sand Mixer #1 are uncontrolled.

(c) Five (5) Core Machines, five (5) Core Wash Dip Tanks, and three (3) natural gas fired Core Ovens

(1) One (1) Phenolic Urethane Core Machine #15, constructed in 1986 and modified to incorporate a larger blow plate in 2011, and its corresponding Core Wash Dip Tank #15 and natural gas fired Core Oven #1, constructed in 1986, each with a nominal throughput of 7.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #15 are uncontrolled.

(2) One (1) Phenolic Urethane Core Machine #16, constructed in 1986 and modified to incorporate a larger blow plate in 2011, and its corresponding Core Wash Dip Tank #16 and natural gas fired Core Oven #1, each with a nominal throughput of 7.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #16 are uncontrolled.

(3) One (1) Phenolic Urethane Core Machine #17, constructed in 1988, and its corresponding Core Wash Dip Tank #17 and natural gas fired Core Oven #17, each with a nominal throughput of 7.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #17 are uncontrolled.

(4) One (1) Phenolic Urethane Core Machine #18, constructed in 1989, and its corresponding Core Wash Dip Tank #18 and natural gas fired Core Oven #2, each with a nominal throughput of 7.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #18 are uncontrolled.

(5) One (1) Phenolic Urethane Core Machine #19, constructed in 1989, and its corresponding Core Wash Dip Tank #19 and natural gas fired Core Oven #2, each with a nominal throughput of 7.0 tons sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #19 are uncontrolled.

Each natural gas fired Core Oven on Phenolic Urethane Core Making Line #1 has a maximum heat input capacity of 2.0 million British thermal units (Btu) per hour.

The catalyst used is Dimethylisopropylamine (DMIPA) or an equivalent, non-HAP containing catalyst.

The VOC emissions from the catalyst captured at the core box of the Phenolic Urethane Core Machine #15, Phenolic Urethane Core Machine #16, Phenolic Urethane Core Machine #17, Phenolic Urethane Core Machine #18, and

Phenolic Urethane Core Machine #19 are controlled by Acid Scrubber AF, exhausting through Stack AF.

(13) **Phenolic Urethane Core Making Line #2**
One (1) Phenolic Urethane Core Making Line #2, with a nominal sand throughput of 3.0 tons of sand per hour. The Phenolic Urethane Core Making Line #2 consists of the following emission units:

(a) One (1) Core Sand Handling Process, with a nominal sand throughput of 3.0 tons of sand per hour:

(1) One (1) South (S) Sand Silo, constructed prior to 1977, with an integral bin vent to control particulate emissions when loading.

(2) One (1) enclosed Pneumatic Sand Transporter #2, constructed in 1996, for transferring sand from the South (S) Sand Silo to the Phenolic Urethane Core Sand Hopper #1.

(3) One (1) Phenolic Urethane Core Sand Hopper #1, constructed in 1989, with particulate emissions controlled by Baghouse Q, exhausting through Stack Q.

(b) One (1) Phenolic Urethane Core Sand Mixer #2, constructed in 1987, with a nominal throughput of 3.0 tons of sand per hour and 0.185 pounds of VOC (from resin) per ton of sand.

Emissions from the Phenolic Urethane Core Sand Mixer #2 are uncontrolled.

(c) Five (5) Core Machines, five (5) Core Wash Dip Tanks, and one (1) portable electric Core Oven

(1) One (1) Phenolic Urethane Core Machine #8, constructed in 1968, and its corresponding Core Wash Dip Tank #8 and portable electric Core Oven #1, each with a nominal throughput of 3.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #8 are uncontrolled.

(2) One (1) Phenolic Urethane Core Machine #9, constructed in 1968, and its corresponding Core Wash Dip Tank #9 and portable electric Core Oven #1, each with a nominal throughput of 3.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #9 are uncontrolled.

(3) One (1) Phenolic Urethane Core Machine #12, constructed in 1978, and its corresponding Core Wash Dip Tank #12 and portable electric Core Oven #1, each with a nominal throughput of 3.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #12 are uncontrolled.

(4) One (1) Phenolic Urethane Core Machine #13, constructed in 1979, and its corresponding Core Wash Dip Tank #13 and portable electric Core Oven #1, each with a nominal throughput of 3.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #13 are uncontrolled.

(5) One (1) Phenolic Urethane Core Machine #14, constructed in 1992, and its corresponding Core Wash Dip Tank #14 and portable electric Core Oven #1, each with a nominal throughput of 3.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #14 are uncontrolled.

The catalyst used is Dimethylisopropylamine (DMIPA) or an equivalent, non-HAP containing catalyst.

The VOC emissions from the catalyst captured at the core box of the Phenolic Urethane Core Machine #8, Phenolic Urethane Core Machine #9, Phenolic Urethane Core Machine #12, Phenolic Urethane Core Machine #13, and Phenolic Urethane Core Machine #14 are controlled by Acid Scrubber AF, exhausting through Stack AF.

(14) **Phenolic Urethane Core Making Line #3**
One (1) Phenolic Urethane Core Making Line #3, with a nominal sand throughput of 7.0 tons of sand per hour. The Phenolic Urethane Core Making Line #3 consists of the following emission units:

(a) One (1) Core Sand Handling Process, with a nominal sand throughput of 7.0 tons of sand per hour:

(1) One (1) South (S) Sand Silo, constructed prior to 1977, with an integral bin vent to control particulate emissions when loading.

(2) One (1) enclosed Pneumatic Sand Transporter #2, constructed in 1996, for transferring sand from the South (S) Sand Silo to the Phenolic Urethane Core Sand Hopper #3.

(3) One (1) Phenolic Urethane Core Sand Hopper #3, constructed in 1980:

The particulate emissions from the Phenolic Urethane Core Sand Hopper #3 are captured and controlled by Baghouse U, exhausting through Stack U.

(4) One (1) electric Phenolic Urethane Sand Heater #3, constructed in 1980.

The particulate emissions from the Phenolic Urethane Sand Heater #3 are captured and controlled by Baghouse U, exhausting through Stack U.

(b) One (1) Phenolic Urethane Core Sand Mixer #3, constructed in 1980, with a nominal throughput of 7.0 tons of sand per hour and 0.185 pounds of VOC (from resin) per ton of sand.

Emissions from the Phenolic Urethane Core Sand Mixer #3 are uncontrolled.

(c) Three (3) Core Machines, three (3) Core Wash Dip Tanks, and two (2) natural gas fired Core Ovens

(1) One (1) Phenolic Urethane Core Machine #2, constructed in 1982, and its corresponding Core Wash Dip Tank #2 and natural gas fired Core Oven #3, each with a nominal throughput of 7.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #2 are uncontrolled.

(2) One (1) Phenolic Urethane Core Machine #4, constructed in 1981, and its corresponding Core Wash Dip Tank #4 and natural gas fired Core Oven #4, each with a nominal throughput of 7.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #4 are uncontrolled.

(3) One (1) Phenolic Urethane Core Machine #5, constructed in 1968, and its corresponding Core Wash Dip Tank #5 and natural gas fired Core Oven #4, each with a nominal throughput of 7.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #5 are uncontrolled.

Each natural gas fired Core Oven on Phenolic Urethane Core Making Line #3 has a maximum heat input capacity of 2.0 million British thermal units (Btu) per hour.

The catalyst used is Dimethylisopropylamine (DMIPA) or an equivalent, non-HAP containing catalyst.

The VOC emissions from the catalyst captured at the core box of the Phenolic Urethane Core Machine #2, Phenolic Urethane Core Machine #4, and Phenolic Urethane Core Machine #5 are controlled by Acid Scrubber AF, exhausting through Stack AF.

(15) **Phenolic Urethane Core Making Line #4**
One (1) Phenolic Urethane Core Making Line #4, with a nominal sand throughput of 7.0 tons of sand per hour. The Phenolic Urethane Core Making Line #4 consists of the following emission units:

(a) One (1) Core Sand Handling Process, with a nominal sand throughput of 7.0 tons of sand per hour:

(1) One (1) South (S) Sand Silo, constructed prior to 1977, with an integral bin vent to control particulate emissions when loading.

(2) One (1) enclosed Pneumatic Sand Transporter #2, constructed in 1996, for transferring sand from the South (S) Sand Silo to the Phenolic Urethane Core Sand Hopper #4.

(3) One (1) Phenolic Urethane Core Sand Hopper #4, constructed in 1986.

The particulate emissions from the Phenolic Urethane Core Sand Hopper #4 are captured and controlled by Baghouse U, exhausting through Stack U.

(4) One (1) electric Phenolic Urethane Sand Heater #4, constructed in 1986:

The particulate emissions from the Phenolic Urethane Sand Heater #4 are captured and controlled by Baghouse U, exhausting through Stack U.

(b) One (1) Phenolic Urethane Core Sand Mixer #4, constructed in 1986, with a nominal throughput of 7.0 tons of sand per hour and 0.185 pounds of VOC (from resin) per ton of sand.

Emissions from the Phenolic Urethane Core Sand Mixer #4 are uncontrolled.

(c) Two (2) Core Machines, one (1) Core Wash Dip Tank, and two (2) natural gas fired Core Ovens

(1) One (1) Phenolic Urethane Core Machine #7, constructed in 1986 and modified to incorporate a larger blow plate in 2011, with a nominal throughput of 7.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

(2) One (1) Phenolic Urethane Core Machine #25, constructed in 1993, that contains two (2) core boxes that cannot be operated simultaneously due to having only one blow head for blowing sand into the box, and its corresponding Core Wash Dip Tank #25, natural gas fired Core Oven #8, and natural gas fired Core Oven #25, each with a nominal throughput of 7.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #25 are uncontrolled.

(A) The natural gas fired Core Oven #8 on Phenolic Urethane Core Making Line #5 has a maximum heat input capacity of 2.4 million British thermal units (Btu) per hour.

(B) The natural gas fired Core Oven #25 has a maximum heat input capacity of at 800,000 British thermal units (Btu) per hour.

The catalyst used is Dimethylisopropylamine (DMIPA) or an equivalent, non-HAP containing catalyst.

The VOC emissions from the catalyst captured at the core box of the Phenolic Urethane Core Machine #7 and Phenolic Urethane Core Machine #25 are controlled by Acid Scrubber AF, exhausting through Stack AF.

(16) **Phenolic Urethane Core Making Line #5**
One (1) Phenolic Urethane Core Making Line #5, with a nominal sand throughput of 5.0 tons of sand per hour. The Phenolic Urethane Core Making Line #5 consists of the following emission units:

(a) One (1) Core Sand Handling Process, with a nominal sand throughput of 5.0 tons of sand per hour:

(1) One (1) South (S) Sand Silo, constructed prior to 1977, with an integral bin vent to control particulate emissions when loading.

(2) One (1) enclosed Pneumatic Sand Transporter #2, constructed in 1996, for transferring sand from the South (S) Sand Silo to the Phenolic Urethane Core Sand Hopper #3.

(3) One (1) Phenolic Urethane Core Sand Hopper #3, constructed in 1980:

The particulate emissions from the Phenolic Urethane Core Sand Hopper #3 are captured and controlled by Baghouse U, exhausting through Stack U.

(4) One (1) natural gas fired Phenolic Urethane Sand Heater #5, constructed in 1992, with a maximum heat input capacity of 192,000 British thermal units (Btu) per hour.

The particulate emissions from the Phenolic Urethane Sand Heater #5 are captured and controlled by Baghouse Z, exhausting through Stack Z.

(b) One (1) Phenolic Urethane Core Sand Mixer #5, constructed in 1992, with a nominal throughput of 5.0 tons of core sand per hour and 0.185 pounds of VOC (from resin) per ton of sand.

Emissions from the Phenolic Urethane Core Sand Mixer #5 are uncontrolled.

(c) Three (3) Core Machines, three (3) Core Wash Dip Tanks, and one (1) natural gas fired Core Oven

(1) One (1) Phenolic Urethane Core Machine #21, constructed in 1992, and its corresponding Core Wash Dip Tank #21 and natural gas fired Core Oven #9, each with a nominal throughput of 5.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #21 are uncontrolled.

(2) One (1) Phenolic Urethane Core Machine #22, constructed in 1992, and its corresponding Core Wash Dip Tank #22 and natural gas fired Core Oven #9, each with a nominal throughput of 5.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #22 are uncontrolled.

(3) One (1) Phenolic Urethane Core Machine #28, constructed in 1998, and its corresponding Core Wash Dip Tank #28 and natural gas fired Core Oven #9, each with a nominal throughput of 5.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #28 are uncontrolled.

The natural gas fired Core Oven #9 on Phenolic Urethane Core Making Line #5 has a maximum heat input capacity of 2.4 million British thermal units (Btu) per hour.

The catalyst used is Dimethylisopropylamine (DMIPA) or an equivalent, non-HAP containing catalyst.

The VOC emissions from the catalyst captured at the core box of the Phenolic Urethane Core Machine #21, Phenolic Urethane Core Machine #22, and Phenolic Urethane Core Machine #28 are controlled by Acid Scrubber AF, exhausting through Stack AF.

(17) **Phenolic Urethane Core Making Line #8**
One (1) Phenolic Urethane Core Making Line #8, with a nominal sand throughput of 5.0 tons of sand per hour. The Phenolic Urethane Core Making Line #8 consists of the following emission units:

(a) One (1) Core Sand Handling Process, with a nominal sand throughput of 5.0 tons of sand per hour:

(1) One (1) Northeast (NE) Sand Silo, constructed prior to 1977, with an integral bin vent to control particulate emissions when loading.

(2) One (1) enclosed Pneumatic Sand Transporter #1, constructed in 1996, for transferring sand from the Northeast (NE) Sand Silo to the Phenolic Urethane Core Sand Hopper #8.

(3) One (1) Phenolic Urethane Core Sand Hopper #8, constructed in 1997:

The particulate emissions from the Phenolic Urethane Core Sand Hopper #8 are captured and controlled by Baghouse Z, exhausting through Stack Z.

(4) One (1) natural gas fired Phenolic Urethane Sand Heater #8, constructed in 1997, with a maximum heat input capacity of 192,000 British thermal units (Btu) per hour.

The particulate emissions from the Phenolic Urethane Sand Heater #8 are captured and controlled by Baghouse Z, exhausts through Stack Z.

(b) One (1) Phenolic Urethane Core Sand Mixer #8, constructed in 1997, with a nominal throughput of 5.0 tons of core sand per hour and 0.185 pounds of VOC (from resin) per ton of sand.

Emissions from the Phenolic Urethane Core Sand Mixer #8 are uncontrolled.

(c) Two (2) Core Machines, two (2) Core Wash Dip Tank, and one (1) natural gas fired Core Oven

(1) One (1) Phenolic Urethane Core Machine #1, constructed in 1982, and its corresponding Core Wash Dip Tank #1 and natural gas fired Core Oven #27, each with a nominal throughput of 7.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #1 are uncontrolled.

(2) One (1) Phenolic Urethane Core Machine #27, constructed in 1996, and its corresponding Core Wash Dip Tank #27 and natural gas fired Core Oven #27, each with a nominal throughput of 5.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #27 are uncontrolled.

The natural gas fired Core Oven #27 on Phenolic Urethane Core Making Line #8 has a maximum heat input capacity of 1.6 million British thermal units (Btu) per hour.

The catalyst used is Dimethylisopropylamine (DMIPA) or an equivalent, non-HAP containing catalyst.

The VOC emissions from the catalyst captured at the core box of Phenolic Urethane Core Machine #1 and Phenolic Urethane Core Machine #27 are controlled by Acid Scrubber AF, exhausting through Stack AF.

**SECTION D.9**

(18) **Shell Core Making Process**
One (1) Shell Core Sand Making Process, with a nominal sand throughput of 0.8 tons of sand per hour. The Shell Core Sand Making Process consists of the following emission units:

(a) One (1) Shell Core Sand Handling Process, with a nominal sand throughput of 0.8 tons of sand per hour:

(1) North (N) Shell Sand Silo and South (S) Shell Sand Silo, each constructed prior to 1977, with a capacity to provide coated sand to the two (2) Shell Core Sand Hoppers.

Emissions from the North (N) Shell Sand Silo and South (S) Shell Sand Silo are uncontrolled.

(2) Two (2) Shell Core Sand Hoppers, identified as Shell Core Sand Hopper #1 and Shell Core Sand Hopper #2, constructed prior to 1977, with a capacity to provide shell core sand to all Shell Core Machines.

Emissions from the Shell Core Sand Hoppers are uncontrolled.

(b) Three (3) Core Machines, and Three (3) Core Wash Dip Tanks

(1) One (1) Shell Core Machine #6, constructed prior to 1977, and its corresponding Shell Core Wash Dip Tank #6, with a nominal throughput of 0.2 tons of sand per hour.

Emissions from the Shell Core Machine #6 are uncontrolled.
Emissions from the Shell Core Wash Dip Tank #6 are uncontrolled.

(2) One (1) Shell Core Machine #7, constructed prior to 1977, and its corresponding Shell Core Wash Dip Tank #7, with a nominal throughput of 0.3 tons of sand per hour.

Emissions from the Shell Core Machine #7 are uncontrolled.
Emissions from the Shell Core Wash Dip Tank #7 are uncontrolled.

(3) One (1) Shell Core Machine #8, constructed prior to 1977, and its corresponding Shell Core Wash Dip Tank #8, with a nominal throughput of 0.3 tons of sand per hour.

Emissions from the Shell Core Machine #8 are uncontrolled.
Emissions from the Shell Core Wash Dip Tank #8 are uncontrolled.

**SECTION D.10**

(19) **Air Set Core Making Process**
One (1) Air Set Core Making Process, with a nominal sand throughput of 6.0 tons of sand per hour. The Air Set Core Making Process consists of the following emission units:

(a) One (1) Air Set Core Sand Handling Process, with a nominal sand throughput of 6.0 tons of sand per hour:

(1) One (1) South (S) Sand Silo, constructed prior to 1977, with an integral bin vent to control particulate emissions when loading.

(2) One (1) enclosed Pneumatic Sand Transporter #2, constructed in 1996, for transferring sand from the South (S) Sand Silo to the Air Set Core Sand Hopper #3.

(3) One (1) Phenolic Urethane Core Sand Hopper #3, constructed in 1980:

The particulate emissions from the Phenolic Urethane Core Sand Hopper #3 are captured and controlled by Baghouse U, exhausting through Stack U.

(b) One (1) Air Set Core Sand Mixer #2, constructed prior to 1977, with a nominal throughput of 6.0 tons of sand per hour.

Emissions from the Air Set Core Sand Mixer #2 are uncontrolled.

(c) One (1) Air Set Core Machine #2, constructed prior to 1977, with a nominal throughput of 6.0 tons of sand per hour.

Emissions from the Air Set Core Machine #2 are uncontrolled.

**SECTION D.11**

(20) **Large Core Production Cell**
One (1) Large Core Production Cell (ID LCC), permitted in 2006, which will initially be utilized as a phenolic urethane cold box core making operation. The Large Core Production Cell consists of the following emission units:

(a) One (1) Northeast (NE) Sand Silo, constructed prior to 1977, with an integral bin vent to control particulate emissions when loading.

(b) One (1) enclosed Pneumatic Sand Transporter #1, constructed in 1996, for transferring sand from the Northeast (NE) Sand Silo to the Phenolic Urethane Core Sand Hopper #8.

(c) One (1) Large Core Sand Weigh Hopper, permitted to be constructed in 2006, with a nominal throughput capacity of 15 tons of sand per hour.

The particulate emissions from the Large Core Sand Weigh Hopper are captured and controlled by Baghouse Q, exhausting through Stack Q.

(d) Large Core Production Cell Line #10, constructed in 2006, consisting of the following emission units:

(1) One (1) Sand / Resin Mixer #10, with a nominal throughput capacity of 15 tons of sand per hour and 34.18 pounds of resin per hour

Emissions from the Sand / Resin Mixer #10 are uncontrolled.

(2) One (1) Large Core Sand Holding Hopper #10, with a nominal sand throughput of 15 tons of sand per hour.

The particulate emissions from the Large Core Sand Holding Hopper #10 are captured and controlled by Baghouse Q, exhausting through Stack Q.

(3) One (1) electric Large Core Sand Heater #10, with a nominal sand throughput of 15 tons of sand per hour.

The particulate emissions from the Large Core Sand Heater #10 are captured and controlled by Baghouse Q, exhausting through Stack Q.

(4) One (1) Cold Box Phenolic Urethane Core Machine #29, with a nominal throughput capacity of 7 tons of cores per hour, using a nominal of 2.75 pounds of catalyst per ton of core sand;

(A) Operating Scenario #1
The current operating scenario, Operating Scenario #1, will use Resin #1 and Catalyst #1. Resin #1 is a phenolic urethane resin. Catalyst #1 is Dimethylisopropylamine (DMIPA) or an equivalent, non-HAP containing catalyst.

The VOC emissions from the Cold Box Phenolic Urethane Core Machine #29, when using Resin #1 and Catalyst #1, are captured at the core box and controlled by Acid Scrubber AF, exhausting through Stack AF.

(B) Operating Scenario #2
Operating Scenario #2 will use Resin #2 and Catalyst #2. This system will be tested within 180 days of commencing operations using this resin/catalyst system.

(C) Operating Scenario #3
Operating Scenario #3 will use Resin #3 and Catalyst #3. This system will be tested within 180 days of commencing operations using this resin/catalyst system.

(5) One (1) Core Wash Dip Tank #29, with a nominal capacity of 15 tons of cores per hour and 20.408 pounds of core wash per ton of core sand.

Emissions from the Core Wash Dip Tank #29 are uncontrolled.

(e) One (1) natural gas fired Core Oven #29, with a maximum heat input capacity of 6.0 million British thermal units (MMBtu) per hour.

Emissions from the natural gas fired Core Oven #29 are captured, but uncontrolled, and exhaust to Stack V-45.

**SUMMARY OF COMMON CONTROL**

Wet Scrubber A
– Cupola Melt Furnace

Wet ESP
– Cupola Melt Furnace

Wet Collector #1 (Stack D) is common to:
– Herman 3 Sand Handling,
– Herman 3 Shakeout, and
– Herman 3 Return Sand Conveyor.

Wet Collector #2 (Stack C) is common to:
– Herman 3 Sand Handling,

Wet Collector #3 (Stack B) is common to:
– Herman 2 Shakeout, and
– Klein Transport PF504-5.

Wet Collector #4 (Stack E) is common to:
– Herman 3 Shakeout, and
– Herman 3 Sand Handling.

The Sonoperoxone® system is common to:
– Herman 3 Pouring Station,
– Herman 3 Castings Cooling,
– Herman 3 Shakeout, and
– Herman 3 Sand Handling.

Baghouse #1 (Stack F)
– Herman 2 Sand Handling

Baghouse #2 (Stack G) is common to:
– Inclined Shakeout and Sort System, and
– Vibratory Shaker.

Baghouse #3 (Stack H) is common to:
– Shot Blast Machines SB-1 through SB-4, and
– Shot Blast Machine SB-10.

Baghouse #6 (Stack K) is common to:
– Shot Blast Machine SB-7,
– Grinders GR-19 and GR-20,
– Grinder GR-23,
– Grinders GR-25 and GR-26, and
– Grinders GR-34 through GR-36.

Baghouse #9 (Stack R) is common to:
– Waste Sand Handling, Screening and Transport System

Baghouse #11 (Stack W) is common to:
– Herman 3 Shakeout, and
– Herman 3 Sand Handling.

The Baghouse #12 (Stack X) is common to:
– Shot Blast Machine SB-9,
– Grinders GR-31 through GR-33, and
– Grinder GR-37.

Baghouse #13 (Stack Y) is common to:
– Herman 2 Sand Handling, and
– Klein Transport F902-5.

Baghouse #14 (Stack AD)
– Cupola Charge Door

The Baghouse #15 (Stack AE) is common to:
– Grinders GR-1 through GR-4,
– Grinders GR-9 and GR-10,
– Grinders GR-29 and GR-30, and
– Grinders ABB and FANUC.

Baghouse #16 (Stack AG) is common to:
– Shot Blast Machines SB-5 and SB-6,
– Shot Blast Machine SB-8,
– Hose Blast System for SB-8,
– Grinders GR-11 through GR-14, and
– Grinders GR-16 and GR-17.

Baghouse Q (Stack Q) is common to:
– Phenolic Urethane Core Sand Hopper #1,
– Phenolic Urethane Sand Heater #1,
– Large Core Sand Weigh Hopper,
– Large Core Sand Holding Hopper #10, and
– Large Core Sand Heater #10.

Baghouse U (Stack U) is common to:
– Phenolic Urethane Core Sand Hoppers #3 and #4,
– Phenolic Urethane Sand Heaters #3 and #4, and
– Air Set Core Sand Hopper #3.

Baghouse Z (Stack Z) is common to:
– Sand Hopper #9,
– Sand Heater #9,
– Phenolic Urethane Core Sand Hopper #8,
– Phenolic Urethane Sand Heater #5, and
– Phenolic Urethane Sand Heater #8.

Acid Scrubber AF (Stack AF) is common to:
– Phenolic Urethane Core Machines #1 and #2,
– Phenolic Urethane Core Machines #4 and #5,
– Phenolic Urethane Core Machines #7 and #8,
– Phenolic Urethane Core Machines #12 through #19,
– Phenolic Urethane Core Machines #21 and #22,
– Phenolic Urethane Core Machine #25,
– Phenolic Urethane Core Machines #27 through #29 and
– Phenolic Urethane Core Machines #31 through #33.

**SUMMARY OF COMMON EQUIPMENT**

Pneumatic Sand Transporter #1 is common to:
– Northeast (NE) Sand Silo,
– Phenolic Urethane Core Making Line #9,
– Phenolic Urethane Core Making Line #8, and
– Large Core Production Cell Line #10.

Pneumatic Sand Transporter #2 is common to:
– South (S) Sand Silo,
– Phenolic Urethane Core Making Lines #1 through #5, and
– Air Set Core Making Process.

The Northeast (NE) Sand Silo is common to:
– Pneumatic Sand Transporter #1,
– Phenolic Urethane Core Making Line #9,
– Phenolic Urethane Core Making Line #8, and
– Large Core Production Cell Line #10.

The South (S) Sand Silo is common to:
– Pneumatic Sand Transporter #2,
– Phenolic Urethane Core Making Lines #1 through #5, and
– Air Set Core Making Process.

The Phenolic Urethane Core Sand Hopper #1 is common to:
– Phenolic Urethane Core Making Lines #1 and #2.

The Phenolic Urethane Core Sand Hopper #3 is common to:
– Phenolic Urethane Core Making Lines #3 and #5, and
– Air Set Core Making Process.

The natural gas fired Core Oven #1 is common to:
– Phenolic Urethane Core Machines #15 and #16.

The natural gas fired Core Oven #2 is common to:
– Phenolic Urethane Core Machines #18 and #19.

The natural gas fired Core Oven #4 is common to:
– Phenolic Urethane Core Machines #4 and #5.

The natural gas fired Core Oven #9 is common to:
– Phenolic Urethane Core Machines #21, #22, and #28.

The natural gas fired Core Oven #27 is common to:
– Phenolic Urethane Core Machines #1 and #27.

The portable electric Core Oven #1 is common to:
– Phenolic Urethane Core Machines #8, #9, and #12 through #14.

## Insignificant Activities

The source also consists of the following insignificant activities:

(1) natural gas fired combustion sources with heat input equal to or less than ten million British thermal units (MMBtu) per hour;

(2) propane or liquefied petroleum gas, or butane-fired combustion sources with heat input equal to or less than six million (6,000,000) British thermal units (Btu) per hour;

(3) combustion source flame safety purging on startup;

(4) a gasoline fuel transfer and dispensing operation handling less than or equal to 1,300 gallons per day, such as filling of tanks, locomotives, automobiles, have a storage capacity less than or equal to 10,500 gallons;

(5) a petroleum fuel, other than gasoline, dispensing facility, having a storage tank capacity less than or equal to ten thousand five hundred (10,500) gallons, and dispensing three thousand five hundred (3,500) gallons per day or less;

(6) storage tanks with capacity less than or equal to 1,000 gallons and annual throughputs less than 12,000 gallons;

(7) activities associated with the treatment of wastewater streams with an oil and grease content less than or equal to 1% by volume;

(8) vessels storing lubricating oils, hydraulic oils, machining oils, and machining fluids;

(9) application of oils, greases, lubricants of other nonvolatile materials applied as temporary protective coating;

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

(11) cleaners and solvents characterized as follows:

(a) having a vapor pressure equal to or less than 2 kPa; 15 mm Hg; or 0.3 psi measured at 38 degrees C (100 $^{0}$F); or
(b) having a vapor pressure equal to or less than 0.7 kPa; 5 mm Hg; or 0.1 psi measured at 20 degrees C (68 $^{0}$F); the use of which for all cleaners and solvents combined does not exceed 145 gallons per 12 months;

(12) the following equipment related to manufacturing activities no resulting in the emission of HAPs: brazing equipment, cutting torches, soldering equipment, and welding equipment; [326 IAC 6-3-2]

(13) cutting 200,000 linear feet or less than one (1") plate or equivalent; [326 IAC 6-3-2]

(14) using 80 tons or less of welding consumables;

(15) any operation using aqueous solutions containing less than 1% by weight of VOCs, excluding HAPs;

(16) forced and induced draft cooling tower system not regulated under a NESHAP;

(17) heat exchanger cleaning and repair;

(18) replacement or repair of electrostatic precipitators, bags in baghouses and filters in other air filtration equipment;

(19) paved and unpaved roads and parking lots with public access;

(20) covered conveyors for coal or coke conveying of less than or equal to 360 tons per day;

(21) underground conveyors;

(22) purging of gas lines and vessels that is related to routing maintenance and repair of buildings, structures, or vehicles at the source where air emissions from those activities would not be associated with any production process;

(23) equipment used to collect any material that might be released during a malfunction, process upset, or spill cleanup, including catch tanks, temporary liquid separators, tanks, and fluid handling equipment;

(24) blowdown for any of the following: sight glass, boiler, compressors, pumps, and cooling tower;

(25) on-site fire and emergency response training approved by the department;

(26) gasoline generators not exceeding 110 horsepower;

(27) filter or coalesce media changeout;

(28) mold release agents using low volatile products (vapor pressure less than or equal to 2 kiloPascals measured at 38 degrees C); and

(29) a laboratory as defined in 326 IAC 2-7-1(21)(D).

**Existing Approvals**

Since the issuance of the Part 70 Operating Permit T 085-6708-00003 on May 9, 2007, the source has constructed or has been operating under the following additional approvals:

(a) Significant Permit Modification No.: 085-25675-00003, Issued on May 30, 2008; and
(b) Significant Source Modification No.: 085-25816-00003, Issued on June 25, 2008; and
(c) Significant Permit Modification No.: 085-25836-00003, Issued on July 14, 2008; and
(d) Administrative Amendment No.: 085-26781-00003, Issued on August 8, 2008; and
(e) Significant Source Modification No.: 085-29402-00003, Issued on January 20, 2011;
(f) Significant Permit Modification No.: 085-29403-00003, Issued on February 8, 2011.
(g) Significant Source Modification No.: 085-30500-00003, Issued on October 4, 2011; and
(f) Significant Permit Modification No.: 085-30502-00003, Issued on October 21, 2011.

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

## Enforcement Issue

There are no enforcement actions pending.

## Emission Calculations

See Appendix A of this document for detailed emission calculations.

## County Attainment Status

The source is located in Kosciusko County.

| Pollutant | Designation |
|---|---|
| $SO_2$ | Better than national standards. |
| CO | Unclassifiable or attainment effective November 15, 1990. |
| $O_3$ | Unclassifiable or attainment effective June 15, 2004, for the 8-hour ozone standard.[1] |
| $PM_{10}$ | Unclassifiable effective November 15, 1990. |
| $NO_2$ | Cannot be classified or better than national standards. |
| Pb | Not designated. |
| [1]Unclassifiable or attainment effective October 18, 2000, for the 1-hour ozone standard which was revoked effective June 15, 2005.<br>Unclassifiable or attainment effective April 5, 2005, for PM2.5. | |

(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. Kosciusko 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) $PM_{2.5}$
Kosciusko County has been classified as attainment for $PM_{2.5}$. On May 8, 2008, U.S. EPA promulgated the requirements for Prevention of Significant Deterioration (PSD) for $PM_{2.5}$ emissions. These rules became effective on July 15, 2008. On May 4, 2011 the air pollution control board issued an emergency rule establishing the direct $PM_{2.5}$ significant level at ten (10) tons per year. This rule became effective, June 28, 2011. Therefore, direct $PM_{2.5}$ and $SO_2$

emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2. See the State Rule Applicability – Entire Source section.

(c) Other Criteria Pollutants
Kosciusko County has been classified as attainment or unclassifiable in Indiana for $SO_2$, CO, $PM_{10}$, $NO_2$, and Pb. 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 gray iron foundry, 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.

## Unrestricted Potential Emissions

This table reflects the unrestricted potential emissions of the source.

| Unrestricted Potential Emissions | |
|---|---|
| Pollutant | Tons/year |
| PM | 19,322 |
| *$PM_{10}$ | 5,445 |
| $PM_{2.5}$ | 5,501 |
| $SO_2$ | 284 |
| VOC | 3,168 |
| CO | 41,231 |
| $NO_x$ | 56 |
| GHGs as $CO_2e$ | 174,108 |
| Lead | 263 |
| Total HAP | 3888 |

negl. = negligible

*Under the Part 70 Permit program (40 CFR 70), particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM10), not particulate matter (PM), is considered as a "regulated air pollutant".

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

(a) The potential to emit (as defined in 326 IAC 2-7-1(29)) of PM, $PM_{10}$, $PM_{2.5}$, $SO_2$, VOC and CO are equal to or greater than 100 tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-7 and will be issued a Part 70 Operating Permit Renewal.

(b) The potential to emit (as defined in 326 IAC 2-7-1(29)) of any single HAP is equal to or greater than ten (10) tons per year and/or the potential to emit (as defined in 326 IAC 2-7-1(29)) of a combination of HAPs is equal to or greater than twenty-five (25) tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-7.

## Part 70 Permit Conditions

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

(a) Emission limitations and standards, including those operational requirements and limitations that assure compliance with all applicable requirements at the time of issuance of Part 70 permits.

(b) Monitoring and related record keeping requirements which assume that all reasonable information is provided to evaluate continuous compliance with the applicable requirements.

## Potential to Emit After Issuance

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

| Process/ Emission Unit | **Potential To Emit of the Entire Source After Issuance of Renewal (tons/year)** | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | PM | $PM_{10}$ | $PM_{2.5}$* | $SO_2$ | $NO_x$ | VOC | CO | GHGs | Worst Single HAP | Total HAPs |
| Cupola Charge Handling | 60 | 36 | 36 | 0 | 0 | 0 | 0 | 0 | 0.2 Lead | 0.2 |
| Cupola Melt Furnace | 77 | 69 | 69 | 117 | 9 | 1 | 681 | 63,352 | 0.2 | 77 |
| Herman 2 Mold Line | 286 | 217 | 217 | 11 | 6 | 609 | 3383 | 0 | 9.2 | 267 |
| Herman 3 Mold Line | 40 | 48 | 48 | 0 | 0 | 60 | 630 | 0 | 0.6 | 29 |
| Inclined Shakeout and Sort System | 15 | 15 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Vibratory Shaker | 13 | 11 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Waste Sand Handling, Screening and Transport System | 4 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Shot Blast Machines | 65 | 65 | 0 | 0 | 0 | 0 | 0 | 0 | 2.4 | 2.4 |
| Grinders | 125 | 125 | 125 | 0 | 0 | 0 | 0 | 0 | 0.5 | 0.5 |
| Paint Dip Tank | 0 | 0 | 0 | 0 | 0 | 236 | 0 | 0 | 0 | 0 |
| Phenolic Urethane Core Making | | | | | | | | | | |
| Line # 1 | 11.3 | 11.3 | 11.3 | 0 | 0 | 35 | 0 | 0 | 0 | 11.3 |
| Line # 2 | 11.3 | 11.3 | 11.3 | 0 | 0 | 9 | 0 | 0 | 0 | 11.3 |
| Line # 3 | 11.3 | 11.3 | 11.3 | 0 | 0 | 46 | 0 | 0 | 0 | 11.3 |
| Line # 4 | 11.3 | 11.3 | 11.3 | 0 | 0 | 25 | 0 | 0 | 0 | 11.3 |

| Process/ Emission Unit | Potential To Emit of the Entire Source After Issuance of Renewal (tons/year) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | PM | $PM_{10}$ | $PM_{2.5}$* | $SO_2$ | $NO_x$ | VOC | CO | GHGs | Worst Single HAP | Total HAPs |
| Line # 5 | 11.3 | 11.3 | 11.3 | 0 | 0 | 5 | 0 | 0 | 0 | 11.3 |
| Line # 8 | 11.3 | 11.3 | 11.3 | 0 | 0 | 13 | 0 | 0 | 0 | 11.3 |
| Line # 9 | 2 | 0.4 | 0.4 | 0 | 4 | 26.7 | 3 | 0 | 0 | 2 |
| Shell Core Making Process | 11 | 11 | 11 | 0 | 0 | 13 | 0 | 0 | 0 | 11 |
| Air Set Core Making Process | 11.3 | 11.3 | 11.3 | 0 | 0 | 98 | 0 | 0 | 0 | 11 |
| Large Core Production Cell | 2 | 0.4 | 0.4 | 0 | 0 | 24.8 | 0 | 0 | 0 | 11 |
| Combustion | 0.5 | 2 | 2 | 0 | 26 | 1 | 21 | 30878 | 0 | 0.4 |
| **Total PTE of Entire Source** | **783** | **683** | **683** | **129** | **71** | **1202** | **4716** | **94,230** | **13** | **480** |
| Title V Major Source Thresholds | NA | 100 | 100 | 100 | 100 | 100 | 100 | 100,000 $CO_2e$ | 10 | 25 |
| PSD Major Source Thresholds | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100,000 $CO_2e$ | NA | NA |
| *$PM_{2.5}$ listed is direct $PM_{2.5}$. | | | | | | | | | | |

This existing stationary source is major for PSD because the emissions of at least one regulated pollutant are greater than one hundred (>100) tons per year, emissions of GHGs are equal to or greater than one hundred thousand (>100,000) tons of $CO_2$ equivalent emissions ($CO_2e$) per year, and it is in one of the twenty-eight (28) listed source categories.

**Federal Rule Applicability**

(a) Pursuant to 40 CFR 64.2, Compliance Assurance Monitoring (CAM) is applicable to each existing pollutant-specific emission unit that meets the following criteria:

(1) has a potential to emit before controls equal to or greater than the major source threshold for the pollutant involved;
(2) is subject to an emission limitation or standard for that pollutant; and
(3) uses a control device, as defined in 40 CFR 64.1, to comply with that emission limitation or standard.

The following table is used to identify the applicability of each of the criteria, under 40 CFR 64.1, to each existing emission unit and specified pollutant subject to CAM:

| Emission Unit / Pollutant | Control Device Used | Emission Limitation (Y/N) | Uncontrolled PTE (tons/year) | Controlled PTE (tons/year) | Major Source Threshold (tons/year) | CAM Applicable (Y/N) | Large Unit (Y/N) |
|---|---|---|---|---|---|---|---|
| Cupola: $PM_{10}/PM_{2.5}$ | Wet Scrubber & WESP | Y | 2634 | 69 | 100 | Y | N |
| Cupola: PM | Wet | Y | 2931 | 77 | 100 | Y | N |

| Emission Unit / Pollutant | Control Device Used | Emission Limitation (Y/N) | Uncontrolled PTE (tons/year) | Controlled PTE (tons/year) | Major Source Threshold (tons/year) | CAM Applicable (Y/N) | Large Unit (Y/N) |
|---|---|---|---|---|---|---|---|
| | Scrubber & WESP | | | | | | |
| Cupola: CO | Afterburner | Y | 30,802 | 681 | 100 | Y | Y |
| Cupola: Pb | Wet Scrubber & WESP | Y | 233 | 0.19 | 10 | Y | N |
| Herman 2 Shakeout: $PM_{10}/PM_{2.5}$ | Wet Scrubber | Y | 51 | 32 | 100 | N | N |
| Herman 2 Shakeout: VOC | Sonoperoxone | Y | 102 | 65 | 100 | Y | N |
| Herman 2 Shakeout: Pb | Wet Scrubber | Y | 0.16 | 0.1 | 10 | N | N |
| Herman 2 Sand Handling: $PM_{10}/PM_{2.5}$ | Baghouse | Y | 51 | 32 | 100 | N | N |
| Herman 2 Sand Handling: VOC | Sonoperoxone | Y | 102 | 64 | 100 | Y | N |
| Herman 3 Shakeout: PM10/PM2.5 | Wet Collector & Baghouse | Y | 49 | 18 | 100 | N | N |
| Herman 3 Shakeout: VOC | Sonoperoxone | Y | 97 | 36 | 100 | N | N |
| Herman 3 Sand Handling: $PM_{10}/PM_{2.5}$ | Wet Collector & Baghouse | Y | 49 | 18 | 100 | N | N |
| Herman 3 Sand Handling: VOC | Sonoperoxone | Y | 304 | 16 | 100 | Y | N |
| Inclined Shakeout: $PM_{10}$ | Baghouse | Y | 109 | 15 | 100 | Y | N |
| Inclined Shakeout: $PM_{2.5}$ | Baghouse | Y | 65 | 15 | 100 | N | N |
| Inclined Shakeout: PM | Baghouse | Y | 155 | 15 | 100 | Y | N |
| Vibratory Shaker: : $PM_{10}/PM_{2.5}$ | Baghouse | Y | 476 | 11 | 100 | Y | N |
| Vibratory Shaker: : PM | Baghouse | Y | 680 | 13 | 100 | Y | N |
| Shot Blast Machines: $PM_{10}/PM_{2.5}$ | Baghouse | Y | 488 | 38 | 100 | Y | N |
| Shot Blast Machines: PM | Baghouse | Y | 4877 | 380 | 100 | Y | Y |
| Grinders: $PM_{10}/PM_{2.5}$ | Baghouse | Y | 834 | 62 | 100 | Y | N |
| Grinders: PM | Baghouse | Y | 8340 | 620 | 100 | Y | Y |
| Phenolic Urethane Line #3: VOC | Acid Scrubber | Y | 120 | 14 | 100 | Y | N |

| Emission Unit / Pollutant | Control Device Used | Emission Limitation (Y/N) | Uncontrolled PTE (tons/year) | Controlled PTE (tons/year) | Major Source Threshold (tons/year) | CAM Applicable (Y/N) | Large Unit (Y/N) |
|---|---|---|---|---|---|---|---|
| Phenolic Urethane Line #4: VOC | Acid Scrubber | Y | 120 | 14 | 100 | Y | N |
| Phenolic Urethane Line #9: VOC | Acid Scrubber | Y | 252 | 39 | 100 | Y | N |
| Phenolic Urethane Line #9: $PM_{10}/PM_{2.5}$ | Baghouse | Y | 43 | 0.4 | 100 | N | N |
| Large Core Prod Cell: VOC | Acid Scrubber | Y | 428 | 50 | 100 | Y | N |
| Large Core Prod Cell: $PM_{10}/PM_{2.5}$ | Baghouse | Y | 71 | 0.4 | 100 | N | N |

The units evaluated in this table included units with control devices and emission limitations. Units not included here either did not have a control device or did not have an emission limitation. Based on this evaluation, the requirements of 40 CFR Part 64, CAM requirements have been included in this Title V Renewal.

(b) There are no New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60) included in the permit for this source.

(c) The Cupola melt furnace, Herman 2 and Herman 3 Pouring Stations are subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Metal and Steel Foundries, (40 CFR 63, Subpart EEEEE) because the source was constructed prior to December 23, 2002.

The Cupola melt furnace, Herman 2 and Herman 3 Pouring Stations are subject to the following portions of Subpart 40 CFR 63, Subpart EEEEE:

(1) 40 CFR 63.7680
(2) 40 CFR 63.7681
(3) 40 CFR 63.7682
(4) 40 CFR 63.7683
(5) 40 CFR 63.7690
(6) 40 CFR 63.7700
(7) 40 CFR 63.7710
(8) 40 CFR 63.7720
(9) 40 CFR 63.7730
(10) 40 CFR 63.7731
(11) 40 CFR 63.7732
(12) 40 CFR 63.7733
(13) 40 CFR 63.7734
(14) 40 CFR 63.7735
(15) 40 CFR 63.7736
(16) 40 CFR 63.7740
(17) 40 CFR 63.7741
(18) 40 CFR 63.7742
(19) 40 CFR 63.7743
(20) 40 CFR 63.7744
(21) 40 CFR 63.7745
(22) 40 CFR 63.7746
(23) 40 CFR 63.7747

(24) 40 CFR 63.7750
(25) 40 CFR 63.7751
(26) 40 CFR 63.7753
(27) 40 CFR 63.7760
(28) 40 CFR 63.7761
(29) 40 CFR 63.7765
(30) Appendix - Table 1 to Subpart EEEEE of Part 63

The provisions of 40 CFR 63 Subpart A – General Provisions, which are incorporated as 326 IAC 20-1-1, apply to the facility described in this section except when otherwise specified in 40 CFR 63 Subpart EEEEE .

**State Rule Applicability - Entire Source**

**326 IAC 2-2 (PSD)**

(1) Dalton Corporation, Warsaw Manufacturing Facility is an existing major stationary source because it is one of the 28 listed source categories (secondary metal production) and at least one regulated pollutant is emitted at a rate of 100 tons per year or greater.

(2) On February 22, 2002, IDEM issued a significant source modification approval (SSM 085-14027-00003) allowing Dalton Corporation to construct the Hot Box Core Making Line #9. The installation of this line was determined to increase utilization of the rest of the foundry processes.

As a result, other processes in the foundry were limited in order to render the PSD requirements not applicable to the Hot Box Core Making Line #9. The following table summarizes the limits specified for the affected processes of the foundry. These limits have been incorporated into the Part 70 Operating Permit.

| Operation | Limitation |
|---|---|
| Cupola Charge Handling<br><br>(Prior to 1977) | 199,194 tons per year of melted metal<br>PM = 0.6 pounds per ton of metal charged<br>PM10 = 0.36 pounds per ton of metal charged<br>Lead = 0.002 pounds per ton of metal charged |
| Cupola Melt Furnace<br><br>(Prior to 1977) | 187,919 tons per year of melted metal<br>PM = 0.821 pounds per ton of metal<br>$PM_{10}$ = 0.738 pounds per ton of metal<br>$SO_2$ = 1.25 pounds per ton of metal<br>NOx = 0.38 pounds per ton of metal<br>VOC = 0.009 pounds per ton of metal<br>CO = 7.250 pounds per ton of metal<br>Lead = 0.002 pounds per ton of metal |
| Herman 2 Sand Handling<br><br>(Prior to 1977) | 1,127,516 tons per year of core and mold sand handled (combined with Herman 3)<br>PM = 0.034 pounds per ton of metal and sand<br>$PM_{10}$ = 0.058 pounds per ton of metal and sand<br>VOC = 0.115 pounds per ton of metal and sand<br>Lead = 0.00018 pounds per ton of metal |
| Herman 2 Pouring<br><br>(V-19) | PM = 0.118 pounds per ton of metal and sand<br>$PM_{10}$ = 0.052 pounds per ton of metal and sand<br>VOC = 0.163 pounds per ton of metal and sand<br>Lead = 0.016 pounds per ton of metal |

| | |
|---|---|
| Herman 2 Castings Cooling<br><br>(V-8 & V-9) | PM = 0.288 pounds per ton of metal and sand<br>$PM_{10}$ = 0.196 pounds per ton of metal and sand<br>VOC = 0.687 pounds per ton of metal and sand |
| Herman 2 Shakeout<br><br>(Stack B) | PM = 0.034 pounds per ton of metal and sand<br>$PM_{10}$ = 0.058 pounds per ton of metal and sand<br>VOC = 0.115 pounds per ton of metal and sand<br>Lead = 0.00018 pounds per ton of metal |
| Herman 2 Waste Sand Handling | PM = 0.356 pounds per ton of and sand<br>$PM_{10}$ = 0.214 pounds per ton of sand |
| Inclined Shakeout and Sort System | PM = 0.072 pounds per ton of sand<br>$PM_{10}$ = 0.072 pounds per ton of sand |
| Waste Sand Handling, Screening, and Transport System<br>(Prior to 1977) | 112,752 tons per year of sand throughput<br>PM = 0.072 pounds per ton of sand<br>$PM_{10}$ = 0.011 pounds per ton of sand |
| Shot Blast Machines SB-1 through SB-9 (Prior to 1977 – 2006) | 112,752 tons per year of finished metal |

(3) **Herman 3 Mold Line (1991)**
The Herman 3 Mold Line has been reviewed pursuant to the requirements of 326 IAC 2-2 (PSD) for VOC emissions. The Herman 3 Mold Line was constructed in 1991 and the Herman 3 Casting Cooling was modified in 2002. Air Permit SSM 085-18009-00003, issued on December 9, 2003, specified the 326 IAC 2-2 PSD BACT requirements for the Herman 3 Mold Line.

(4) **Phenolic Urethane Core Making Lines #1, #2, #3, #4, #5, and #8 (Prior to 1977 – 1998)**
These core making lines are subject to the PSD requirements under 326 IAC 2-2 because their past actual emissions exceeded the PSD significant levels.

| **Phenolic Urethane Core Making Lines** | | |
|---|---|---|
| **Sand Limit** (ton/yr) | **Line #** | **VOC Limited PTE** (ton/yr) |
| 17,922 | Line #1 | 13.39 |
| 4,656 | Line #2 | 3.48 |
| 23,200 | Line #3 | 17.33 |
| 12,910 | Line #4 | 9.64 |
| 2,383 | Line #5 | 1.78 |
| 6,350 | Line #8 | 4.74 |
| 67,421 | Total | **50.36** |

(5) **Shot Blast Machines (Prior to 1977 – 2006)**
The Shot Blast Machines are not subject to the PSD requirements because the emissions are limited as follows:

| **Shot Blast Machines Limited PTE** | | | |
|---|---|---|---|
| **Pollutant** | **Emission Limits** | **PTE** (ton/yr) | **Emission Units** |
| PM | 0.5066 (lb/ton) | 28.55 | SB-1 – SB-9 |
| $PM_{10}$ | 0.5066 (lb/ton) | 28.55 | SB-1 – SB-9 |
| Lead (Pb) | 0.0045 (lb/ton) | 0.23 | SB-1 – SB-9 |
| PM | 5.7 (lb/hr) | 24.9 | SB-10 |
| $PM_{10}$ | 3.40 (lb/hr) | 14.9 | SB-10 |

| **Shot Blast Machines Limited PTE** | |
|---|---|
| **Finished Metal Limit** (ton/yr) | **Emission Units** |
| 112,752 | SB-1 through SB-9 |

The above limits make 326 IAC 2-2 not applicable.

(6) **Large Core Production Cell**
The Large Core Production Cell is not subject to the PSD requirements because the VOC emissions will be limited as follows:

| **Large Core Production Cell** | | |
|---|---|---|
| **Usage Limit** (pounds per year) | **VOC Content Limit** (lb VOC from material per lb material) | **VOC Emission Limit** (tons/yr) |
| 299,399.3 (resin) | 0.02904 | 4.35 |
| 32,934.6 (catalyst) | 1.0 | 16.47 |
| 245,504.7 (core wash) | 0.02 | 2.46 |
| 1,397 (release agent) | 0.9 | 0.63 |
| 1,725 (core box cleaner) | 1.0 | 0.86 |
| **Total** | | **24.77** |

The above limits make 326 IAC 8-1-6 and 326 IAC 2-2 not applicable.

(7) **Grinders (Prior to 1977)**
The Grinders are not subject to the PSD requirements because they were all constructed prior to the applicability date of the PSD program. This process has not been modified.

(8) **Dip Tank (Prior to 1977)**
The requirements of 326 IAC 2-2 (PSD) are not included in the Part 70 permit for the dip tank because it was constructed prior to July 1977. Sometime after 1977, the dip tank was divided into two separate tanks, which are not capable of being used simultaneously; however, this is not considered a modification pursuant to 326 IAC 2-2 (PSD) because the potential to emit was not affected by this change.

(9) **Shell Core Making Process (Prior to 1977)**
The Shell Core Making Process is not subject to the PSD requirements because it was constructed prior to the applicability date of the PSD program. This process has not been modified.

(10) **Air Set Core Making Process (Prior to 1977)**
The Air Set Core Making Process is not subject to the PSD requirements because it was constructed prior to the applicability date of the PSD program. This process has not been modified.

(11) **Phenolic Urethane Core Making Line #9 (2008 Modification)**
The Phenolic Urethane Core Making Line #9 is not subject to the PSD requirements because the VOC emissions will be limited as follows:

| Usage Limit (pounds per year) | VOC Content (lb VOC (from material) per lb of material) | VOC Emission Limit (tons/year) |
|---|---|---|
| 295,000 (resin) | 0.02904 | 4.28 |
| 32,935 (catalyst) | 1.0 | 16.47 |

The Phenolic Urethane Core Making Line #9 is not subject to the PSD requirements because the PM/PM10 emissions will be limited as follows:

| Usage Limit (tons/year) | Pollutant | Emission Limitation (lb pollutant per ton of sand) | Emissions (tons/year) |
|---|---|---|---|
| 12.000 | PM | 0.33 | 1.98 |
| | PM10 | 0.065 | 0.39 |

Compliance with the above limits makes 326 IAC8-1-6 and 326 IAC 2-2 not applicable to the 2008 modification.

(12) **Herman 3 Mold Line**

Pursuant to 326 IAC 2-2-3 (Prevention of Significant Deterioration (PSD)), the following is determined as Best Available Control Technology (BACT) for carbon monoxide (CO) for the Herman 3 Mold Line pouring, cooling and shakeout operation:

| Operation | CO Emission Limits |
|---|---|
| Pouring | 1.8 lb/ton iron |
| Cooling | 2.88 lb/ton iron |
| Shakeout | 1.32 lb/ton iron |

(13) **2009 Modification**

Since the unrestricted potential to emit of the 2009 modification to add the Return Sand Conveyor, Robotic Grinders, and Klein Transports (Waste Sand Handling) is greater than twenty-five (25) tons of PM per year, greater than fifteen (15) tons of $PM_{10}$ per year, and greater than 0.6 tons of lead (Pb) per year, this source has elected to limit the potential to emit of this modification as follows:

| | | | | | Emissions (ton/yr) | | |
|---|---|---|---|---|---|---|---|
| Operation | PM (lb/ton) | $PM_{10}$ (lb/ton) | Pb (lb/ton) | Throughput (ton/yr) | PM | $PM_{10}$ | Pb |
| Herman 2 Waste Sand Handling System* | 0.356 | 0.214 | -- | 106,000 | 20.8 | 11.6 | -- |
| Return Sand Conveyor (Stack D) | 0.000911 | 0.000431 | -- | 543,470 | 0.247 | 0.117 | -- |
| ABB and FANUC Robotic Grinders | 0.34 | 0.34 | 0.07 | 15,500 | 3.95 | 2.74 | 0.55 |
| Total | | | | | 24.73 | 14.74 | 0.55 |

*Fugitives also included

Compliance with these emission limits will restrict the potential to emit from the 2009 modification to add the Klein Transports (Waste Sand Handling), Return Sand Conveyor, and Robotic Grinders to less than twenty-five (25) tons of PM per year, less than fifteen (15) tons of $PM_{10}$ per year, and less than 0.6 tons of lead (Pb) per year. Therefore the requirements of 326 IAC 2-2 (PSD) are not applicable to the 2009 modification to add the Klein Transports (Waste Sand Handling), Return Sand Conveyor, and Robotic Grinders, including the unrestricted PTE of the 'fugitive' emissions from these emission units.

(14) **2010 Modification**

Since the unrestricted potential to emit of the 2010 modification to add the Vibratory Shaker and Hose Blast system is greater than twenty-five (25) tons of PM per year, greater than fifteen (15) tons of $PM_{10}$ per year, and greater than 0.6 tons of lead (Pb) per year, this source has elected to limit the potential to emit of this modification as follows:

| | | | | | *Emissions (ton/yr) | | |
|---|---|---|---|---|---|---|---|
| Operation | PM (lb/ton) | $PM_{10}$ (lb/ton) | Pb (lb/ton) | Throughput (ton/yr) | PM | $PM_{10}$ | Pb |
| Vibratory Shaker | 0.188 | 0.154 | -- | 142,000 | 17.9 | 12 | -- |
| Hose Blast system for Shot Blast Machine SB-8 | 0.67 | 0.34 | 0.066 | 16,500 | 6.9 | 2.9 | 0.54 |
| | | | | | | | |
| Total | | | | | 24.85 | 14.9 | 2.14 |

*Fugitives also included

Compliance with these emission limits will restrict the potential to emit from the 2011 modifications to less than twenty-five (25) tons of PM per year, less than fifteen (15) tons of $PM_{10}$ per year, and less than 0.6 tons of lead (Pb) per year. Therefore the requirements of 326 IAC 2-2 (PSD) are not applicable to the 2011 modifications, including the unrestricted PTE of the 'fugitive' emissions from these emission units.

(15) **2011 Modification**

Since the unrestricted potential to emit of the 2011 modification to add the SB 10 Blow-off Chamber is greater than twenty-five (25) tons of PM per year, greater than fifteen (15) tons of $PM_{10}$ per year and greater than 0.6 tons of lead (Pb) per year, this source has elected to limit the potential to emit of this modification as follows:

| | | | | | Emissions (ton/yr) | | |
|---|---|---|---|---|---|---|---|
| Operation | PM (lb/ton) | $PM_{10}$ (lb/ton) | Pb (lb/ton) | Throughput (ton/yr) | PM | $PM_{10}$ | Pb |
| SB 10 Blow-off Chamber | 0.605 | 1.088 | 0.16 | 20,000 | 24.75 | 14.28 | 1.72 |
| Total | | | | | 24.75 | 14.28 | 1.72 |

Compliance with these emission limits will restrict the potential to emit from the 2011 modifications to less than twenty-five (25) tons of PM per year, less than fifteen (15) tons of $PM_{10}$ per year, and less than 0.6 tons of lead (Pb) per year. Therefore the requirements of 326 IAC 2-2 (PSD) are not applicable to the 2011 modifications, including the unrestricted PTE of the 'fugitive' emissions from these emission units.

**326 IAC 2-6 (Emission Reporting)**

This source is subject to 326 IAC 2-6 (Emission Reporting) because it is required to have an operating permit pursuant to 326 IAC 2-7 (Part 70). The potential to emit of VOC and $PM_{10}$ is greater than 250 tons per year, and the potential to emit of CO is greater than 2,500 tons per year. Therefore, pursuant to 326 IAC 2-6-3(a)(1), annual reporting is required. An emission statement shall be submitted by July 1 and every year thereafter. The emission statement shall contain, at a minimum, the information specified in 326 IAC 2-6-4.

**326 IAC 5-1 (Opacity Limitations)**

This source is subject to the opacity limitations specified in 326 IAC 5-1-2(1).

**State Rule Applicability – Individual Facilities**

**326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))**
The operation of each emission unit constructed after July 27, 1997 will emit less than 10 tons per year of a single HAP and less than 25 tons per year of a combination of HAPs. Therefore, 326 IAC 2-4.1 does not apply.

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

(a) Process Weight Rate Less Than 60,000 Pounds per Hour
The pounds per hour limitations for the following processes with nominal process weight rates of less than 60,000 pounds per hour (30 tons per hour) were calculated with the following 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.

(b) Process Weight Rate Greater Than 60,000 Pounds per Hour
The pounds per hour limitations for the following processes with process weight rates greater than 60,000 pounds per hour (30 tons per hour) were calculated with the following equation:

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

The particulate control devices shall be in operation at all times in order for the facilities to comply with these limits.

| **Summary of Process Weight Rate Limits** | | | | |
|---|---|---|---|---|
| **Process / Emission Unit** | **Baghouse** | **P** (ton/hr) | **E** (lb/hr) | **Eqn. Used** |
| Cupola Charge Handling | None | 53.45 | 45.20 | (b) |
| Cupola Melt Furnace | Wet Scrubber A | 48.5 | 44.3 | (b) |
| Charge door fugitive particulate emissions | 14 | 48.5 | 44.3 | (b) |
| Herman 2 Pouring Station | V-19 | 203 | 58.7 | (b) |
| Herman 2 Castings Cooling | V-8 & V-9 | 203 | 58.7 | (b) |
| Herman 3 Pouring Station | V-10 | 193 | 58.1 | (b) |
| Herman 3 Castings Cooling | V-12 | 193 | 58.1 | (b) |
| Herman 3 Sand Handling, Shakeout and RSC1 | Wet Collector #1 | 523 | 69.5 | (b) |
| Herman 2 Shakeout and Klein Transport PF504-5 | Wet Collector #3 | 215 | 59.3 | (b) |
| Herman 3 Shakeout and Herman 3 Sand Handling | Wet Collector #4 | 358 | 65 | (b) |
| Herman 2 Sand Handling | 1 | 166 | 56.5 | (b) |
| Inclined Shakeout and Sort System and Vibratory Shaker | 2 | 97 | 51.0 | (b) |
| Shot Blast Machines (SB-1, SB-2, SB-3, SB-4, & SB-10) | 3 | 25 | 35.4 | (a) |
| Shot Blast Machine SB-7, Grinders GR-19, GR-20, GR-23, GR-25, GR-26, GR-34 - GR-36 | 6 | 38 | 42 | (b) |
| Waste Sand Handling, Screening and Transport System | 9 | 20 | 30.5 | (a) |
| Herman 3 Shakeout and Herman 3 Sand Handling | 11 | 358 | 65 | (b) |

| | | | | |
|---|---|---|---|---|
| Shot Blast Machine SB-9, Grinders GR-31 - GR-33, GR-37 | 12 | 28.5 | 38.7 | (a) |
| Herman 2 Sand Handling and Klein Transport PF902-5 | 13 | 175 | 57.1 | (b) |
| Grinders GR-1 - GR-4, GR-9, GR-10, GR-29, GR-30, ABB & FANUC | 15 | 34.5 | 41.2 | (b) |
| Shot Blast Machines (SB-5, SB-6, & SB-8, Hose Blast for SB-8) Grinders GR-11 - GR-14, GR-16, GR-17 | 16 | 50 | 44.5 | (b) |
| Phenolic Urethane Core Sand Hopper #1, Sand Heater #1, Large Core Sand Weigh Hopper, Holding Hopper #10 and Heater #10 | Q | 55 | 45.5 | (b) |
| Phenolic Urethane Core Sand Hoppers #3 and #4, Heaters #3 and #4 and Air Set Core Sand Hopper #8 | U | 25 | 35.4 | (a) |
| Sand Hopper #9, Sand Heater #9, Phenolic Urethane Core Sand Hopper #8, Heater #5 & #8 | Z | 23 | 33.5 | (a) |
| Northeast (NE) Sand Silo (Bin Vent) | Bin Vent | 38.7 | 42.2 | (b) |
| South (S) Sand Silo (Bin Vent) | Bin Vent | 35.0 | 41.3 | (b) |
| Pneumatic Sand Transporter #1 | Enclosed | 38.7 | 42.2 | (b) |
| Pneumatic Sand Transporter #2 | Enclosed | 35.0 | 41.3 | (b) |
| Phenolic Urethane Core Sand Mixer #1 | None | 7.0 | 15.1 | (a) |
| Phenolic Urethane Core Sand Mixer #2 | None | 3.0 | 8.6 | (a) |
| Phenolic Urethane Core Sand Mixer #3 | None | 7.0 | 15.1 | (a) |
| Phenolic Urethane Core Sand Mixer #4 | None | 7.0 | 15.1 | (a) |
| Phenolic Urethane Core Sand Mixer #5 | None | 5.0 | 12.1 | (a) |
| Phenolic Urethane Core Sand Mixer #8 | None | 5.0 | 12.1 | (a) |
| Sand Mixer #9 | None | 18.0 | 28.4 | (a) |
| Shell Core Sand Hopper #1 | None | 0.4 | 2.2 | (a) |
| Shell Core Sand Hopper #2 | None | 0.4 | 2.2 | (a) |
| Shell Core Machine #6 | None | 0.2 | 1.4 | (a) |
| Shell Core Machines #7 | None | 0.3 | 1.8 | (a) |
| Shell Core Machines #8 | None | 0.3 | 1.8 | (a) |
| Air Set Core Making Process (sand handling, sand mixer, & Air Set Core Machine #2) | None | 6.0 | 13.6 | (a) |
| Sand / Resin Mixer #10 | None | 15.0 | 25.2 | (a) |

**326 IAC 7-1.1 Sulfur Dioxide Emission Limitations**
The Cupola Melt Furnace is subject to this rule because the cupola has the potential to emit greater than 25 tons per year or 10 pounds per hour of $SO_2$; however, there are no applicable requirements for the furnace.

**326 IAC 8-1-6 (General Reduction Requirements for New Facilities)**
(a) The VOC BACT requirements of 326 IAC 8-1-6 have not been included in this Part 70 permit for the following units because they were constructed prior to January 1, 1980:

Cupola Melt Furnace, Herman 2 Mold Line, Inclined Shakeout and Sort System, Waste Sand Handling, Screening and Transport System, dip tank, shell core making processes, Air Set Core Making.

(b) Herman 3 Mold Line, constructed in 1991
The Herman 3 Mold Line has been reviewed pursuant to the requirements of 326 IAC 2-2 (PSD) for VOC emissions. The Herman 3 Mold Line was constructed in 1991 and the Herman 3 Casting Cooling was modified in 2002. Air Permit SSM 085-18009-00003, issued on December 9, 2003 specified the 326 IAC 2-2 PSD BACT for the Herman 3 Mold Line. These requirements also satisfy the VOC BACT requirements under 326 IAC 8-1-6 and will be incorporated into the Part 70 Operating Permit.

(c) Phenolic urethane Core Making Line #9, constructed in 2002, modified 2008. (From SSM 085-25675-00003)

(a) The amount of resin usage in the new phenolic urethane core making operations shall not exceed 295,000 pounds per twelve (12) consecutive month period, with compliance determined at the end of each month.

(b) The amount of catalyst usage in the new phenolic urethane core making operations shall not exceed 32,935 pounds per twelve (12) consecutive month period, with compliance determined at the end of the month.

(c) The VOC (from resin) emissions from the phenolic urethane core making operation shall not exceed 0.02904 pounds VOC from resin per pounds of resin.

Compliance with these limits, combined with potential VOC emissions from the P.U. core box cleaner, P.U release agent, P.U. core wash, P.U. core oven #9 and P.U. core oven #10 will limit the VOC emissions from the phenolic urethane core making operation to less than 25 tons per year and render 326 IAC 8-1-6 (New Facilities, General Reduction requirements) not applicable to the Phenolic Urethane Core Making #9.

(d) Phenolic Urethane Core Making Lines #1, #2, #3, #4, #5, and #8
The Phenolic Urethane Core Making lines were reviewed pursuant to the requirements of 326 IAC 2-2 (PSD) for VOC emissions. This PSD major review also satisfies the VOC BACT requirement under 326 IAC 8-1-6.

(e) Large Core Production Cell, permitted to be constructed in 2007
The Large Core Production Cell (ID LCC) has been reviewed pursuant to the requirements of 326 IAC 8-1-6 for VOC emissions. SSM 085-21851-00003, issued on October 6, 2006, specifies the 326 IAC 8-1-6 BACT for the Large Core Production Cell as follows:

| **VOC BACT Requirements for LCC** | | |
|---|---|---|
| **Usage Limit** (pounds per year) | **VOC Content Limit** (lb VOC from material per lb material) | **VOC Emission Limit** (tons/yr) |
| 299,399.3 (resin) | 0.02904 | 4.35 |
| 32,934.6 (catalyst) | 1.0 | 16.47 |
| 245,504.7 (core wash) | 0.02 | 2.46 |
| 1,397 (release agent) | 0.9 | 0.63 |
| 1,725 (core box cleaner) | 1.0 | 0.86 |
| **Total** | | **24.77** |

Compliance with these limitations shall limit emissions of VOC from the LCC to less than 25 tons per year such that the requirements of 326 IAC 8-1-6 (New Facilities, General Reduction Requirements) do not apply. Compliance with these limitations shall also limit emissions of VOC

from the LCC such that the emissions increases from the existing emission units, based on the Actual to Projected Actual test in 326 IAC 2-2-2, plus the limited potential to emit from the LCC will be less than PSD significant threshold of 40 tons per year. This modification at a major stationary source will not be major for PSD under 326 IAC 2-2-1.

(f) Pursuant to 326 IAC 8-1-6 (New facilities; general reduction requirements), the potential to emit of VOC of each core machine (#21 and #22) is less than 25 tons per year per unit; therefore, the requirements of 8-1-6 (BACT) do not apply to these core machines.

(g) Pursuant to 326 IAC 2-2 and 326 IAC 8-1-6, the VOC emissions from the Phenolic Urethane Core Making Line #1 and Phenolic Urethane Core Making Line #4 have been limited to less than 25 tons per year.

**326 IAC 8-2-9 (Miscellaneous Metal Coating)**
The paint dip tank was installed prior to November 1, 1980, therefore the requirements of 326 IAC 8-2-9 do not apply to the paint dip tank.

**326 IAC 8-3-2 (Cold Cleaner Operations) and 326 IAC 8-3-5 (Cold Cleaner Degreaser Operation and Control)**
Pursuant to 326 IAC 8-3-1(a)(2), organic solvent degreasing operations located anywhere in the state of Indiana are subject to these rules. The parts washers are subject to the requirements of 326 IAC 8-3-2 and 326 IAC 8-3-5.

**326 IAC 9-1-2 (CO Emissions)**
The Cupola Melt Furnace is subject to this rule because it was constructed after March 21, 1972, and has a capacity greater than 10 tons per hour. Pursuant to 326 IAC 9-1-2, the afterburners shall be in operation at all times when the Cupola Melt Furnace is in operation and during startup of the Cupola Melt Furnace.

## 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. As a result, Compliance Determination Requirements are included in the permit. The Compliance Determination Requirements in Section D of the permit are those conditions that are found directly within state and federal rules and the violation of which serves as grounds for enforcement action.

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

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

| Emission Unit | Control Device | Pollutant | Frequency of Testing |
|---|---|---|---|
| Cupola Melt Furnace | Wet Scrubber A and Wet ESP (Stack A) Baghouse #14 (Stack AD) | PM, $PM_{10}$, and Lead | Every 5 Years from last valid |

| Emission Unit | Control Device | Pollutant | Frequency of Testing |
|---|---|---|---|
| | Afterburners (Stack A) | VOC, CO | compliance determination |
| Herman 2 Shakeout | Wet Collector #3 (Stack B) | $PM/PM_{10}$ | |
| Herman 2 Sand Handling | Baghouse #1 (Stack F)<br>Baghouse #13 (Stack Y) | $PM/PM_{10}$ | |
| Herman 2 Waste Sand Handling | Wet Collector #3 (Stack B)<br>Baghouse #13 (Stack Y) | $PM/PM_{10}$ | |
| Herman 3 Pouring | Oxidation System | VOC | |
| Herman 3 Castings Cooling | | | |
| Herman 3 Shakeout | | | |
| Herman 3 Sand Handling | | | |
| Herman 3 Shakeout | Wet Collector #4 (Stack E)<br>Baghouse #11 (Stack W)<br>Wet Collector #1 (Stack D) | $PM/PM_{10}$, Pb | |
| Herman 3 Sand Handling | Wet Collector #1 (Stack D)<br>Wet Collector #2 (Stack C)<br>Wet Collector #4 (Stack E)<br>Baghouse #11 (Stack W) | $PM/PM_{10}$, Pb | |
| Return Sand Conveyor RSC1 | Wet Collector #1 (Stack D) | Pb | |
| Vibratory Shaker | Baghouse #2 (Stack G) | $PM/PM_{10}$ | |
| Shot Blast Machines SB-1 through SB-4, SB-10 | Baghouse #3 (Stack H) | PM, $PM_{10}$ and Lead | |
| SB-7, GR-19, GR-20, GR-23, GR-25, GR-26, GR-34 - GR-36 | Baghouse #6 (Stack K) | PM, $PM_{10}$ and Lead | |
| SB-9, GR-31 - GR-33, GR-37 | Baghouse #12 (Stack X) | PM, $PM_{10}$ and Lead | |
| GR-1 - GR-4, GR-9, GR-10, GR-29, GR-30, ABB & FANUC | Baghouse #15 (Stack AE) | PM, $PM_{10}$ and Lead | |
| SB-5, SB-6, & SB-8, Hose Blast for SB-8, GR-11 - GR-14, GR-16, GR-17 | Baghouse #16 (Stack AG) | PM, $PM_{10}$ and Lead | |
| Phenolic Urethane Core Making Lines #1 - #5 and #8 | Acid Scrubber AF (Stack AF) | VOC | |
| Sand Hopper #9 and Sand Heater #9 | Baghouse Z (Stack Z) | PM, $PM_{10}$ | |
| • | | VOC | |
| • | | VOC | |
| • | | VOC | |

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

| **Table 1: Summary of Compliance Monitoring Requirements** | | | | |
|---|---|---|---|---|
| **Control Device** | **Parameter** | **Frequency** | **Range*** | **Excursions and Exceedances** |
| CEMS for Cupola Melt Furnace | Temperature | Continuous | > 1300° F | Response steps |
| Wet Scrubber A Stack A | Pressure Drop | Daily | > 34” of water | |
| | Flow Rate | | > 225 GPM | |
| Wet Collector #1, Stack D | Visible emission notations | Daily | Normal-Abnormal | |
| | Pressure Drop | | >/= 8” of water | |
| | Flow Rate | | >/= 200 GPM | |
| Wet Collector #2 Stack C | Pressure Drop | Daily | > 8” of water | |
| | Flow Rate | | >/= 200 GPM | |
| | Visible emission notations | | Normal-Abnormal | |
| Wet Collector #3, Stack B | Visible emission notations | Daily | Normal-Abnormal | |
| | Pressure Drop | | >/= 8” of water | |
| | Flow Rate | | >/= 200 GPM | |
| Wet Collector #4 Stack E | Pressure Drop | Daily | > 8” of water | |
| | Flow Rate | | >/= 200 GPM | |
| | Visible emission notations | | Normal-Abnormal | |
| Vent V-8, V-9, V-19 | Visible emission notations | Daily | Normal-Abnormal | |
| Sonoperoxone - Herman 3 | ultra-sonic power | Daily | > 1500 W | |
| | Ozone Generator Plasma Voltage | | > 2700 V | |
| | Hydrogen Peroxide Usage | | > 1 gal/hr of muller operation, | |
| Baghouse #1 Stack F | Pressure Drop | Daily | 4” – 10” of water | |
| | Visible emission notations | | Normal-Abnormal | |
| Baghouse #2, Stack G | Visible emission notations | Daily | Normal-Abnormal | |
| | Pressure Drop | | 2” – 8” of water | |
| Baghouse #3 Stack H | Visible emission notations | Daily | Normal-Abnormal | |
| | Pressure Drop | | 2” – 8” of water | |
| Baghouse #6 Stack K | Pressure Drop | Daily | 2” – 8” of water | |
| | Visible emission notations | | Normal-Abnormal | |
| Baghouse #9 Stack R | Visible emission notations | Daily | Normal-Abnormal | |
| | Pressure Drop | | 2” – 8” of water | |
| Baghouse #11 Stack W | Pressure Drop | Daily | 4” – 10” of water | Response steps |
| | Visible emission notations | | Normal-Abnormal | |
| Baghouse #12 Stack X | Visible emission notations | Daily | Normal-Abnormal | |
| | Pressure Drop | | 2” – 8” of water | |
| Baghouse #13, Stack Y | Visible emission notations | Daily | Normal-Abnormal | |
| | Pressure Drop | | 2” – 8” of water | |
| Baghouse #14 Stack AD | Visible emission notations | Daily | Normal-Abnormal | |
| | Pressure Drop | | 3” – 9” of water | |
| Baghouse #15, Stack AE | Visible emission notations | Daily | Normal-Abnormal | |
| | Pressure Drop | | 2” – 8” of water | |

| Table 1: Summary of Compliance Monitoring Requirements | | | | |
|---|---|---|---|---|
| **Control Device** | **Parameter** | **Frequency** | **Range*** | **Excursions and Exceedances** |
| | | | | |
| | | | | |
| Baghouse #16, Stack AG | Visible emission notations | Daily | Normal-Abnormal | |
| | Pressure Drop | | 2" – 8" of water | |
| Baghouse #Q, Stack Q | Visible emission notations | Daily | Normal-Abnormal | |
| | Pressure Drop | | 3" – 9" of water | |
| Baghouse #U, Stack U | Visible emission notations | Daily | Normal-Abnormal | |
| | Pressure Drop | | 1" – 7" of water | |
| Baghouse #Z, Stack Z | Visible emission notations | Daily | Normal-Abnormal | |
| | Pressure Drop | | 3" – 9" of water | |
| SB-10 blow-off chamber fabric filter | Pressure Drop | Daily | 0.1" – 6.1" of water | |
| Acid Scrubber AF | Flow Rate | Daily | >/= 200 GPM | |
| | pH | | < 4.5 | |

* Range is correct unless established during last valid compliance test

These monitoring conditions are necessary because these control devices must operate properly to ensure compliance with 326 IAC 2-2 and/or 326 IAC 6-3 and/or 326 IAC 2-7 (Part 70), and/or 326 IAC 8-1-6 and/or 40 CFR 64.

## Recommendation

The staff recommends to the Commissioner that the Part 70 Operating Permit Renewal be approved. This recommendation is based on the following facts and conditions:

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

An application for the purposes of this review was received on August 5, 2011.

## Conclusion

The operation of this gray iron foundry shall be subject to the conditions of the attached Part 70 Operating Permit Renewal No. T085-30768-00003.

## IDEM Contact

(a) Questions regarding this proposed permit can be directed to Heath Hartley 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) 232-8217 or toll free at 1-800-451-6027 extension.

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

(c) For additional information about air permits and how the public and interested parties can participate, refer to the IDEM's Guide for Citizen Participation and Permit Guide on the Internet at: www.idem.in.gov

| | **Uncontrolled Potential To Emit** (ton/yr) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **PM** | **$PM_{10}$** | **$PM_{2.5}$** | **$SO_2$** | **$NO_X$** | **VOC** | **CO** | **CO2e** | **Pb** | **Total HAPs** |
| Cupola Charge Handling | 140.5 | 84.3 | 84.3 | 0 | 0 | 0 | 0 | 0 | 0.47 | 0 |
| Cupola Melt Furnace | 2,931.5 | 2,634.1 | 2,634.1 | 265.5 | 21.2 | 38.2 | 30,802.4 | 143,231 | 233.7 | 2,931.53 |
| Herman 2 Mold Line | 449.3 | 340.8 | 340.8 | 17.8 | 8.9 | 960.3 | 5,334.8 | 0 | 14.5 | 421.19 |
| Herman 3 Mold Line | 400.4 | 308.0 | 308.0 | 0 | 0 | 539.3 | 5,072.0 | 0 | 11.0 | 371.70 |
| Inclined Shakeout and Sort System | 155.2 | 108.6 | 65.0 | 0 | 0 | 0 | 0 | 0 | 0.0 | 0 |
| Vibratory Shaker | 679.8 | 475.8 | 475.8 | 0 | 0 | 0 | 0 | 0 | 0.0 | 0 |
| Waste Sand Handling, Screening and | 315.4 | 47.3 | 47.3 | 0 | 0 | 0 | 0 | 0 | 0.0 | 0 |
| Shot Blast Machines | 4,877.1 | 487.7 | 487.7 | 0 | 0 | 0 | 0 | 0 | 2.4 | 2.4 |
| Grinders | 8,339.5 | 834.0 | 834.0 | 0 | 0 | 0 | 0 | 0 | 0.0 | 0.0 |
| Robotic Grinders ABB and FANUC | 186.2 | 18.6 | 18.6 | 0 | 0 | 0 | 0 | 0 | 0.6 | 0.6 |
| Paint Dip Tank | 0 | 0 | 0 | 0 | 0 | 235.7 | 0 | 0 | 0 | 0 |
| Phenolic Urethane Core Making | | | | | | | | | | |
| Line # 1 | 11 | 11 | 11 | 0 | 0 | 120.3 | 0 | 0 | 0 | 11 |
| Line # 2 | 11 | 11 | 11 | 0 | 0 | 51.6 | 0 | 0 | 0 | 11 |
| Line # 3 | 11 | 11 | 11 | 0 | 0 | 120.3 | 0 | 0 | 0 | 11 |
| Line # 4 | 11 | 11 | 11 | 0 | 0 | 120.3 | 0 | 0 | 0 | 11 |
| Line # 5 | 11 | 11 | 11 | 0 | 0 | 103.1 | 0 | 0 | 0 | 11 |
| Line # 8 | 11 | 11 | 11 | 0 | 0 | 86.0 | 0 | 0 | 0 | 11 |
| Line # 9 | 283.8 | 42.6 | 42.6 | 0 | 0 | 252.0 | 0 | 0 | 0 | 26 |
| Shell Core Making Process | 11.3 | 11.3 | 11.3 | 0 | 0 | 13.1 | 0 | 0 | 0 | 11.26 |
| Air Set Core Making Process | 11.3 | 11.3 | 11.3 | 0 | 0 | 98.3 | 0 | 0 | 1.31E-05 | 11.26 |
| Large Core Production Cell | 473.0 | 71.0 | 71.0 | 0 | 0 | 427.8 | 0 | 0 | 0 | 43.36 |
| Combustion | 0.5 | 1.9 | 1.9 | 0.15 | 25.58 | 1.4 | 21.48 | 30,878 | 0.00 | 0.43 |
| | **19,322.3** | **5,544.8** | **5,501.1** | **283.5** | **55.7** | **3,167.8** | **41,230.7** | **174,108** | **262.7** | **3,887.8** |

| | **Limited Potential To Emit** (ton/yr) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **PM** | **$PM_{10}$** | **$PM_{2.5}$** | **$SO_2$** | **$NO_X$** | **VOC** | **CO** | **CO2e** | **Pb** | **Total HAPs** |
| Cupola Charge Handling | 59.8 | 35.9 | 35.9 | 0 | 0 | 0 | 0 | 0 | 0.20 | 0.2 |
| Cupola Melt Furnace | 77.1 | 69.3 | 69.3 | 117.4 | 39.5 | 0.8 | 681.2 | 63,352 | 0.19 | 77.14 |
| Herman 2 Mold Line | 285.9 | 216.7 | 216.7 | 11.3 | 5.6 | 608.9 | 3,382.5 | 0 | 9.22 | 267.05 |
| Herman 3 Mold Line | 39.9 | 48.0 | 48.0 | 0.00 | 0.00 | 60.14 | 630.42 | 0 | 0.59 | 29.15 |
| Inclined Shakeout and Sort System | 15.3 | 15.3 | 15.3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Vibratory Shaker | 13.3 | 10.9 | 10.9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Waste Sand Handling, Screening and | 4.1 | 0.6 | 0.6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Shot Blast Machines | 65.0 | 65.0 | 65.0 | 0 | 0 | 0 | 0 | 0 | 2.38 | 2.4 |
| Grinders | 125.3 | 125.3 | 125.3 | 0 | 0 | 0 | 0 | 0 | 0.00 | 0.0 |
| Robotic Grinders ABB and FANUC | 2.6 | 2.6 | 2.6 | 0 | 0 | 0 | 0 | 0 | 0.55 | 0.55 |
| Paint Dip Tank | 0 | 0 | 0 | 0 | 0 | 236 | 0 | 0 | 0 | 0 |
| Phenolic Urethane Core Making | | | | | | | | | | |
| Line # 1 | 11.3 | 11.3 | 11.3 | 0 | 0 | 35 | 0 | 0 | 0 | 11.3 |
| Line # 2 | 11.3 | 11.3 | 11.3 | 0 | 0 | 9.1 | 0 | 0 | 0 | 11.3 |
| Line # 3 | 11.3 | 11.3 | 11.3 | 0 | 0 | 45.5 | 0 | 0 | 0 | 11.3 |
| Line # 4 | 11.3 | 11.3 | 11.3 | 0 | 0 | 25.3 | 0 | 0 | 0 | 11.3 |
| Line # 5 | 11.3 | 11.3 | 11.3 | 0 | 0 | 4.7 | 0 | 0 | 0 | 11.3 |
| Line # 8 | 11.3 | 11.3 | 11.3 | 0 | 0 | 12.5 | 0 | 0 | 0 | 11.3 |
| Line # 9 | 2.0 | 0.4 | 0.4 | 0 | 0.0 | 26.7 | 0.0 | 0 | 0 | 1.98 |
| Shell Core Making Process | 11.3 | 11.3 | 11.3 | 0 | 0 | 13.1 | 0 | 0 | 0 | 11.26 |
| Air Set Core Making Process | 11.3 | 11.3 | 11.3 | 0 | 0 | 98.3 | 0 | 0 | 0 | 11.26 |
| Large Core Production Cell | 2.0 | 0.4 | 0.4 | 0 | 0 | 24.8 | 0 | 0 | 0 | 11.26 |
| Combustion | 0.49 | 1.94 | 1.94 | 0.15 | 25.58 | 1.41 | 21.48 | 30,877.61 | 0 | 0.43 |
| | **783.0** | **682.6** | **682.6** | **128.9** | **70.7** | **1,202.1** | **4,715.7** | **94,229.7** | **13.1** | **480.3** |

## Cupola Charge Handling
## Installation Date(s): Prior to 1977

Maximum Capacity: 468,222 tons per year of melted metal, coke & limestone
53.45 tons per hour of metal, coke & limestone
Limited Capacity: 199,194 tons per year of metal charged

| Pollutant | Emission Factors (lb/ton) | Uncontrolled PTE (ton/yr) | PSD Minor Limit (ton/yr) | 326 IAC 6-3-2 (ton/yr) |
|---|---|---|---|---|
| PM | 0.6 | 140.5 | 59.8 | 198.0 |
| $PM_{10}/PM_{2.5}$ | 0.36 | 84.3 | 35.9 | 198.0 |
| HAP - Lead (Pb) | 0.002 | 0.5 | 0.2 | NA |

Process Weight, P (ton/hr) = 53.45

**Calculation Methodology**

The annual metal limit and emission factors for the Cupola Charge Handling were derived from SSM 085-14027-00003, issued on February 22, 2002.
PM/PM10 Emission factor from FIRE 3-04-003-15.
Uncontrolled PTE (ton/yr) = Controlled PTE (lb/hr) x 8760 hr/yr / 2000 lb/ton

Limited PTE (ton/yr) = Limited Capacity (ton metal/year) x Emission Factor (lb/ton metal) x 1 ton/2000 lb
Emissions from cupola charge handling are not controlled.

## Cupola Melt Furnace
## Installation Date(s): Prior to 1977

Limited Capacity: 187,919 tons per year of melted metal
Maximum Capacity: 424,860 tons per year of melted metal, coke & limestone
48.5 tons per hour of metal

| Pollutant | Emission Factors (lb/ton) | Uncontrolled PTE (ton/yr) | Limited Emission Factors (lb/ton) | PSD Minor Limit (ton/yr) |
|---|---|---|---|---|
| PM | 13.8 | 2931.5 | 0.821 | 77.14 |
| $PM_{10}$ | 12.4 | 2634.1 | 0.738 | 69.34 |
| $PM_{2.5}$ | 12.4 | 2634.1 | -- | 69.34 |
| $SO_2$ | 1.25 | 265.5 | 1.25 | 117.45 |
| $NO_X$ | 0.1 | 21.2 | 0.42 | 39.46 |
| VOC | 0.18 | 38.2 | 0.009 | 0.85 |
| CO | 145 | 30802.4 | 7.250 | 681.21 |
| HAP - Lead (Pb) | 1.1 | 233.7 | 0.002 | 0.19 |
| HAP: Metals | 13.8 | 2931.5 | 0.821 | 77.14 |

Process Weight, P (ton/hr) = 48.5 **E** (lb/hr) **= 44.3**

**Calculation Methodology**

The annual metal limit and emission factors for the Cupola Melt Furnace were derived from SSM 085-14027-00003, issued on February 22, 2002.

PM, PM10, SO2, Nox, VOC, CO, Pb uncontrolled emission factors from FIRE 3-04-003-01

Uncontrolled PTE (ton/yr) = Controlled PTE (lb/hr) x 8760 hr/yr / 2000 lb/ton

Limited PTE (ton/yr) = Limited Capacity (ton metal/year) x Emission Factor (lb/ton metal) x 1 ton/2000 lb

All PM emissions are also HAP-Metals emissions.

The emissions from the melt furnace are controlled by Wet Scrubber A and 3 afterburners.

The charge door emissions are controlled by Baghouse #14.

| Cupola | Greenhouse Gas | | |
|---|---|---|---|
| | CO2 | CH4 | N2O |
| Emission Factor in lb/ton | 5,578.99 | 0.60 | 0.09 |
| Potential Emission in tons/yr | 142,217 | 15 | 2 |
| Summed Potential Emissions in tons/yr | 142,235 | | |
| CO2e Total in tons/yr | 143,231 | | |
| | 62,904 | 7 | 1 |
| | 62,912 | | |
| Limited CO2e Total in tons/yr | 63,352 | | |

**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.

GHG regulations have emission factors based upon coke usage and not emissions factors for metal. In order to relate between coke and metal, a ratio of coke usage to metal usage (0.12).

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).

## Herman 2 Mold Line
## Installation Date(s): Prior to 1977

| | | |
|---|---|---|
| Limited Capacity: | 1,127,516 | tons per year of core and mold sand handled |
| Maximum Capacity: | 324,120 | tons per year of metal throughput |
| | 1,454,160 | tons per year of sand throughput |
| | 37 | tons per hour of metal |
| | 166 | tons per hour of sand |

| Pollutant | Emission Factors (lb/ton) | Uncontrolled PTE (ton/yr) | PSD Minor Limit (ton/yr) | 326 IAC 6-3-2 (ton/yr) |
|---|---|---|---|---|
| **Pouring** | | | | |
| PM | 0.118 | 104.56 | 66.30 | 257.0 |
| $PM_{10}$ | 0.052 | 46.59 | 29.54 | 257.0 |
| $PM_{2.5}$ | 0.052 | 46.59 | 29.54 | |
| $SO_2$ | 0.020 | 17.78 | 11.28 | |
| $NO_X$ | 0.010 | 8.89 | 5.64 | |
| VOC | 0.163 | 144.93 | 91.89 | |
| CO | 1.800 | 1600.45 | 1014.76 | |
| HAP - Lead (Pb) | 0.016 | 14.23 | 9.02 | |
| HAP: Metals | 0.118 | 104.56 | 66.30 | |
| **Casting/Cooling** | | | | |
| PM | 0.288 | 256.16 | 162.42 | 257.0 |
| $PM_{10}$ | 0.196 | 174.18 | 110.44 | 257.0 |
| $PM_{2.5}$ | 0.196 | 174.18 | 110.44 | |
| VOC | 0.687 | 610.84 | 387.30 | |
| CO | 2.880 | 2560.72 | 1623.62 | |
| HAP: Metals | 0.288 | 256.16 | 162.42 | |
| **Shakeout** | | | | |
| PM | 0.034 | 30.23 | 19.17 | 257.0 |
| $PM_{10}$ | 0.058 | 51.57 | 32.70 | 257.0 |
| $PM_{2.5}$ | 0.058 | 51.57 | 32.70 | |
| VOC | 0.115 | 102.25 | 64.83 | |
| CO | 1.320 | 1173.66 | 744.16 | |
| HAP - Lead (Pb) | 0.00018 | 0.16 | 0.10 | |
| HAP: Metals | 0.034 | 30.23 | 19.17 | |
| **Sand Handling** | | | | |
| PM | 0.034 | 30.23 | 19.17 | 247.5 |
| $PM_{10}$ | 0.058 | 51.57 | 32.70 | 247.5 |
| $PM_{2.5}$ | 0.058 | 51.57 | 32.70 | |
| VOC | 0.115 | 102.25 | 64.83 | |
| HAP - Lead (Pb) | 0.00018 | 0.16 | 0.10 | |
| HAP: Metals | 0.034 | 30.23 | 19.17 | |
| **Waste Sand Handling - Klein Transports** | | *106000* | *.imited Waste Sand (tpy)* | |
| PM | 0.356 | 28.07 | 18.87 | 1.91 |
| $PM_{10}$ | 0.214 | 16.87 | 11.34 | 0.29 |
| $PM_{2.5}$ | 0.214 | 16.87 | 11.34 | 0.29 |
| HAP - Lead (Pb) | | 0.00 | 0.00 | fugitive |
| HAP: Metals | | 0.00 | 0.00 | |
| | | | | |

## Herman 2 Mold Line
## Installation Date(s): Prior to 1977

| Total Emissions: | Uncontrolled PTE | Limited PTE (ton/yr) |
|---|---|---|
| PM | 449.25 | 285.92 |
| $PM_{10}$ | 340.79 | 216.72 |
| $PM_{2.5}$ | 340.79 | 216.72 |
| $SO_2$ | 17.78 | 11.28 |
| $NO_X$ | 8.89 | 5.64 |
| VOC | 960.27 | 608.86 |
| CO | 5334.84 | 3382.55 |
| HAP - Lead (Pb) | 14.55 | 9.22 |
| HAP: Metals | 421.19 | 267.05 |

| | | |
|---|---|---|
| Pouring | P (ton/hr) = | 203 |
| Casting/Cooling | P (ton/hr) = | 203 |
| Shakeout | P (ton/hr) = | 203 |
| Sand Handling | P (ton/hr) = | 166 |

**Calculation Methodology**

The annual sand limit and emission factors for Herman 2 were derived from SSM 085-14027-00003, issued on February 22, 2002.

Pouring & Casting/Cooling & Shakeout:

EF for PM, PM10 and VOC from site specific stack tests. SO2 and Nox EF from FIRE 3-04-003-18

Uncontrolled PTE (ton/yr) = Max Capacity ((ton sand + metal)/hour) x Emission Factor (lb/(ton sand + metal)) x 8760 hr/yr / 2000 lb/ton

Limited PTE (ton/yr) = Limited Capacity ((ton sand + metal)/year) x Emission Factor (lb/(ton sand + metal)) x 1 ton/2000 lb

All PM emissions are also HAP-Metals emissions.

Particulate emissions from pouring and casting/cooling are not controlled.

Particulate emissions from shakeout are controlled by Wet Collector #3.

The Wet Collector #3 is common to Herman 2 Shakeout & Klein Transport PF504-5.

Sand Handling

Uncontrolled PTE (ton/yr) = Max Capacity ((ton sand)/hour) x Emission Factor (lb/(ton sand)) x 8760 hr/yr / 2000 lb/ton

Limited PTE (ton/yr) = Limited Capacity ((ton sand)/year) x Emission Factor (lb/ton sand) x 1 ton/2000 lb

Particulate emissions from sand handling are controlled by Baghouse #1 and Baghouse #13.

## Herman 3 Mold Line
## Installation Date(s): 1991

Limited Capacity: 90,578 tons per year of metal throughput
543,470 tons per year of sand throughput

Maximum Capacity: 245,280 tons per year of metal throughput
1,445,400 tons per year of sand throughput
28 tons per hour of metal
165 tons per hour of sand

| Pollutant | Uncontrolled Emission Factors (lb/ton) | Uncontrolled PTE (ton/yr) | PSD Minor Limit (ton/yr) | 326 IAC 6-3-2 E (ton/yr) |
|---|---|---|---|---|
| **Pouring** | | | | |
| PM | 0.1176 | 99.41 | 5.33 | 254.6 |
| $PM_{10}$ | 0.0524 | 44.30 | 2.37 | 254.6 |
| $PM_{2.5}$ | 0.0524 | 44.30 | 2.37 | |
| VOC | 0.163 | 137.79 | 7.38 | |
| CO | 1.800 | 1521.61 | 81.52 | |
| HAP - Lead (Pb) | 0.013 | 10.99 | 0.59 | |
| HAP: Metals | 0.118 | 99.41 | 5.33 | |
| **Casting/Cooling** | | | | |
| PM | 0.2881 | 243.54 | 13.05 | 254.6 |
| $PM_{10}$ | 0.1959 | 165.60 | 8.87 | 254.6 |
| $PM_{2.5}$ | 0.1959 | 165.60 | 8.87 | |
| VOC | 0.36 | 304.32 | 16.30 | |
| CO | 2.880 | 2434.58 | 130.43 | |
| HAP - Lead (Pb) | NA | Counted Above * | Counted Above * | |
| HAP: Metals | 0.29 | 243.54 | 13.05 | |
| **Shakeout** | | | | |
| PM | 0.034 | 28.74 | 10.78 | 254.6 |
| $PM_{10}$ | 0.058 | 49.03 | 18.39 | 254.6 |
| $PM_{2.5}$ | 0.058 | 49.03 | 18.39 | |
| VOC | 0.115 | 97.21 | 36.46 | |
| CO | 1.320 | 1115.85 | 418.47 | |
| HAP - Lead (Pb) | NA | Counted Above * | Counted Above * | |
| HAP: Metals | 0.034 | 28.74 | 10.78 | |
| **Sand Handling** | | | | |
| PM | 0.034 | 28.74 | 10.78 | 247.2 |
| $PM_{10}$ | 0.058 | 49.03 | 18.39 | 247.2 |
| $PM_{2.5}$ | 0.058 | 49.03 | 18.39 | |
| VOC | NA | Counted Above ** | Counted Above ** | |
| CO | NA | Counted Above *** | Counted Above *** | |
| HAP - Lead (Pb) | NA | Counted Above * | Counted Above * | |
| **Return Sand Conveyor RSC1** | | | | |
| PM | 0.034 | 28.74 | 10.78 | |
| $PM_{10}$ | 0.058 | 49.03 | 18.39 | |
| $PM_{2.5}$ | 0.058 | 49.03 | 18.39 | |
| VOC | NA | Counted Above ** | Counted Above ** | |
| CO | NA | Counted Above *** | Counted Above *** | |
| HAP - Lead (Pb) | NA | Counted Above * | Counted Above * | |
| | | | | |

## Herman 3 Mold Line
## Installation Date(s): 1991

| **Total Emissions:** | **Uncontrolled PTE** (ton/yr) | **Limited PTE** (ton/yr) |
|---|---|---|
| PM | 400.44 | 39.93 |
| $PM_{10}$ | 307.96 | 48.02 |
| $PM_{2.5}$ | 307.96 | 48.02 |
| VOC | 539.33 | 60.14 |
| CO | 5072.04 | 630.42 |
| HAP - Lead (Pb) | 10.99 | 0.59 |
| HAP: Metals | 371.70 | 29.15 |

| | |
|---|---|
| Pouring | P (ton/hr) = 193 |
| Casting/Cooling | P (ton/hr) = 193 |
| Shakeout | P (ton/hr) = 193 |
| Sand Handling | P (ton/hr) = 165 |

**Calculation Methodology**

The annual sand limit and emission factors for Herman 3 were derived from SSM 085-14027-00003, issued on February 22, 2002, and SSM 085-18009-00003, issued on December 9, 2003.

VOC emissions from Herman 3 Pouring Station, Castings Cooling, Shakeout, and Sand Handling are controlled by the Sonoperoxone® system.

The Sonoperoxone® system is common to Herman 3 Pouring, Castings Cooling, Shakeout, and Sand Handling.

* All lead emissions are accounted for in the emission factor for Pouring.

** The VOC emissions from sand handling are accounted for in the emission factor for shakeout.

** The CO emissions from sand handling are accounted for in the emission factor for shakeout.

Pouring & Casting/Cooling & Shakeout:

Uncontrolled PTE (ton/yr) = Max Capacity ((ton sand + metal)/hour) x Emission Factor (lb/(ton sand + metal)) x 8760 hr/yr / 2000 lb/ton

Limited PTE (ton/yr) = Limited Capacity ((ton sand + metal)/year) x Emission Factor (lb/(ton sand + metal)) x 1 ton/2000 lb

All PM emissions are also HAP-Metals emissions.

Particulate emissions from pouring and casting/cooling are not controlled.

Particulate emissions from shakeout are controlled by Wet Collector #1, #4 and Baghouse #11.

Sand Handling

Uncontrolled PTE (ton/yr) = Max Capacity ((ton sand)/hr) x Emission Factor (lb/(ton sand)) x 8760 / 2000

Limited PTE (ton/yr) = Limited Capacity ((ton sand)/year) x Emission Factor (lb/ton sand) x 1 ton/2000 lb

Particulate emissions from sand handling are controlled by Wet Collector #1, #2, #4 and Baghouse #11.

The Baghouse #11 is common to Herman 3 Shakeout, and Herman 3 Sand Handling.

## Inclined Shakeout and Sort System
## Installation Date(s): Prior to 1977

Maximum Capacity: 424,860 tons per year of metal throughput
48.5 tons per hour of metal

| Pollutant | Uncontrolled Emission Factors (lb/ton) | Uncontrolled PTE (ton/yr) | Limited Emission Factors (lb/ton) | PSD Minor Limit Limited PTE (ton/yr) | 326 IAC 6-3-2 Limited PTE E (ton/yr) |
|---|---|---|---|---|---|
| PM | 3.2 | 155.20 | 0.072 | 15.29 | 194.0 |
| $PM_{10}$ | 2.24 | 108.64 | 0.072 | 15.29 | 194.0 |
| $PM_{2.5}$ | 1.34 | 64.99 | 0.072 | 15.29 | 194.0 |

Process Weight, P (ton/hr) = 48.5

**Calculation Methodology**
The emission factors for the Inclined Shakeout and Sort System from AP-42 12.10-9.
The emission factors for the Inclined Shakeout and Sort System were derived from SSM 085-14027-00003, issued on February 22, 2002.
Uncontrolled PTE (ton/yr) = Controlled PTE (lb/hr) x 8760 hr/yr / 2000 lb/ton
Limited PTE (ton/yr) = Emission Factor (lb/ton) x Capacity (ton/hr) x 8760 hr/yr / 2000 lb/ton
Particulate emissions from the inclined shakeout and sort system are controlled by Baghouse #2.

## Vibratory shaker

The vibratory shaker station will assist in the removal of sand from casting cavities prior to casting finishing.

Nominal Throughput: 48.5 ton/hr
Annual Throughput: 424,860 ton/yr
Limited Capacity: 142,000 ton/yr

| Pollutant | Uncontrolled Emission Factors (lb/ton) | Uncontrolled PTE (ton/yr) | Fugitives (ton/yr) | Limited Emission Factors (lb/ton) | PSD Minor Lim (ton/yr) |
|---|---|---|---|---|---|
| PM | 3.2 | 679.78 | 4.54 | 0.188 | 13.35 |
| $PM_{10}$ | 2.24 | 475.84 | 3.18 | 0.154 | 10.93 |

**Methodology**
Emission factors for uncontrolled emissions are from WebFIRE, SCC 3-04-003-31 (Casting Shakeout)
Uncontrolled Emission (tons/yr) = Maximum Throughput (ton/yr) x Emission Factor (lb/ton)/2,000 lb/ton
Fugitive Emissions (tons/yr) = (Uncontrolled Emissions x (Limited Throughput / Maximum Throughput)) x (1 - Capture
Process Weight, P (ton/hr) = 48.5

## Waste Sand Handling, Screening and Transport System
## Installation Date(s): Prior to 1977

Limited Capacity: 112,752 tons per year of waste sand throughput
Maximum Capacity: 175,200 tons per year of waste sand throughput
20 tons per hour of waste sand

| **Pollutant** | **Uncontrolled Emission Factors** (lb/ton) | **Uncontrolled PTE** (ton/yr) | **Limited Emission Factors** (lb/ton) | **PSD Minor Limit** (ton/yr) | **326 IAC 6-3-2 E** (ton/yr) |
|---|---|---|---|---|---|
| PM | 3.6 | 315.36 | 0.072 | 4.06 | 159.7 |
| $PM_{10}$ | 0.54 | 47.30 | 0.011 | 0.62 | 159.7 |
| $PM_{2.5}$ | 0.54 | 47.30 | 0.011 | 0.62 | 159.7 |

Process Weight, P (ton/hr) = 20

**Calculation Methodology**

The annual metal limit and emission factors for the Inclined Shakeout and Sort System were derived from SSM 085-14027-00003, issued on February 22, 2002.

## Shot Blast Machines

Limited Capacity: 112,752 tons per year of finished metal (total for SB-1 through SB-9)
tal Maximum Capacity: 573,780 tons per year of finished metal throughput
Total Hourly Capacity: 65.50 tons per hour of finished metal

| Pollutant | Uncontrolled Emission Factors (lb/ton) | Uncontrolled PTE (ton/yr) | Limited Emission Factors (lb/ton) | PSD Minor Limit (ton/yr) | 326 IAC 6-3-2 E (ton/yr) | |
|---|---|---|---|---|---|---|
| **SB-1, SB-2, SB-4 & SB-5** | | | Max. Capacity: | 5.0 tons/hr finished metal ( | | |
| PM | 17 | 1489 | 0.5066 | 12.69 | 112.4 | |
| $PM_{10}$ | 1.7 | 149 | 0.5066 | 12.69 | 112.4 | |
| $PM_{2.5}$ | 1.7 | 149 | NA | 12.69 | 112.4 | |
| HAP - Lead (Pb) | | | 0.0045 | 0.09 | | |
| **SB-3, SB-6, & SB-8** | | | Max. Capacity: | 3.0 tons/hr finished metal ( | | |
| PM | 17 | 670 | 0.5066 | 9.52 | 96.6 | |
| $PM_{10}$ | 1.7 | 67 | 0.5066 | 9.52 | 96.6 | |
| $PM_{2.5}$ | 1.7 | 67 | NA | 9.52 | 96.6 | |
| HAP - Lead (Pb) | | | 0.0045 | 0.08 | | |
| **SB-7** | | | Max. Capacity: | 6.0 tons/hr finished metal | | |
| PM | 17 | 447 | 0.5066 | 3.17 | 118.2 | |
| $PM_{10}$ | 1.7 | 45 | 0.5066 | 3.17 | 118.2 | |
| $PM_{2.5}$ | 1.7 | 45 | NA | 3.17 | 118.2 | |
| HAP - Lead (Pb) | | | 0.0045 | 0.03 | | |
| **SB-9** | | | Max. Capacity: | 12.5 tons/hr finished metal | | |
| PM | 17 | 931 | 0.5066 | 3.17 | 142.9 | |
| $PM_{10}$ | 1.7 | 93 | 0.5066 | 3.17 | 142.9 | |
| $PM_{2.5}$ | 1.7 | 93 | NA | 3.17 | 142.9 | |
| HAP - Lead (Pb) | | | 0.0045 | 0.03 | | |
| **SB-10** | | | Max. Capacity: | 5.0 tons/hr finished metal | | |
| PM | 17 | 372 | NA | 24.9 | 112.4 | |
| $PM_{10}$ | 1.7 | 37 | NA | 14.9 | 112.4 | |
| $PM_{2.5}$ | 1.7 | 37 | NA | 14.90 | 112.4 | |
| HAP - Lead (Pb) | | | NA | | | |
| **Hose Blast for SB-8** | *Limited (ton/yr): 16500* | | Max. Capacity: | 8.0 tons/hr finishe | | fugitive |
| PM | 17 | 596 | 0.67 | 5.53 | 127.6 | 1.40 |
| $PM_{10}$ | 1.7 | 60 | 0.34 | 2.81 | 127.6 | 0.14 |
| $PM_{2.5}$ | 1.7 | 60 | NA | 2.81 | 127.6 | |
| HAP - Lead (Pb) | 0.058 | 2.03 | 0.066 | 0.54 | | 0.005 |

## Shot Blast Machines

**SB-10 Blow-off cham** *Limited (ton/yr): 20000* Max. Capacity: 5.0 tons/hr finishe fugitive

| | | | | | | |
|---|---|---|---|---|---|---|
| PM | 17 | 372 | 0.605 | 6.05 | 112.4 | 18.70 |
| $PM_{10}$ | 1.7 | 37 | 1.088 | 10.88 | 112.4 | 3.40 |
| $PM_{2.5}$ | 1.7 | 37 | NA | 10.88 | 112.4 | |
| HAP - Lead (Pb) | 0.058 | 1.27 | 0.16 | 1.60 | | 0.12 |

| **Total Emissions:** | **Uncontrolled PTE** (ton/yr) | **Limited PTE** (ton/yr) |
|---|---|---|
| PM | 4877 | 65.04 |
| $PM_{10}$ | 488 | 57.15 |
| $PM_{2.5}$ | 488 | 57.15 |
| HAP - Lead (Pb) | | 2.38 |

**326 IAC 6-3-2 Particulate Emission Rate Limitation**

| | | |
|---|---|---|
| SB-1, SB-2, SB-4 & SE | P (ton/hr) = | 5.0 |
| SB-3, SB-6, & SB-8 | P (ton/hr) = | 3.0 |
| SB-7 | P (ton/hr) = | 6.0 |
| SB-9 | P (ton/hr) = | 12.5 |
| SB-10 | P (ton/hr) = | 5 |
| Hose Blast for SB-8 | P (ton/hr) = | 8 |
| SB-10 Blow-off chamber | P (ton/hr) = | 5 |
| Total: | P (ton/hr) = | 65.50 |

**Calculation Methodology**

Uncontrolled PTE (ton/yr) = Emission Factor (lb/ton) * 8760 / 2000
Emission Factors from FIRE 3-04-003-40
The annual metal limit and emission factors for the Shot Blasting Machines were derived from SSM 085-14027-00003, issued on February 22, 2002.
The emission factors for Shot Blasting Machines SB-10 and SB-11 were derived from SSM 085-22046-00003, issued on March 23, 2006.
Uncontrolled PTE (ton/yr) = No. of like units x Max Capacity (ton finished metal/hour) x Emission Factor (lb/ton finished metal) x 8760 hr/yr / 2000 lb/ton
Limited PTE (ton/yr) = No. of like units x Limited Capacity (ton finished metal/yr) x [ Emission Factor (lb/ton finished metal) / Total No. of units ] x 8760 x 1 ton/2000 lb
Fugitive Emissions (tons/yr) = (Uncontrolled Emissions x (Limited Throughput / Maximum Throughput)) x (1 - Cap
Baghouse #3 is common to SB-1, SB-2, SB-3, & SB-4 & SB-10.
Baghouse #6 is common to SB-7, GR-19, GR-20, GR-23, GR-25, GR-26, GR-34, GR-35, & GR-36.
Baghouse #12 is common to SB-9, GR-31, GR-32, GR-33, & GR-37.
Baghouse #15 is common to GR-1 through GR-10, GR-29, GR-30, Grinders ABB & FANUC.
Baghouse #16 is common to SB-5, SB-6, & SB-8, Hose Blast System #8, GR-11, GR-12, GR-13, GR-14, GR-16,

## Grinders
## Installation Date(s): Prior to 1977

| | | |
|---|---|---|
| Total Maximum Capacity: | 981,120 | tons per year of finished metal throu |
| Total Hourly Capacity: | 112.0 | tons per hour of finished metal |
| Total Number of Grinders: | 28 | |
| Limited Capacity: | 15500 | tons per year ABB and FANUC |
| Limited Capacity: | 112,752 | tons per year of finished castings |

| Pollutant | Uncontrolled Emission Factors (lb/ton) | Uncontrolled PTE (ton/yr) | Limited Emission Factor (lb/ton) | Limited PTE (ton/yr) | 326 IAC 6-3-2 Limited PTE (ton/yr) |
|---|---|---|---|---|---|
| PM | 17 | 8339.5 | 0.5066 | 28.56 | 96.8 |
| $PM_{10}$ | 1.7 | 834.0 | 0.5066 | 28.56 | 96.8 |
| $PM_{2.5}$ | 1.7 | 834.0 | 0.5066 | 28.56 | 96.8 |
| Lead (Pb) | | | 0.0045 | 0.25 | |

| | Nominal Throughput | | Annual Throughput | |
|---|---|---|---|---|
| ABB Robot Grinder | 1.0 | ton/hr | 8,760 | ton/yr |
| FANUC Robot Grinder | 1.5 | ton/hr | 13,140 | ton/yr |
| Total | | | 21,900 | ton/yr |

| ABB and FANUC | Emissions | | |
|---|---|---|---|
| | PM | $PM_{10}/PM_{2.5}$ | Lead |
| *WebFIRE Emission Factor (lb/ton)* | *17* | *1.70* | *0.058* |
| Uncontrolled PTE (ton/yr) | 186.15 | 18.62 | 0.64 |
| Capture Efficiency (%) | 99% | 99% | 99% |
| Control Efficiency (%) | 98% | 80% | 98% |
| Controlled PTE (ton/yr) | 2.61 | 2.61 | 0.01 |
| **Limited PTE (ton/yr)** | **2.61** | **2.61** | **0.55** |
| **PSD Minor Limits (lb/ton)** | **0.34** | **0.34** | **0.071** |

**Calculation Methodology**

The annual metal limit and emission factors for the Grinders were derived from SSM 085-14027-00003, issued on February 22, 2002. ABB & FANUC from WebFIRE.

Emission Factors for limited emissions were provided by Dalton Foundry

Uncontrolled PTE (ton/yr) = No. of like units x Max Capacity (ton finished metal/hour) x Emission Factor (lb/ton finished metal) x 8760 hr/yr / 2000 lb/ton

Limited PTE (ton/yr) = No. of like units x Limited Capacity (ton finished metal/yr) x [ Emission Factor (lb/ton finished metal) / Total No. of units ] x 8760 x 1 ton/2000 lb

Controlled Emissions (tons/yr) = (Uncontrolled Emissions x (Limited Throughput / Maximum Throughput)) x Capture Efficiency x (1 - Control Efficiency)

All Grinders are controlled by Baghouses.

Baghouse #6 is common to SB-7, GR-19, GR-20, GR-23, GR-25, GR-26, GR-34, GR-35, & GR-36.

Baghouse #12 is common to SB-9, GR-31, GR-32, GR-33, & GR-37.

Baghouse #15 is common to GR-1 through GR-4, GR-9, GR-10, GR-29, GR-30, Grinders ABB & FANUC

Baghouse #16 is common to SB-5, SB-6, & SB-8, Hose Blast System #8, GR-11, GR-12, GR-13, GR-14, GR-16, & GR-17.

## Paint Dip Tank
## Installation Date(s): Prior to 1977

| Material | Density (lb/gal) | Weight % Volatile ($H_20$ & Organics) | Weight % Water (%) | Weight % Organics (%) | Volume % Water (%) | Volume % Solids (%) | Material Usage (gal/unit) | Max. Production (unit/hr) | VOC Content less $H_2O$ (lb/gal) | VOC Content (lb/gal) | PTE VOC (ton/yr) | PTE PM (ton/yr) | lb VOC / gal solids (lb/gal) | Transfer Efficiency (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Black Water-Reducible Primer (N-5570N) | 11.68 | 43% | 37% | 7% | 52% | 37% | 0.052 | 125 | 1.60 | 0.77 | 21.97 | 0.00 | 2.07 | 100% |
| Butyl Cellusolve (T-76) | 7.51 | 100% | 0% | 100% | 0% | 0% | 0.052 | 125 | 7.51 | 7.51 | 213.70 | 0.00 | 0.00 | 0% |
| | | | | | | | | | | | **235.67** | **0.00** | | |

**Calculation Methodology**

Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) * Weight % Organics) / (1-Volume % water)
Pounds of VOC per Gallon Coating = (Density (lb/gal) * Weight % Organics)
Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr)
Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (24 hr/day)
Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (8760 hr/yr) * (1 ton/2000 lbs)
Potential PM (ton/yr) = (units/hr) * (gal/unit) * (lbs/gal) * (1- Weight % Volatiles) * (1-Transfer efficiency) *(8760 hr/yr) *(1 ton/2000 lbs)
Pounds VOC per Gallon of Solids = (Density (lbs/gal) * Weight % organics) / (Volume % solids)
Total = Worst Coating + Sum of all solvents used

| Material | Density (lb/gal) | Material Usage (gal/unit) | Max. Production (unit/hr) | Weight % Xylene (%) | Weight % Toluene (%) | Weight % Formaldeh (%) | Weight % Benzene (%) | Weight % Hexane (%) | Weight % Glycol (%) | Weight % Methanol (%) |
|---|---|---|---|---|---|---|---|---|---|---|
| Black Water-Reducible Primer (N-5570N) | 11.68 | 0.052 | 125 | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Butyl Cellusolve (T-76) | 7.51 | 0.052 | 125 | 0% | 0% | 0% | 0% | 0% | 0% | 0% |

| Xylene Emissions (ton/yr) | Toluene Emissions (ton/yr) | Formaldehyde Emissions (ton/yr) | Benzene Emissions (ton/yr) | Hexane Emissions (ton/yr) | Glycol Ethers Emissions (ton/yr) | Methanol Emissions (ton/yr) |
|---|---|---|---|---|---|---|
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

**Calculation Methodology**

HAPS emission rate (tons/yr) = Density (lb/gal) * Gal of Material (gal/unit) * Maximum (unit/hr) * Weight % HAP * 8760 hrs/yr * 1 ton/2000 lbs

## Phenolic Urethane Core Making Lines (#1, #2, #3, #4, #5, & #8)
## Installation Date(s): pre 1977 - 1998

| Material | Pollutant | Emission Factors (lb/ton) | Uncontrolled PTE (ton/yr) | Limited PTE (ton/yr) | Percent Volatile (%) | Specific Gravity | VOC Content (lb/gal) | Material Usage (gal/yr) |
|---|---|---|---|---|---|---|---|---|
| **Phenolic Urethane Core Making Line #1** | | | *Installation Date(s): 1986 - 1989* | | (15-19) | | | |
| Limited Capacity: | | 17,922 | tons per year of sand | | | | | |
| Maximum Capacity: | | 61,320 | tons per year of sand | | | 7.0 | tons per hour of sand | |
| Mixers Resin | VOC | 0.185 | 5.67 | 1.66 | 100% | 1.10 | 9.17 | 361 |
| Core Wash | VOC | 0.200 | 6.13 | 1.79 | 1% | 1.38 | 0.12 | 31,144 |
| Core Machine Resin | VOC | 0.541 | 16.59 | 4.85 | 100% | 1.16 | 9.67 | 1,002 |
| Amine Catalyst | VOC | 2.750 | 84.32 | 24.64 | 100% | 0.72 | 5.97 | 8,259 |
| Core Box Cleaner | VOC | 0.144 | 4.42 | 1.29 | 100% | 0.98 | 8.17 | 316 |
| Release Agent | VOC | 0.105 | 3.22 | 0.94 | 90% | 0.82 | 6.15 | 306 |
| | | | **120.34** | **35.17** | | | | |
| **Phenolic Urethane Core Making Line #2** | | | *Installation Date(s): pre 1977 - 1992* | | | | | |
| Limited Capacity: | | 4,656 | tons per year of sand | | | | | |
| Maximum Capacity: | | 26,280 | tons per year of sand | | | 3.0 | tons per hour of sand | |
| Mixers Resin | VOC | 0.185 | 2.43 | 0.43 | 100% | 1.10 | 9.17 | 94 |
| Core Wash | VOC | 0.200 | 2.63 | 0.47 | 1% | 1.38 | 0.12 | 8,091 |
| Core Machine Resin | VOC | 0.541 | 7.11 | 1.26 | 100% | 1.16 | 9.67 | 260 |
| Core Machine Catalyst | VOC | 2.750 | 36.14 | 6.40 | 100% | 0.72 | 5.97 | 2,146 |
| Core Box Cleaner | VOC | 0.144 | 1.89 | 0.34 | 100% | 0.98 | 8.17 | 82 |
| Release Agent | VOC | 0.105 | 1.38 | 0.24 | 90% | 0.82 | 6.15 | 79 |
| | | | **51.57** | **9.14** | | | | |
| **Phenolic Urethane Core Making Line #3** | | | *Installation Date(s): pre 1977 - 1982* | | | | | |
| Limited Capacity: | | 23,200 | tons per year of sand | | | | | |
| Maximum Capacity: | | 61,320 | tons per year of sand | | | 7.0 | tons per hour of sand | |
| Mixers Resin | VOC | 0.185 | 5.67 | 2.15 | 100% | 1.10 | 9.17 | 468 |
| Core Wash | VOC | 0.200 | 6.13 | 2.32 | 1% | 1.38 | 0.12 | 40,316 |
| Core Machine Resin | VOC | 0.541 | 16.59 | 6.28 | 100% | 1.16 | 9.67 | 1,297 |
| Core Machine Catalyst | VOC | 2.750 | 84.32 | 31.90 | 100% | 0.72 | 5.97 | 10,692 |
| Core Box Cleaner | VOC | 0.144 | 4.42 | 1.67 | 100% | 0.98 | 8.17 | 409 |
| Release Agent | VOC | 0.105 | 3.22 | 1.22 | 90% | 0.82 | 6.15 | 396 |
| | | | **120.34** | **45.53** | | | | |
| **Phenolic Urethane Core Making Line #4** | | | *Installation Date(s): pre 1977 - 1993* | | | | | |
| Limited Capacity: | | 12,910 | tons per year of sand | | | | | |
| Maximum Capacity: | | 61,320 | tons per year of sand | | | 7.0 | tons per hour of sand | |
| Mixers Resin | VOC | 0.185 | 5.67 | 1.19 | 100% | 1.10 | 9.17 | 260 |
| Core Wash | VOC | 0.200 | 6.13 | 1.29 | 1% | 1.38 | 0.12 | 22,434 |
| Core Machine Resin | VOC | 0.541 | 16.59 | 3.49 | 100% | 1.16 | 9.67 | 722 |
| Core Machine Catalyst | VOC | 2.750 | 84.32 | 17.75 | 100% | 0.72 | 5.97 | 5,950 |
| Core Box Cleaner | VOC | 0.144 | 4.42 | 0.93 | 100% | 0.98 | 8.17 | 227 |
| Release Agent | VOC | 0.105 | 3.22 | 0.68 | 90% | 0.82 | 6.15 | 220 |
| | | | **120.34** | **25.34** | | | | |

## Phenolic Urethane Core Making Lines (#1, #2, #3, #4, #5, & #8)
## Installation Date(s): pre 1977 - 1998

**Phenolic Urethane Core Making Line #5** (21, 22 & 28)

Limited Capacity: 2,383 tons per year of sand
Maximum Capacity: 52,560 tons per year of sand 6.0 tons per hour of sand

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Mixers Resin | VOC | 0.185 | 4.86 | 0.22 | 100% | 1.10 | 9.17 | 48 |
| Core Wash | VOC | 0.200 | 5.26 | 0.24 | 1% | 1.38 | 0.12 | 4,141 |
| Core Machine Resin | VOC | 0.541 | 14.22 | 0.64 | 100% | 1.16 | 9.67 | 133 |
| Amine Catalyst | VOC | 2.750 | 72.27 | 3.28 | 100% | 0.72 | 5.97 | 1,098 |
| Core Box Cleaner | VOC | 0.144 | 3.78 | 0.17 | 100% | 0.98 | 8.17 | 42 |
| Release Agent | VOC | 0.105 | 2.76 | 0.13 | 90% | 0.82 | 6.15 | 41 |
| | | | **103.15** | **4.68** | | | | |

**Phenolic Urethane Core Making Line #8** *Installation Date(s): 1997 - 1998*

Limited Capacity: 6,350 tons per year of sand
Maximum Capacity: 43,800 tons per year of sand 5.0 tons per hour of sand

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Mixers Resin | VOC | 0.185 | 4.05 | 0.59 | 100% | 1.10 | 9.17 | 128 |
| Core Wash | VOC | 0.200 | 4.38 | 0.64 | 1% | 1.38 | 0.12 | 11,035 |
| Core Machine Resin | VOC | 0.541 | 11.85 | 1.72 | 100% | 1.16 | 9.67 | 355 |
| Core Machine Catalyst | VOC | 2.750 | 60.23 | 8.73 | 100% | 0.72 | 5.97 | 2,926 |
| Core Box Cleaner | VOC | 0.144 | 3.15 | 0.46 | 100% | 0.98 | 8.17 | 112 |
| Release Agent | VOC | 0.105 | 2.30 | 0.33 | 90% | 0.82 | 6.15 | 108 |
| | | **3.925** | **85.96** | **12.46** | | | | |

Limited Capacity: 67,421 tons per year of sand
Maximum Capacity: 306,600 tons per year of sand *78.01% Reduction on sand throughput*
Maximum Resin Usage: 0.726 lb VOC per ton of sand
Post Control Catalyst VOC Emission Factor: 0.319 lb VOC per ton of sand

| | **Uncontrolled PTE** (ton/yr) | **Limited PTE** (ton/yr) | **Material Usage** (gal/yr) |
|---|---|---|---|
| Mixers Resin | 28.36 | 6.24 | 1,360 |
| Core Wash | 30.66 | 6.74 | 117,160 |
| Core Machine Resin | 82.94 | 18.24 | 3,770 |
| Core Machine Catalyst | 421.58 | 92.70 | 31,071 |
| Core Box Cleaner | 22.08 | 4.85 | 1,188 |
| Release Agent | 16.10 | 3.54 | 1,150 |
| **Total VOC Emissions:** | **601.70** | **132.31** | |

## Phenolic Urethane Core Making Lines (#1, #2, #3, #4, #5, & #8)
## Installation Date(s): pre 1977 - 1998

| **Particulate Emissions:** ($PM/PM_{10}/PM_{2.5}$) Lines 1-5 & 8 | **Air Flowrate** (acfm) | **Grain Loading** (gr/ascf) | **PM Uncontrolled PTE** (lb/hr) | **PM Uncontrolled PTE** (ton/yr) | **PM Controlled PTE** (ton/yr) | **$PM_{10}$ Controlled PTE** (ton/yr) | **HAP (Metals) PTE** (ton/yr) |
|---|---|---|---|---|---|---|---|
| | 15,000 | 0.02 | 2.57 | 11.26 | **0.22** | **0.22** | **0.22** |

**326 IAC 6-3-2 Particulate Emission Rate Limitation**

| | | E = 4.10 P^0.67 | ton/yr |
|---|---|---|---|
| Phenolic Urethane Core Making Line #1 | P (ton/hr) = 7.0 | **E** (lb/hr) **= 15.1** | **66.1** |
| Phenolic Urethane Core Making Line #2 | P (ton/hr) = 3.0 | **E** (lb/hr) **= 8.6** | **37.5** |
| Phenolic Urethane Core Making Line #3 | P (ton/hr) = 7.0 | **E** (lb/hr) **= 15.1** | **66.1** |
| Phenolic Urethane Core Making Line #4 | P (ton/hr) = 7.0 | **E** (lb/hr) **= 15.1** | **66.1** |
| Phenolic Urethane Core Making Line #5 | P (ton/hr) = 6.0 | **E** (lb/hr) **= 13.6** | **59.7** |
| Phenolic Urethane Core Making Line #8 | P (ton/hr) = 5.0 | **E** (lb/hr) **= 12.1** | **52.8** |
| | | | 348.4 |

**Calculation Methodology**

VOC Controlled PTE (ton/yr) = Max Capacity (ton sand/hr) x Emission Factor (lb/ton sand) x 8760 hr/yr / 2000 lb/ton
VOC Limited PTE (ton/yr) = Limited Capacity (ton sand/yr) x Emission Factor (lb/ton sand) x 1 ton/2000 lb
VOC Catalyst Limited PTE (tons/year) = [ Limited PTE (ton/yr) x (1 - Capture Efficiency) ] + [ {Limited PTE (ton/yr) x Capture Efficiency} x (1 - Control Efficiency) ]
VOC Content (lb/gal) = Specific Gravity x Density H20 (lb/gal) x Percent Volatile
Material Usage (gal/yr) = Max Capacity (ton sand/yr) x Emission Factor (lb/ton sand) / VOC Content (lb/gal)
Particulate emissions are captured and controlled by a Cyclone prior to entering Acid Scrubber
All PM emissions are also HAP-Metals emissions.

Acid Scrubber AF is common to:

Phenolic Urethane Core Machines #1 and #2,
Phenolic Urethane Core Machines #4 and #5,
Phenolic Urethane Core Machines #7 through #19,
Phenolic Urethane Core Machines #21 and #22,
Phenolic Urethane Core Machine #25,
Phenolic Urethane Core Machines #27 through #29, and
Cold Box Phenolic Urethane Core Machines #31 through #33.

Baghouse Q is common to Phenolic Urethane Core Sand Hopper #1, and Phenolic Urethane electric Sand Heater #1.
Baghouse U is common to Phenolic Urethane Core Sand Hoppers #3 and #4, Phenolic Urethane electric Sand Heaters #3 and #4, and Air Set Core Sand Hopper #3.

Baghouse Z is common to:

Sand Hopper #9,
Sand Heater #9.
Phenolic Urethane Core Sand Hopper #8
Phenolic Urethane Sand Heater #5, and
Phenolic Urethane Sand Heater #8.

## Phenolic Urethane Core Making Line #9

Maximum Capacity:

| | | | |
|---|---|---|---|
| 18 | tons per hour of sand | 157,680 | tons per year of sand |
| 41.04 | pounds per hour of resin | 180 | tons per year of resin |
| 2.75 | pound of catalyst per ton of core sand | 217 | tons per year of catalyst |
| 20.408 | pound of core wash per ton of core sand | 1,609 | tons per year of core was |
| 18 | tons per hour of cores | 157,680 | tons per year of cores |

**Usage Limits:**

| | | | |
|---|---|---|---|
| 315,360,000 | pounds per year of sand | 12,000 | tons per year of sand |
| 359,510 | pounds per year of resin | 295,000.0 | pounds per year of resin |
| 433,620 | pounds per year of catalyst | 32,935.0 | pounds per year of catalyst |
| 245,505 | pounds per year of core wash | 245,505.0 | pounds per year of core wash |
| 1,397 | pounds per year of release agent | 1,397 | pounds per year of release agent |
| 1,725 | pounds per year of core box cleane | 1,725 | pounds per year of core box cleaner |
| 315,360,000 | pounds per year of cores | | |

| **Material** | **Pollutant** | **Uncontrolled Emission Factors (lb/ton)** | **Controlled Emission Factors** PM=lb/ton sand, **Uncontrolled Emission Factors** VOC=lb/lb material | **Uncontrolled PTE** (ton/yr) | **Limited PTE** (ton/yr) |
|---|---|---|---|---|---|
| Mixers | PM | 3.6 | 0.33 | 283.82 | 1.98 |
| Mixers | $PM_{10}$ | 0.54 | 0.065 | 42.57 | 0.39 |
| Resin | Noncatalyst VOC | | 0.02904 | 5.22 | 4.28 |
| Catalyst | VOC | | 1.0 | 216.81 | 16.47 |
| Core Wash | VOC | | 0.02 | 2.46 | 2.46 |
| Release Agent | VOC | | 0.9 | 0.63 | 0.63 |
| Core Box Cleaner | VOC | | 1.0 | 0.86 | 0.86 |
| Mixers | HAP: Metals | | 0.3 | 26.02 | **1.98** |
| | | | **Total VOC Emissions:** | **252.0** | **26.7** |

**326 IAC 6-3-2 Particulate Emission Rate Limitation** E = 55 P^0.11 - 40

Sand Handling: P (ton/hr) = 18 **E** (lb/hr) **= 35.6** 155.9

**Calculation Methodology**

The annual limits and emission factors for the Large Core Production Cell were derived from SSM 085-21851-00003, issued on October 6, 2006.

Uncontrolled PTE (ton/yr) = Max Capacity (ton sand/yr) x Emission Factor (lb/ton sand) * 8760 / 2000

PM Limited PTE (ton/yr) = Limited Capacity (ton sand/yr) x Emission Factor (lb/ton sand) x 1 ton/2000 lb

All PM emissions are also HAP-Metals emissions.

Particulate emissions from the enclosed pneumatic sand transporter are controlled by Baghouse V.

The Baghouse V is common to Large Core Sand Holding Hopper, and Large Core Sand Weigh Hopper.

VOC Limited PTE (ton/yr) = Limited Capacity (lb material/yr) x Emission Factor (lb VOC/lb material) x 1 ton/2000 lb

Phenolic Resin VOC Limited PTE (ton/yr) = Limited Capacity (lb resin/yr) x Emission Factor (lb noncatalyst VOC/lb resin) x 1 ton/2000 lb

## Shell Core Making Process
## Installation Date(s): Prior to 1977

| Material | Pollutant | Uncontrolled Emission Factors (lb/ton) | Uncontrolled PTE (ton/yr) | Percent Volatile (%) | Specific Gravity | VOC Content (lb/gal) | Material Usage (gal/yr) |
|---|---|---|---|---|---|---|---|
| Maximum Capacity: | 7,008 tons / year of sand | | | 0.8 tons per hour of sand | | | |
| Core Wash | VOC | 0.200 | 0.70 | 1% | 1.38 | 0.12 | 12,178 |
| Core Machine Resin | VOC | 0.541 | 1.90 | 100% | 1.16 | 9.67 | 392 |
| Catalysts | VOC | 2.750 | 9.64 | 100% | 0.72 | 5.97 | 3,230 |
| Core Box Cleaner | VOC | 0.144 | 0.50 | 100% | 0.98 | 8.17 | 123 |
| Release Agent | VOC | 0.105 | 0.37 | 90% | 0.82 | 6.15 | 120 |
| | | **Total VOC Emissions:** | **13.10** | | | | |

**Particulate Emissions:** ($PM/PM_{10}/PM_{2.5}$)

| **Air Flowrate** (acfm) | **Grain Loading** (gr/ascf) | **$PM/PM_{10}/PM_{2.5}$ Uncontrolled PTE** (ton/yr) | **HAP (Metals) Uncontrolled PTE** (ton/yr) |
|---|---|---|---|
| 15,000 | 0.02 | **11.26** | **11.26** |

**326 IAC 6-3-2 Particulate Emission Rate Limitation**

E = 4.10 P^0.67

| | | | | ton/yr |
|---|---|---|---|---|
| Sand Making Process: | P (ton/hr) = | 0.8 | **E** (lb/hr) = 3.5 | 15.5 |
| Shell Core Machine #6: | P (ton/hr) = | 0.2 | **E** (lb/hr) = 1.4 | 6.1 |
| Shell Core Machine #7: | P (ton/hr) = | 0.3 | **E** (lb/hr) = 1.8 | 8.0 |
| Shell Core Machine #8: | P (ton/hr) = | 0.3 | **E** (lb/hr) = 1.8 | 8.0 |

**Calculation Methodology**

Uncontrolled PTE (ton/yr) = Max Capacity (ton sand/yr) x Emission Factor (lb/ton sand) * 8760 / 2000
Limited PTE (ton/yr) = Limited Capacity (ton sand/yr) x Emission Factor (lb/ton sand) x 1 ton/2000 lb
Particulate emissions from the shell core making process are uncontrolled.

## Air Set Core Making Process
## Installation Date(s): Prior to 1977

| Material | Pollutant | Emission Factors (lb/ton) | Uncontrolled PTE (ton/yr) | Percent Volatile (%) | Specific Gravity | VOC Content (lb/gal) | Material Usage (gal/yr) |
|---|---|---|---|---|---|---|---|
| Maximum Capacity: | 52,560 | tons per year of | | 6.0 | tons per hour of sand | | |
| | 0 | gallons per year of core wash | | | gallons per hour of core wash | | |
| Core Wash | VOC | 0.200 | 5.26 | 1% | 1.38 | 0.12 | 91,336 |
| Core Machine Resin | VOC | 0.541 | 14.22 | 100% | 1.16 | 9.67 | 2,939 |
| Catalysts | VOC | 2.750 | 72.27 | 100% | 0.72 | 5.97 | 24,222 |
| Core Box Cleaner | VOC | 0.144 | 3.78 | 100% | 0.98 | 8.17 | 926 |
| Release Agent | VOC | 0.105 | 2.76 | 90% | 0.82 | 6.15 | 897 |
| | | **Total VOC Emissions:** | **98.29** | | | | |

**Particulate Emissions:** ($PM/PM_{10}/PM_{2.5}$)

| **Air Flowrate** (acfm) | **Grain Loading** (gr/ascf) | **PM Uncontrolled PTE** (ton/yr) | **HAP (Metals) Uncontrolled PTE** (ton/yr) |
|---|---|---|---|
| 15,000 | 0.02 | 11.26 | 11.26 |

**326 IAC 6-3-2 Particulate Emission Rate Limitation**

E = 4.10 P^0.67

| | | | | ton/yr |
|---|---|---|---|---|
| Sand Handling: | P (ton/hr) = | 6.0 | **E** (lb/hr) = 13.6 | 59.7 |
| Sand Mixer: | P (ton/hr) = | 6.0 | **E** (lb/hr) = 13.6 | 59.7 |
| Air Set Core Machine #2: | P (ton/hr) = | 6.0 | **E** (lb/hr) = 13.6 | 59.7 |
| | | | | 179.0 |

**Calculation Methodology**

Uncontrolled PTE (ton/yr) = Max Capacity (ton sand/yr) x Emission Factor (lb/ton sand) * 8760 / 2000

All VOC emissions are also HAP emissions of triethylamine (TEA).

Particulate emissions from the air set core making process are controlled by Baghouse U.

All PM emissions are also HAP-Metals emissions.

Baghouse U is common to Phenolic Urethane Core Sand Hoppers #3 and #4, Phenolic Urethane electric Sand Heaters #3 and #4, and Air Set Core Sand Hop

## Large Core Production Cell

Maximum Capacity:

| | | | |
|---|---|---|---|
| 30 | tons per hour of sand | 262,800 | tons per year of sand |
| 68.52 | pounds per hour of resin | 300 | tons per year of resin |
| 2.75 | pound of catalyst per ton of core sand | 361 | tons per year of catalyst |
| 20.408 | pound of core wash per ton of core sand | 2,682 | tons per year of core wash |
| 30 | tons per hour of cores | 262,800 | tons per year of cores |

**Usage Limits:**

| | | | |
|---|---|---|---|
| 525,600,000 | pounds per year of sand | **12,005** | **tons per year of sand** |
| 600,235 | pounds per year of resin | **299,399.3** | **pounds per year of resin** |
| 722,700 | pounds per year of catalyst | **32,934.6** | **pounds per year of catalyst** |
| 5,363,222 | pounds per year of core wash | **245,504.7** | **pounds per year of core wash** |
| 525,600,000 | pounds per year of cores | **1,397** | **pounds per year of release agent** |
| | | **1,725** | **pounds per year of core box cleaner** |

| **Material** | **Pollutant** | **Uncontrolled Emission Factors (lb/ton)** | **Controlled Emission Factors** PM=lb/ton sand, VOC=lb/lb material | **Uncontrolled PTE** (ton/yr) | **Limited PTE** (ton/yr) |
|---|---|---|---|---|---|
| Mixers | PM | 3.6 | 0.33 | 473.04 | **1.98** |
| Mixers | $PM_{10}$ | 0.54 | 0.065 | 70.96 | **0.39** |
| Resin | VOC | | 0.02904 | 8.72 | 4.35 |
| Catalyst | VOC | | 1.0 | 361.35 | 16.47 |
| Core Wash | VOC | | 0.02 | 53.63 | 2.46 |
| Release Agent | VOC | | 0.9 | 3.25 | 0.63 |
| Core Box Cleaner | VOC | | 1.0 | 0.86 | 0.86 |
| Mixers | HAP: Metals | | 0.3 | 43.36 | **1.98** |
| | | | **Total VOC Emissions:** | **427.81** | **24.76** |

**326 IAC 6-3-2 Particulate Emission Rate Limitation** E = 55 P^0.11 - 40

Sand Handling: P (ton/hr) = 30 **E** (lb/hr) **= 40.0** 175.0

**Calculation Methodology**

The annual limits and emission factors for the Large Core Production Cell were derived from SSM 085-21851-00003, issued on October 6, 2006.
Uncontrolled PTE (ton/yr) = Max Capacity (ton sand/yr) x Emission Factor (lb/ton sand) * 8760 / 2000
PM Limited PTE (ton/yr) = Limited Capacity (ton sand/yr) x Emission Factor (lb/ton sand) x 1 ton/2000 lb
All PM emissions are also HAP-Metals emissions.
Particulate emissions from the enclosed pneumatic sand transporter are controlled by Baghouse V.
The Baghouse V is common to Large Core Sand Holding Hopper, and Large Core Sand Weigh Hopper.
VOC Limited PTE (ton/yr) = Limited Capacity (lb material/yr) x Emission Factor (lb VOC/lb material) x 1 ton/2000 lb
The VOC emissions from the catalyst captured at the core box of the Phenolic Urethane Core Machines are controlled by an acid scrubber, identified as Acid Scrubber AF, exhaust to a stack, identified as Stack AF.
Particulate emissions are captured and controlled by a Cyclone prior to entering the Acid Scrubber
Acid Scrubber AF is common to: Phenolic Urethane Core Machines #1 and #2,
Phenolic Urethane Core Machines #4 and #5,
Phenolic Urethane Core Machines #7 through #19,
Phenolic Urethane Core Machines #21 and #22,
Phenolic Urethane Core Machine #25,
Phenolic Urethane Core Machines #27 and #28, and
Cold Box Phenolic Urethane Core Machines #29 and #30.

## Natural Gas Combustion

| | Heat Input Capacity (MMBtu/hr) | Potential Throughput (MMCF/yr) |
|---|---|---|
| **Phenolic Urethane Core Making Line #9** | | |
| Core Oven #10 | 6.0 | 52.6 |
| Core Oven #11 | 3.0 | 26.3 |
| **Phenolic Urethane Core Making Lines** | | |
| Core Oven #1 | 2.0 | |
| Core Oven #2 | 2.0 | |
| Core Oven #3 | 2.0 | |
| Core Oven #4 | 2.0 | |
| Core Oven #8 | 2.4 | |
| Core Oven #9 | 2.4 | |
| Core Oven #17 | 2.0 | |
| Core Oven #21 | 2.4 | |
| Core Oven #25 | 0.8 | |
| Core Oven #27 | 1.6 | |
| Core Oven #28 | 1.6 | |
| Phenolic Urethane Sand Heater #5 | 0.192 | |
| Phenolic Urethane Sand Heater #8 | 0.192 | |
| | 21.4 | 187.4 |
| **Large Core Production Cell** | | |
| natural gas-fired Core Oven #29 | 6.0 | 52.6 |
| **Hot Blast Preheater** | 22.0 | 192.7 |
| cupola | | |

511.5

**Hot Blast Preheater**
**Particulate Matter (PM) Emission Rate**
Pt = 1.09 / Q^0.26
Q = 22.0 Pt = 0.49

| | Pollutant | | | | | | |
|---|---|---|---|---|---|---|---|
| | **PM** | **$PM_{10}$** | **$PM_{2.5}$** | **$SO_2$** | **$NO_X$** | **VOC** | **CO** |
| *Emission Factor in lb/MMCF* | *1.9* | *7.6* | *7.6* | *0.6* | *100* | *5.5* | *84.0* |
| **Potential Emission in tons/yr** | | | | | | | |
| Phenolic Urethane Core Making Line #9 | 0.1 | 0.3 | 0.3 | 0.0 | 3.9 | 0.2 | 3.3 |
| Phenolic Urethane Core Making Lines | 0.2 | 0.7 | 0.7 | 0.1 | 9.4 | 0.5 | 7.9 |
| Large Core Production Cell | 0.0 | 0.2 | 0.2 | 0.0 | 2.6 | 0.1 | 2.2 |
| Hot Blast Preheater | 0.2 | 0.7 | 0.7 | 0.1 | 9.6 | 0.5 | 8.1 |
| | **0.5** | **1.9** | **1.9** | **0.2** | **25.6** | **1.4** | **21.5** |

**Calculation Methodology**

All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
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 (SUPPLEMENT D 3/98)
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF) / 2,000 lb/ton

## Natural Gas Combustion

| | HAPs - Organics | | | | |
|---|---|---|---|---|---|
| | Benzene | Dichloro-benzene | Formalde-hyde | Hexane | Toluene |
| *Emission Factor in lb/MMCF* | *2.1E-03* | *1.2E-03* | *7.5E-02* | *1.8E+00* | *3.4E-03* |
| **Potential Emission in tons/yr** | | | | | |
| Phenolic Urethane Core Making Line #9 | 2.8E-05 | 1.6E-05 | 9.9E-04 | 2.4E-02 | 4.5E-05 |
| Phenolic Urethane Core Making Lines | 2.0E-04 | 1.1E-04 | 7.0E-03 | 1.7E-01 | 3.2E-04 |
| Large Core Production Cell | 5.5E-05 | 3.2E-05 | 2.0E-03 | 4.7E-02 | 8.9E-05 |
| Hot Blast Preheater | 2.0E-04 | 1.2E-04 | 7.2E-03 | 1.7E-01 | 3.3E-04 |
| | **0.0** | **0.0** | **0.0** | **0.4** | **0.0** |

| | HAPs - Metals | | | | |
|---|---|---|---|---|---|
| | Lead (Pb) | Cadmium | Chromium | Manganese | Nickel |
| *Emission Factor in lb/MMCF* | *5.0E-04* | *1.1E-03* | *1.4E-03* | *3.8E-04* | *2.1E-03* |
| **Potential Emission in tons/yr** | | | | | |
| Phenolic Urethane Core Making Line #9 | 6.6E-06 | 1.4E-05 | 1.8E-05 | 5.0E-06 | 2.8E-05 |
| Phenolic Urethane Core Making Lines | 4.7E-05 | 1.0E-04 | 1.3E-04 | 3.6E-05 | 2.0E-04 |
| Large Core Production Cell | 1.3E-05 | 2.9E-05 | 3.7E-05 | 1.0E-05 | 5.5E-05 |
| Hot Blast Preheater | 4.8E-05 | 1.1E-04 | 1.3E-04 | 3.7E-05 | 2.0E-04 |
| | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

0.43

**Calculation Methodology**

Methodology is the same as the previous page.
The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Core Oven #1 is common to Phenolic Urethane Core Machines #1, #2, #15, & #18.
Core Oven #2 is common to Phenolic Urethane Core Machines #16 & #19
Core Oven #4 is common to Phenolic Urethane Core Machines #4 and #5.
Core Oven #21 is common to Phenolic Urethane Core Machines #21, #22, & #27.
Core Oven #29 is common to Large Core Production Cell Lines #10 and #11.

**Greenhouse Gas Emissions**

| | Greenhouse Gas | | |
|---|---|---|---|
| | CO2 | CH4 | N2O |
| Emission Factor in lb/MMcf | 120,000 | 2.3 | 2.2 |
| Potential Emission in tons/yr | 30,691 | 1 | 1 |
| Summed Potential Emissions in tons/yr | 30,692 | | |
| CO2e Total in tons/yr | 30,878 | | |

**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.
Greenhouse 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 (21) + N2O Potential Emission ton/yr x N2O GWP (310).

| Section* | Emission Unit / Process | Installation Date(s): | Included Emission Units | Controls |
|---|---|---|---|---|
| D.1 | Cupola Charge Handling | Prior to 1977 | | NONE |
| D.2 | Cupola Melt Furnace | Prior to 1977 | furnace & charge door | Wet Scrubber A; Baghouse #14 |
| D.3 | Herman 2 Mold Line | Prior to 1977 | Pouring, casting/cooling, shakeout & sand handling | Wet Collectors #3 (so) |
| D.3 | Herman 2 Sand Handling - Klein Transports | 2009 | | Baghouse #13, Wet Collector #3 |
| D.4 | Herman 3 Mold Line | 1991 | Pouring, casting/cooling, shakeout & sand handling | Sonoperoxone® system, Wet Collector #4 (so), Wet Collector #1 (sh), Baghouse #11 (so & sh) |
| D.5 | Inclined Shakeout and Sort System | Prior to 1977 | | Baghouse #2 |
| D.5 | Waste Sand Handling, Screening and Transport System | Prior to 1977 | | Baghouse #9 |
| D.5 | Vibratory Shaker | 2011 | | Baghouse #2 |
| D.6 | Shot Blast Machines | pre 1977 - 2006 | SB-1 through SB-11 | Baghouses #3, #6, #12, & #16 |
| D.6 | Grinders | Prior to 1977 | GR-1 through GR-38 | Baghouses #6, #12, #15, & #16 |
| D.6 | Hose Blast System for Shot Blast Machine SB-8 | 2011 | | Baghouse #16 |
| D.6 | Robotic Grinders ABB and FANUC | 2009 | | Baghouse #15 |
| D.6 | SB10 Blow-off Chamber | TBD | | Fabric Filter Control Device exhausted within building |
| D.7 | Paint Dip Tank | Prior to 1977 | | |
| D.8 | Hot Box Core Making Line #6 (aka "Mercury Marine") | 1991 | SH#6, NGH#6, SM#6, CM#1 | Baghouse Z |
| D.8 | Hot Box Core Making Line #7 | 1996 | SH#7, NGH#7, SM#79, CM#26 | Baghouse Z |
| D.8 | Phenolic Urethane Core Making Line #9 | 2002 | Mixer #9 (2002), SH#9, SM#9, CM#s8-10, CWDT#s8-10, CO#s8-10, ECO#5 | Acid Scrubber AF, Baghouse Z |
| | Hot Box Sand Mixer #9<br>Core Wash Dip Tank #8<br>Core Wash Dip Tank #9<br>Core Wash Dip Tank #10 | | | |
| D.9 | Phenolic Urethane Core Making Lines | pre 1977 - 1998 | | |
| | Phenolic Urethane Core Making Line #1 | 1986 - 1989 | Mixer #1 & CM #s 18&19 (1989), CM #17 (1988), CM #s 15&16 (1986) | Acid Scrubber AF, Baghouse Q |
| | Phenolic Urethane Core Making Line #2 | pre 1977 - 1992 | Mixer #2 (1987), CM #s 10&11 (pre 1977), CM #s 12&13 (1978), CM #14 (1992) | Acid Scrubber AF |
| | Phenolic Urethane Core Making Line #3 | pre 1977 - 1982 | Mixer #3 (1980), CM #s 1&2 (1982), CM #4 (1981), CM #5 (pre 1977) | Acid Scrubber AF, Baghouse U, Baghouse Z |
| | Phenolic Urethane Core Making Line #4 | pre 1977 - 1993 | Mixer #4 & CM #7 (1986), CM #s 8&9 (pre 1977), CM #s 25&26 (1993) | Acid Scrubber AF, Baghouse U |
| | Phenolic Urethane Core Making Line #5 | 1992 - 1996 | Mixer #5 & CM #s 21&22 (1992), CM #17 (1996) | Acid Scrubber AF, Baghouse Z |
| | Phenolic Urethane Core Making Line #8 | 1997 - 1998 | Mixer #8 (1997), CM #28 (1998) | Acid Scrubber AF, Baghouse Z |
| D.10 | Shell Core Making Process | Prior to 1977 | SCM#s6-8, SCWDT#s6-8 | NONE |
| D.11 | Air Set Core Making Process | Prior to 1977 | SH#3, ASCM#2 | Baghouse U |
| D.12 | Large Core Production Cell | 2007 (to be installed) | Mixer #s10-11, CM#s29-30, CWDT#s29-30, CO#29 | Acid Scrubber AF, Baghouse V |
| D.13 | Hot Blast Preheater | 1981 | | |

**Notes:**

* Section corresponds to the Section Ds of the Part 70 Permit.

so = shakeout
sh = sand handling
SH = sand hopper
SM = sand mixer

CO = core oven
ECO = electric core oven
NGH = natural gas heater
CWDT = core wash dip tank

ASCM = air set core machine
SCWDT = shell core wash dip
SCM = shell core machine
CM = core machine

## Annual Enforceable Limits

| Emission Unit / Process | Annual Limitation | |
|---|---|---|
| Cupola Charge Handling | 199,194 | tons per year of metal charged |
| Cupola Melt Furnace | 187,919 | tons per year of melted metal |
| Herman 2 and Herman 3 Sand Handling | 1,127,516 | tons per year of core and mold sand handled |
| Herman 2 Sand Handling - Klein Transports | 106,000 | tons per year of core and mold sand handled |
| Herman 3 Mold Line | 90,578 | tons per year of metal throughput |
| | 543,470 | tons per year of sand throughput |
| Waste Sand Handling, Screening and Transport System | 112,752 | tons per year of waste sand throughput |
| Shot Blast Machines | 112,752 | tons per year of finished metal (total for SB-1 through SB-9) |
| Hose Blast System for Shot Blast Machine SB-8 | 16,500 | tons per year of finished castings |
| Robotic Grinders ABB and FANUC | 15,500 | tons per year of finished castings |
| SB10 Blow-off Chamber | 20,000 | tons per year of finished castings |
| Vibratory Shaker | 142,000 | tons per year of metal throughput |
| Phenolic Urethane Core Making Line #9 | 295,000 | pounds per year of resin usage |
| | 32,935 | gallons per year of catalyst usage |
| | 12,000 | tons per year of sand |
| Phenolic Urethane Core Making Line #1 | 17,922 | tons per year of sand |
| Phenolic Urethane Core Making Line #2 | 4,656 | tons per year of sand |
| Phenolic Urethane Core Making Line #3 | 23,200 | tons per year of sand |
| Phenolic Urethane Core Making Line #4 | 12,910 | tons per year of sand |
| Phenolic Urethane Core Making Line #5 | 2,383 | tons per year of sand |
| Phenolic Urethane Core Making Line #8 | 6,350 | tons per year of sand |
| Phenolic Urethane Core Making Lines | 177,260 | gallons per year of core wash |
| | 1,150 | gallons per year of release agent |
| | 1,188 | gallons per year of core box cleaner |
| Large Core Production Cell | 12,005 | tons per year of sand |
| | 299,399 | pounds per year of resin |
| | 32,935 | pounds per year of catalyst |
| | 245,505 | pounds per year of core wash |
| | 1,397 | pounds per year of release agent |
| | 1,725 | pounds per year of core box cleaner |

# INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

*We Protect Hoosiers and Our Environment.*

*Mitchell E. Daniels Jr.*
**Governor**

*Thomas W. Easterly*
**Commissioner**

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


**SENT VIA U.S. MAIL: CONFIRMED DELIVERY AND SIGNATURE REQUESTED**

TO: Michael Schall
Dalton Corporation, Warsaw Manufacturing Facility
PO Box 1388
Warsaw, IN 46581-1388

DATE: August 20, 2012

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

SUBJECT: Final Decision
Title V
085-30768-00003

Enclosed is the final decision and supporting materials for the air permit application referenced above. Please note that this packet contains the original, signed, permit documents.

The final decision is being sent to you because our records indicate that you are the contact person for this application. However, if you are not the appropriate person within your company to receive this document, please forward it to the correct person.

A copy of the final decision and supporting materials has also been sent via standard mail to:
OAQ Permits Branch Interested Parties List

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178, or toll-free at 1-800-451-6027 (ext. 3-0178), and ask to speak to the permit reviewer who prepared the permit. If you think you have received this document in error, please contact Joanne Smiddie-Brush of my staff at 1-800-451-6027 (ext 3-0185), or via e-mail at jbrush@idem.IN.gov.

Final Applicant Cover letter.dot 11/30/07

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT**
*We Protect Hoosiers and Our Environment.*

*Mitchell E. Daniels Jr.*
**Governor**

*Thomas W. Easterly*
**Commissioner**

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

August 20, 2012

TO: Warsaw Public Library

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

Subject: **Important Information for Display Regarding a Final Determination**

**Applicant Name: Dalton Corporation Warsaw Manufacturing Facility**
**Permit Number: 085-30768-0003**

You previously received information to make available to the public during the public comment period of a draft permit. Enclosed is a copy of the final decision and supporting materials for the same project. Please place the enclosed information along with the information you previously received. To ensure that your patrons have ample opportunity to review the enclosed permit, **we ask that you retain this document for at least 60 days.**

The applicant is responsible for placing a copy of the application in your library. If the permit application is not on file, or 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.

Enclosures
Final Library.dot 11/30/07

# Mail Code 61-53

| IDEM Staff | CDENNY 8/20/2012<br>Dalton Corporation, Warsaw Manufacturing Facility 085-30768-00003 (final) | | | 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 | | Michael Schall Dalton Corporation, Warsaw Manufacturing Facility PO Box 1388 Warsaw IN 46581-1388 (Source CAATS) | | | | | | | | | |
| 2 | | R Scott Bleeks VP / GM Dalton Corporation, Warsaw Manufacturing Facility PO Box 1388 Warsaw IN 46581-1388 *(RO CAATS)* | | | | | | | | | |
| 3 | | Warsaw City Counil and Mayors Office P.O. Box 817 Warsaw IN 46581 *(Local Official)* | | | | | | | | | |
| 4 | | Paul Rhodes 1901 E. Main St Warsaw IN 46580 *(Affected Party)* | | | | | | | | | |
| 5 | | Warsaw Community Public Library 310 E Main St Warsaw IN 46580-2882 *(Library)* | | | | | | | | | |
| 6 | | Kosciusko County Board of Commissioners 100 W. Center St, Room 220 Warsaw IN 46580 *(Local Official)* | | | | | | | | | |
| 7 | | James Rickun James S. Rickun Environmental Consulting 4933 Black Oak Drive Madison WI 53711-4373 *(Consultant)* | | | | | | | | | |
| 8 | | Mr. Tim Thomas c/o Boilermakers Local 374 6333 Kennedy Ave. Hammond IN 46333 *(Affected Party)* | | | | | | | | | |
| 9 | | Kosciusko County Health Department 100 W. Center Street, 3rd Floor Warsaw IN 46580-2877 *(Health Department)* | | | | | | | | | |
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