INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We make Indiana a cleaner, healthier place to live.

Mitchell E. Daniels, Jr.
Governor

Thomas W. Easterly
Commissioner

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

TO: Interested Parties / Applicant

DATE: July 26, 2005
RE: Muncie Casting Corporation / 035-19855-00061
FROM: Paul Dubenetzky
Chief, Permits Branch
Office of Air Quality

Notice of Decision: Approval - Effective Immediately

Please be advised that on behalf of the Commissioner of the Department of Environmental Management, I have issued a decision regarding the enclosed matter. Pursuant to IC 13-15-5-3, this permit is effective immediately, unless a petition for stay of effectiveness is filed and granted according to IC 13-15-6-3, 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 and IC 13-15-6-1 require that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office of Environmental Adjudication, 100 North Senate Avenue, Government Center North, Room 1049, Indianapolis, IN 46204, **within eighteen (18) calendar days of the mailing of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

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

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

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

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
FNPER.dot 1/10/05

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We make Indiana a cleaner, healthier place to live.

Mitchell E. Daniels, Jr.
Governor

Thomas W. Easterly
Commissioner

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

July 26, 2005

Mr. Wayne Vest
Muncie Casting Corporation
P.O. Box 2328
Muncie, IN 47302

Re: 035-19855-00061
First Significant Permit Revision to
FESOP 035-9977-00061

Dear Mr. Vest:

Muncie Casting Corporation was issued a Federally Enforceable State Operation Permit (FESOP) on October 6, 2000 for a stationary aluminum and gray and ductile iron foundry. A letter requesting changes to this permit was received on November 19, 2004. Pursuant to the provisions of 326 IAC 2-8-11.1 a significant permit revision to this permit is hereby approved as described in the attached Technical Support Document.

The revision consists of the addition of facilities and changes to existing emission units summarized as follows:

(a) Two (2) new 2300-pound electric aluminum melting furnaces have been added to the aluminum foundry. The combined total aluminum throughput capacity for the five (5) 2300-pounds furnaces has been increased from 0.450 tons per hour to 1.39 tons per hour.

(b) Three (3) new U-180 core machines have been added to the iron foundry and one (1) existing U-180 core machine, formerly located in the aluminum foundry, has been moved to the iron foundry.

(c) The Ashland Chemical Novathane binder system has been replaced with the Ashland Chemical PepSet binder system in the existing coremaking operations (EU22 and EU23).

(d) Muncie Casting Corporation has also requested to have the maximum throughput capacity of aluminum in the aluminum foundry be increased to 1.71 tons per hour.

The revision has been determined to be significant permit revision pursuant to 2-8-11.1 (f) because the PM and PM10 emission limits in conditions D.1.1 and D.1.2 of the original FESOP are being revised which can not be done through a minor permit revision and the potential to emit of PM, PM10, and VOC from the modification is greater than 25 tons per year.

Pursuant to 326 IAC 2-8-11.1, this permit shall be revised by incorporating the significant permit revision into the permit. All other conditions of the permit shall remain unchanged and in effect. Please attach a copy of this modification and the following revised permit pages to the front of the original permit.

This decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21.5-3-5. If you have any questions on this matter, please contact Trish Earls, c/o OAQ, 100 North Senate Avenue, Indianapolis, Indiana, 46204, or call at (973) 575-2555, ext. 3219 or dial (800) 451-6027, and ask for extension 3-6878.

Sincerely,

Origin signed by

Paul Dubenetzky, Chief
Permits Branch
Office of Air Quality

Attachments
(TE/EVP)
cc: File – Delaware County
U.S. EPA, Region V
Delaware County Health Department
Air Compliance Section Inspector – Marc Goldman
Compliance Data Section
Administrative and Development
Technical Support and Modeling

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We make Indiana a cleaner, healthier place to live.

Mitchell E. Daniels, Jr.
Governor

Thomas W. Easterly
Commissioner

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

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP) OFFICE OF AIR QUALITY

Muncie Casting Corporation
1406 East 18th Street
Muncie, Indiana 47302

(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 provision of this permit is grounds for enforcement action; permit termination, revocation and reissuance, or modification; and denial of a permit renewal application. 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 2-8 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.: F035-9977-00061	
Issued by: Paul Dubenetzky, Branch Chief Office of Air Quality	Issuance Date: October 6, 2000 Expiration Date: October 6, 2005

First Significant Permit Revision No. 035-19855-00061	Pages affected: 3, 3a, 4 -7, 7a, 26 - 34, 34a – 34g, 35 - 37, 40a - 40e
Issued by:Origin signed by Paul Dubenetzky, Branch Chief Office of Air Quality	Issuance Date:July 26, 2005

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 2-8-3(b)]

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

Authorized individual:	President
Source Address:	1406 East 18th Street, Muncie, Indiana 47302
Mailing Address:	P.O. Box 2328, Muncie, Indiana 47302
General Source Phone:	(765) -288-2611
SIC Code:	3365, 3321
County Location:	Delaware
Source Location Status:	Nonattainment for ozone under the 8-hour standard Attainment for all other criteria pollutants
Source Status:	Federally Enforceable State Operating Permit (FESOP) Minor Source, under PSD and Emission Offset Rules; Minor Source, Section 112 of the Clean Air Act

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-8-3(c)(3)]

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

Iron Foundry

(a) One (1) charge handling operation, known as EU1, installed in 1992, capacity: 0.45 tons of gray iron per hour.

(b) Two (2) electric melting furnaces, known as the 1,000 pound and the 500 pound furnaces, known as EU2, installed in 1992, throughput capacity: 0.45 tons of gray iron per hour total limited by single power supply.

(c) One (1) magnesium treatment of ductile iron operation, known as EU3, installed in 1992, capacity: 0.09 tons of iron per hour.

(d) One (1) pouring/casting operation, known as EU4, installed in 1992, capacity: 0.45 tons of iron per hour.

(e) One (1) casting cooling operation, known as EU5, installed in 1992, capacity: 0.45 tons of iron castings per hour.

(f) One (1) shakeout operation (physically located in the aluminum foundry), known as EU6, installed in 1992, capacity: 0.45 tons of iron castings per hour.

Note exhaust fans #1, #2 and #3 are located above the pouring lines and furnaces in the Iron Foundry.

Aluminum Foundry

(g) Six (6) electric melting furnaces, consisting of five (5) (2,300-pound furnaces) and one (1) (700 pound furnace), collectively known as EU7, with three (3) of the 2,300-pound furnaces and the one (1) 700 pound furnace installed in 1992, and two (2) of the 2,300-pound furnaces installed in June 2003, throughput capacity: 1.39 tons of aluminum per hour for the five (5) (2,300 pound furnaces) and 0.23 tons of aluminum per hour for the one (1) (700 pound furnace), total throughput capacity: 1.62 tons of aluminum per hour.

(h) One (1) natural gas-fired melting furnace, (300 pound furnace) known as EU8, rated at 1.0 million British thermal units per hour, installed in 1980, capacity: 0.09 tons of aluminum per hour.

(i) One (1) magnesium treatment in the aluminum foundry, known as EU9, installed in 1992, capacity: 1.45 tons of magnesium per hour.

(j) One (1) pouring/casting operation, known as EU10, installed in 1980, capacity: 1.71 tons of aluminum per hour.

(k) One (1) casting cooling operation, known as EU11, installed in 1980, capacity: 1.71 tons of aluminum per hour.

(l) One (1) shakeout operation, known as EU12, installed in 1980, capacity: 1.71 tons of aluminum per hour.

Note exhaust fans #5 through #8 are located above or near the cooling lines and the 700 Lb and two (2) 2,300 Lb furnaces in the Aluminum Foundry.

Sand Handling Operations

(m) One (1) mechanical sand reclamation unit (located in the aluminum foundry and used for both foundries), known as EU13, installed in 1991, capacity: 1.5 tons of sand per hour.

(n) One (1) thermal sand reclamation unit (located in the aluminum foundry and used for both foundries), known as EU17, equipped with two (2) natural gas-fired burners, rated at 1.0 million British thermal units per hour each, equipped with a baghouse, installed in 1998, exhausted through Stack 12, capacity: 1 ton of sand per hour.

(o) One (1) Strong Scott sand mixer (located in the iron foundry and used for both foundries), known as EU18, utilizing a phenolic urethane nobake binder system, installed in 1980, capacity: 6.0 tons of sand per hour.

(p) One (1) Kloster sand mixer (located in the aluminum foundry and used for both foundries), known as EU19, utilizing a phenolic urethane nobake binder system, installed in 1994, capacity: 9.0 tons of sand per hour.

(q) One (1) Palmer core mixer #1 (located in the aluminum foundry and used for both foundries), known as EU20, utilizing a phenolic urethane nobake binder system, installed in 1994, capacity: 6.0 tons of sand per hour.

(r) One (1) Palmer core mixer #2 (located in the aluminum foundry and used for both foundries), known as EU21, utilizing an acrylic-epoxy cold box binder system, installed in 1998, capacity: 6.0 tons of sand per hour.

Cleaning/Finishing Operations

(s) One (1) GOFF steel shot blast machine (located in the aluminum foundry and used for both foundries), known as EU14, equipped with a baghouse, installed in 1993, exhausted through Stack 4, capacity: 1.096 tons of aluminum or iron castings per hour.

(t) One (1) small aluminum shot blast machine (located in the aluminum foundry and used for both foundries), known as EU15, equipped with a Viking baghouse, installed in 1993, exhausted inside the building, capacity: 0.16 tons of aluminum or iron castings per hour.

(u) One (1) sand blaster machine (located in the aluminum foundry and used for both foundries), known as EU16, equipped with a Blast-It-All baghouse, installed in 1980, exhausted inside the building, capacity: 0.16 tons of aluminum or iron castings per hour.

Core and Mold Making Operations

(v) U-180 core making operations used for both foundries, identified as EU24, including the following:

(1) One (1) U-180 core machine, utilizing a shell binder system, installed in 1998, capacity: 0.045 tons of cores per hour.

(2) One (1) U-180 core machine, utilizing a shell binder system, installed in January 2004, capacity: 0.045 tons of cores per hour.

(3) Two (2) U-180 core machines, each utilizing a shell binder system, to be installed in 2005, and each with maximum capacity of 0.045 tons of cores per hour.
Note: The above two (2) core machines, on-site, will be refurbished and are not currently operating.

(w) One (1) CB-22 core machine (located in the aluminum foundry and used for both foundries), known as EU22, equipped with a caustic soda scrubber (does not have to be operated at all times), installed in 1998, capacity: 0.5 tons of cores per hour.

(x) One (1) Dependable 420 core machine (located in the aluminum foundry and used for both foundries), known as EU23, equipped with a caustic soda scrubber (does not have to be operated at all times), installed in 1998, capacity: 0.5 tons of cores per hour.

Additional Operations

(y) One (1) surface coating spray application process (in the mold and core making areas), known as EU26, installed in 1980, capacity: 8,637 pounds of coating materials per year.

(z) Fugitive outdoor waste sand storage and handling, known as EUF1, capacity 20 tons of waste foundry sand.

A.3 Insignificant Activities [326 IAC 2-7-1(21)] [326 IAC 2-8-3(c)(3)(I)]

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

(a) A petroleum fuel, other than gasoline, dispensing facility, having a storage capacity of less than or equal to 10,500 gallons, and dispensing less than or equal to 230,000 gallons per month.

(b) The following VOC and HAP storage containers: storage tanks with capacity less than or equal to 1,000 gallons and annual throughputs less than 12,000 gallons; vessels storing lubricating oil, hydraulic oils, machining oils, and machining fluids.

(c) Refractory storage not requiring air pollution control equipment.

(d) Equipment used exclusively for the following: Packaging lubricants and greases, filling drums, pails or other packaging containers with lubricating oils, waxes, and greases.

(e) Application of oils, greases lubricants or other nonvolatile materials applied as temporary protective coatings.

(f) Machining where an aqueous cutting coolant continuously floods the machining interface.

(g) Degreasing operations that do not exceed 145 gallons per 12 months, except if subject to 326 IAC 20-6. Parts washer (covered cold cleaner), capacity: 40 gallon [326 IAC 8-3]

(h) Cleaners and solvents characterized as follows: having a vapor pressure equal to or less than 2 kiloPascals; 15 millimeters of mercury; or 0.3 pounds per square inch measured at 38EC (100EF) or; having a vapor pressure equal to or less than 0.7 kiloPascals; 5 millimeters of mercury; or 0.1 pounds per square inch measured at 20EC (68EF); the use of which for all cleaners and solvents combined does not exceed 145 gallons per 12 months.

(i) The following equipment related to manufacturing activities not resulting in the emission of HAPs: brazing equipment, cutting torches, soldering equipment, and welding equipment.

(j) Closed loop heating and cooling systems.

(k) Any operation using aqueous solutions containing less than 1 percent by weight of VOCs excluding HAPs.

(l) Water based adhesives that are less than or equal to 5 percent by volume of VOCs excluding HAPs.

(m) Replacement or repair of electrostatic precipitators, bags in baghouses and filters in other air filtration equipment.

(n) Paved and unpaved roads and parking lots with public access.

(o) Grinding and machining operations controller with fabric filters, scrubbers, mist collectors, wet collectors and electrostatic precipitators with a design grain loading of less than or equal to 0.03 grains per actual cubic foot and a gas flow rate less than or equal to 4,000 actual cubic feet per minute, including the following: deburring; buffing; polishing; abrasive blasting; pneumatic conveying; and woodworking operations.

(p) Filter or coalescer media changeout.

(q) Mold release agents using low volatile products (vapor pressure less than or equal to 2 kiloPascals measured at 38EC).

(r) A laboratory as defined in 326 IAC 2-7-1(21)(D).

(s) Other activities with insignificant thresholds:

(1) Two (2) electric heat treating machines.

(2) Three (3) sand storage silos, equipped with bin-top filler banks exhausted through Stacks #9, #10 and #11, capacity: 10, 40 and 40 tons, respectively, throughput 1,462.25 tons of sand per year total

(3) Woodworking activities in the pattern shop (sawing, cutting, routing and planing)

(t) Experimental sand and shot blasters for research and development.

(u) One (1) electric heat treat furnace with no emissions.

A.4 FESOP Applicability [326 IAC 2-8-2]

This stationary source, otherwise required to have a Part 70 permit as described in 326 IAC 2-7-2(a), has applied to the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) for a Federally Enforceable State Operating Permit (FESOP).

SECTION D.1 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-8-4(10)]:

Iron Foundry

(a) One (1) charge handling operation, known as EU1, installed in 1992, capacity: 0.45 tons of gray iron per hour.

(b) Two (2) electric melting furnaces, known as the 1,000 pound and the 500 pound furnaces, known as EU2, installed in 1992, throughput capacity: 0.45 tons of gray iron per hour total limited by single power supply.

(c) One (1) magnesium treatment of ductile iron operation, known as EU3, installed in 1992, capacity: 0.09 tons of iron per hour.

(d) One (1) pouring/casting operation, known as EU4, installed in 1992, capacity: 0.45 tons of iron per hour.

(e) One (1) casting cooling operation, known as EU5, installed in 1992, capacity: 0.45 tons of iron castings per hour.

(f) One (1) shakeout operation (physically located in the aluminum foundry), known as EU6, installed in 1992, capacity: 0.45 tons of iron castings per hour.

Note
Exhaust fans #1, #2 and #3 are located above the pouring lines and furnaces in the Iron Foundry.

(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 2-8-4(1)]

D.1.1 PM and PM_{10} [326 IAC 2-8-4][326 IAC 2-2]

(a) Pursuant to 326 IAC 2-8-4, and to render the requirements of 326 IAC 2-2 not applicable, the throughput for the iron foundry shall be limited as follows:

(1) The total throughput of iron to the iron foundry, including the iron charge handling operation (EU1), the two (2) electric melting furnaces (EU2), the iron pouring/casting operation (EU4), the iron casting cooling operation (EU5), and the iron shakeout operation (EU6) shall not exceed 1,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month;

(2) The throughput of iron to the iron magnesium treatment operation (EU3) shall not exceed 200 tons per twelve (12) consecutive month period, with compliance determined at the end of each month;

(b) The PM emissions for the iron foundry shall be limited as follows:

(1) PM emissions from the iron charge handling operation (EU1) shall not exceed 0.60 pound per ton of iron throughput;

(2) Total PM emissions from the two (2) electric melting furnaces (EU2) shall not exceed 0.90 pound per ton of combined iron throughput;

(3) Total PM emissions from the iron pouring/casting operation (EU4) and the iron casting cooling operation (EU5) shall not exceed 4.2 pounds per ton of iron throughput;

(4) PM emissions from the iron shakeout operation (EU6) shall not exceed 3.2 pounds per ton of iron throughput;

(5) PM emissions from the iron magnesium treatment operation (EU3) shall not exceed 1.80 pounds per ton of iron throughput.

These emission limits will render the requirements of 326 IAC 2-2 not applicable.

(c) Pursuant to 326 IAC 2-8-4, the PM10 emissions for the iron foundry shall be limited as follows:

(1) PM10 emissions from the iron charge handling operation (EU1) shall not exceed 0.36 pound per ton of iron throughput;

(2) Total PM10 emissions from the two (2) electric melting furnaces (EU2) shall not exceed 0.86 pound per ton of combined iron throughput;

(3) Total PM10 emissions from the iron pouring/casting operation (EU4) and the iron casting cooling operation (EU5) shall not exceed 2.06 pound per ton of iron throughput;

(4) PM10 emissions from the iron shakeout operation (EU6) shall not exceed 2.24 pounds per ton of iron throughput;

(5) PM10 emissions from the iron magnesium treatment operation (EU3) shall not exceed 1.80 pounds per ton of iron throughput.

Compliance with these PM10 emission limits will satisfy 326 IAC 2-8-4. Therefore, the Part 70 rules (326 IAC 2-7) and 326 IAC 2-2 do not apply.

D.1.2 Particulate Matter (PM) [326 IAC 6-3-2]

(a) Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the allowable particulate emission rates from the facilities listed in this section shall not exceed the stated particulate emission rates listed in the following table:

Emission Unit	**Process Weight Rate (tons per hour)**	**Allowable Particulate Emission Rate (pounds per hour)**
Iron Foundry		
Charge Handling EU1	0.45	2.40
Two (2) Electric Melting Furnaces (EU2)	0.45 total	2.40 total
Magnesium Treatment (EU3)	0.09	0.817
Pouring/Casting (EU4) & Casting Cooling (EU5)	1.038	4.20
Shakeout (EU6)	0.519	2.64

(b) The pounds per hour limitations were calculated using 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

Record Keeping and Reporting Requirement [326 IAC 2-8-4(3)] [326 IAC 2-8-16]

D.1.3 Record Keeping Requirements

(a) To document compliance with Condition D.1.1, the Permittee shall maintain records of iron throughput as applicable for each of the facilities included in Condition D.1.1.

(b) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.1.4 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.1.1 shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by an “authorized individual” as defined by 326 IAC 2-1.1-1(1).

SECTION D.2 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-8-4(10)]:

Aluminum Foundry

(g) Six (6) electric melting furnaces, consisting of five (5) (2,300-pound furnaces) and one (1) (700 pound furnace), collectively known as EU7, with three (3) of the 2,300-pound furnaces and the one (1) 700 pound furnace installed in 1992, and two (2) of the 2,300-pound furnaces installed in June 2003, throughput capacity: 1.39 tons of aluminum per hour for the five (5) (2,300 pound furnaces) and 0.23 tons of aluminum per hour for the one (1) (700 pound furnace), total throughput capacity: 1.62 tons of aluminum per hour.

(h) One (1) natural gas-fired melting furnace, (300 pound furnace) known as EU8, rated at 1.0 million British thermal units per hour, installed in 1980, capacity: 0.09 tons of aluminum per hour.

(i) One (1) magnesium treatment in the aluminum foundry, known as EU9, installed in 1992, capacity: 1.45 tons of magnesium per hour.

(j) One (1) pouring/casting operation, known as EU10, installed in 1980, capacity: 1.71 tons of aluminum per hour.

(k) One (1) casting cooling operation, known as EU11, installed in 1980, capacity: 1.71 tons of aluminum per hour.

(l) One (1) shakeout operation, known as EU12, installed in 1980, capacity: 1.71 tons of aluminum per hour.

Note exhaust fans #5 through #8 are located above or near the cooling lines and the 700 Lb and two (2) 2,300 Lb furnaces in the Aluminum Foundry.

(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 2-8-4(1)]

D.2.1 PM and PM_{10} [326 IAC 2-8-4][326 IAC 2-2]

(a) Pursuant to 326 IAC 2-8-4, and to render the requirements of 326 IAC 2-2 not applicable, the throughput for the aluminum foundry shall be limited as follows:

(1) The total throughput of aluminum to the aluminum foundry, including the five (5) 2,300 lb melting furnaces and one (1) 700 lb melting furnace (EU7), the one (1) 300 lb melting furnace (EU8), the aluminum pouring/casting operation (EU10), the aluminum casting cooling operation (EU11), and the aluminum shakeout operation (EU12), shall not exceed 12,042 tons per twelve (12) consecutive month period, with compliance determined at the end of each month;

(2) The throughput of aluminum to the aluminum magnesium treatment operation (EU9) shall not exceed 10,236 tons per twelve (12) consecutive month period, with compliance determined at the end of each month;

(b) The PM emissions for the aluminum foundry shall be limited as follows:

(1) Total PM emissions from the five (5) 2,300 lb melting furnaces and one (1) 700 lb melting furnace (EU7), and the one (1) 300 lb melting furnace (EU8) shall not exceed 1.90 pounds per ton of aluminum throughput;

(2) Total PM emissions from the aluminum pouring/casting operation (EU10) and the aluminum casting cooling operation (EU11) shall not exceed 4.2 pounds per ton of aluminum throughput;

(3) PM emissions from the aluminum shakeout operation (EU12) shall not exceed 3.2 pounds per ton of iron throughput;

(4) PM emissions from the aluminum magnesium treatment operation (EU9) shall not exceed 1.80 pounds per ton of aluminum throughput;

These emission limits will render the requirements of 326 IAC 2-2 not applicable.

(c) Pursuant to 326 IAC 2-8-4, the PM10 emissions for the aluminum foundry shall be limited as follows:

(1) Total PM10 emissions from the five (5) 2,300 lb melting furnaces and one (1) 700 lb melting furnace (EU7), and the one (1) 300 lb melting furnace (EU8) shall not exceed 1.70 pounds per ton of aluminum throughput;

(2) Total PM10 emissions from the aluminum pouring/casting operation (EU10) and the aluminum casting cooling operation (EU11) shall not exceed 2.06 pound per ton of aluminum throughput;

(3) PM10 emissions from the aluminum shakeout operation (EU12) shall not exceed 2.24 pounds per ton of iron throughput;

(4) PM10 emissions from the aluminum magnesium treatment operation (EU9) shall not exceed 1.80 pounds per ton of aluminum throughput.

Compliance with these PM10 emission limits will satisfy 326 IAC 2-8-4. Therefore, the Part 70 rules (326 IAC 2-7) and 326 IAC 2-2 do not apply.

D.2.2 Particulate Matter (PM) [326 IAC 6-3-2]

(a) Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the allowable particulate emission rates from the facilities listed in this section shall not exceed the stated particulate emission rates listed in the following table:

Emission Unit	**Process Weight Rate (tons per hour)**	**Allowable Particulate Emission Rate (pounds per hour)**
Aluminum Foundry		
Five (5) 2,300lb Melting Furnace (EU7)	1.39 (0.278 each)	5.11 (1.02 each)
700 lb Melting Furnace (EU7)	0.23	1.53
300 lb Melting Furnace (EU8)	0.09	0.82
Magnesium Treatment (EU9)	1.45	5.26
Pouring/Casting (EU10) & Casting Cooling (EU11)	3.972	10.33
Shakeout (EU12)	1.986	6.49

D.2.3 Material Usage [40 CFR 63, Subpart RRR]

The Permittee shall only melt clean charge, customer returns, or internal scrap in the aluminum foundry as defined under 40 CFR 63.1503. Therefore, the requirements of 40 CFR 63, Subpart RRR do not apply.

Record Keeping and Reporting Requirement [326 IAC 2-8-4(3)] [326 IAC 2-8-16]

D.2.4 Record Keeping Requirements

(a) To document compliance with Condition D.2.1, the Permittee shall maintain records of aluminum throughput as applicable for each of the facilities included in Condition D.2.1.

(b) To document compliance with Condition D.2.3, the Permittee shall maintain records of determinations of the type, quality and origin of all materials melted at this source required under Condition D.2.3.

(c) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.2.5 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.2.1 shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by an “authorized individual” as defined by 326 IAC 2-1.1-1(1).

SECTION D.3 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-8-4(10)]:

Sand Handling Operations

(m) One (1) mechanical sand reclamation unit (located in the aluminum foundry and used for both foundries), known as EU13, installed in 1991, capacity: 1.5 tons of sand per hour.

(n) One (1) thermal sand reclamation unit (located in the aluminum foundry and used for both foundries), known as EU17, equipped with two (2) natural gas-fired burners, rated at 1.0 million British thermal units per hour each, equipped with a baghouse, installed in 1998, exhausted through Stack 12, capacity: 1 ton of sand per hour.

(o) One (1) Strong Scott sand mixer (located in the iron foundry and used for both foundries), known as EU18, utilizing a phenolic urethane nobake binder system, installed in 1980, capacity: 6.0 tons of sand per hour.

(p) One (1) Kloster sand mixer (located in the aluminum foundry and used for both foundries), known as EU19, utilizing a phenolic urethane nobake binder system, installed in 1994, capacity: 9.0 tons of sand per hour.

(q) One (1) Palmer core mixer #1 (located in the aluminum foundry and used for both foundries), known as EU20, utilizing a phenolic urethane nobake binder system, installed in 1994, capacity: 6.0 tons of sand per hour.

(r) One (1) Palmer core mixer #2 (located in the aluminum foundry and used for both foundries), known as EU21, utilizing an acrylic-epoxy cold box binder system, installed in 1998, capacity: 6.0 tons of sand per hour.

(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 2-8-4(1)]

D.3.1 PM and PM_{10} [326 IAC 2-8-4][326 IAC 2-2]

(a) Pursuant to 326 IAC 2-8-4, and to render the requirements of 326 IAC 2-2 not applicable, the throughput for the sand handling operations shall be limited as follows:

(1) The combined throughput of sand to the Kloster Sand Mixer (EU19), the Palmer Core Mixer #1 (EU20), the Palmer Core Mixer #2 (EU21), and the Strong Scott Sand Mixer (EU18) shall not exceed 9,675 tons per twelve (12) consecutive month period, with compliance determined at the end of each month;

(2) The throughput of sand to the mechanical sand reclamation unit (EU13) shall not exceed 9,675 tons per twelve (12) consecutive month period, with compliance determined at the end of each month;

(3) The throughput of sand to the thermal sand reclamation unit (EU17) shall not exceed 9,675 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(b) The PM emissions for the sand handling operations shall be limited as follows:

(1) Total PM emissions from the Kloster Sand Mixer (EU19), the Palmer Core Mixer #1 (EU20), the Palmer Core Mixer #2 (EU21), and the Strong Scott Sand Mixer (EU18) shall not exceed 0.36 pounds per ton of sand throughput;

(2) PM emissions from the mechanical sand reclamation unit (EU13) shall not exceed 3.6 pounds per ton of sand throughput;

(3) PM emissions from the baghouse controlling the thermal sand reclamation unit (EU17) shall not exceed 0.10 pound per ton of sand throughput;

These emission limits will render the requirements of 326 IAC 2-2 not applicable.

(c) Pursuant to 326 IAC 2-8-4, the PM10 emissions for the sand handling operations shall be limited as follows:

(1) Total PM10 emissions from the Kloster Sand Mixer (EU19), the Palmer Core Mixer #1 (EU20), the Palmer Core Mixer #2 (EU21), and the Strong Scott Sand Mixer (EU18) shall not exceed 0.54 pounds per ton of sand throughput;

(2) PM10 emissions from the mechanical sand reclamation unit (EU13) shall not exceed 0.54 pounds per ton of sand throughput;

(3) PM10 emissions from the baghouse controlling the thermal sand reclamation unit (EU17) shall not exceed 4.926 pounds per ton of sand throughput;

Compliance with these PM10 emission limits will satisfy 326 IAC 2-8-4. Therefore, the Part 70 rules (326 IAC 2-7) and 326 IAC 2-2 do not apply.

D.3.2 Particulate Matter (PM) [326 IAC 6-3-2]

(a) Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the allowable particulate emission rates from the facilities listed in this section shall not exceed the stated particulate emission rates listed in the following table:

Emission Unit	**Process Weight Rate (tons per hour)**	**Allowable Particulate Emission Rate (pounds per hour)**
Mechanical Sand Reclamation Unit (EU13)	1.5	5.38
Thermal Sand Reclamation Unit (EU17)	1.00	4.10
Strong Scott Mixer (EU18)	6.00	13.6
Closter Mixer (EU19)	9.00	17.9
Palmer Core Mixer #1 (EU20)	6.0	13.6
Palmer Core Mixer #2 (EU21)	6.0	13.6

D.3.3 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for the thermal sand reclamation unit (EU17), the two (2) sand mixers and the two core (2) mixers, known as EU18 through EU21, and their control devices.

Compliance Determination Requirements

D.3.4 Particulate Control

(a) In order to comply with conditions D.3.1 and D.3.2, the baghouse for particulate control shall be in operation and control emissions from the thermal sand reclamation unit (EU17) at all times that the thermal sand reclamation unit (EU17) is in operation.

(b) In order to comply with condition D.3.1, the inherent moisture and binder resins shall be used with the Strong Scott and Kloster sand mixers and the two (2) Palmer core mixers at all times that the mixers are in operation.

Compliance Monitoring Requirements [326 IAC 2-8-4] [326 IAC 2-8-5(a)(1)]

D.3.5 Visible Emissions Notations

(a) Visible emission notations of the four (4) mixers (EU18 - EU21) and the thermal sand reclamation unit (EU17), respectively, 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) The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed. Failure to take response steps in accordance with Section C - Compliance Response Plan – Preparation, Implementation, Records and Reports shall be considered a deviation from this permit.

D.3.6 Parametric Monitoring

The Permittee shall record the total static pressure drop across the baghouse used in conjunction with the thermal sand reclamation unit (EU17) at least once per day when the thermal sand reclamation unit is in operation when venting to the atmosphere. Unless operated under conditions for which the Compliance Response Plan specifies otherwise, the pressure drop across the baghouse shall be maintained within the range of 2.0 and 8.0 inches of water or a range established during the latest stack test. The Compliance Response Plan for these units shall contain trouble-shooting contingency and response steps for when the pressure reading is outside of the above mentioned range for any one reading.

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

D.3.7 Baghouse Inspections

An inspection shall be performed each calender quarter of all bags controlling the thermal sand reclamation unit when venting to the atmosphere. A baghouse inspection shall be performed within three months of redirecting vents to the atmosphere and every three months thereafter. Inspections are optional when venting indoors. All defective bags shall be replaced.

D.3.8 Broken or Failed Bag Detection

In the event that bag failure has been observed:

(a) For multi-compartment units, the affected compartments will be shut down immediately until the failed units have been repaired or replaced. Within eight (8) business hours of the determination of failure, response steps according to the timetable described in the Compliance Response Plan shall be initiated. For any failure with corresponding response steps and timetable not described in the Compliance Response Plan, response steps shall be devised within eight (8) business hours of discovery of the failure and shall include a timetable for completion. Failure to take response steps in accordance with Section C - Compliance Response Plan -Preparation, Implementation, Records, and Reports, shall be considered a deviation from this permit. If operations continue after bag failure is observed and it will be 10 days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

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

Record Keeping and Reporting Requirement [326 IAC 2-8-4(3)] [326 IAC 2-8-16]

D.3.9 Record Keeping Requirements

(a) To document compliance with Condition D.3.5, the Permittee shall maintain records of daily visible emission notations of the four (4) mixers (EU18 - EU21) and the thermal sand reclamation unit (EU17), respectively.

(b) To document compliance with Condition D.3.6, the Permittee shall maintain the following:

(1) Daily records of the total static pressure drop during normal operation when venting to the atmosphere.

(2) Documentation of the dates vents are redirected.

(c) To document compliance with Condition D.3.7, the Permittee shall maintain records of the results of the inspections required under Condition D.3.7 and the dates the vents are redirected.

(d) To document compliance with Condition D.3.1(a)(1), the Permittee shall maintain records of combined sand throughput to the Kloster Sand Mixer (EU19), the Palmer Core Mixer #1 (EU20), the Palmer Core Mixer #2 (EU21), and the Strong Scott Sand Mixer (EU18) on a monthly basis.

(e) To document compliance with Condition D.3.1(a)(2), the Permittee shall maintain records of the total sand throughput to the mechanical sand reclamation unit (EU13) on a monthly basis.

(f) To document compliance with Condition D.3.1(a)(3), the Permittee shall maintain records of the total sand throughput to the thermal sand reclamation unit (EU17) on a monthly basis.

(g) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.3.10 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.3.1 shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by an “authorized individual” as defined by 326 IAC 2-1.1-1(1).

SECTION D.4 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-8-4(10)]:

Cleaning/Finishing Operations

(s) One (1) GOFF steel shot blast machine (located in the aluminum foundry and used for both foundries), known as EU14, equipped with a baghouse, installed in 1993, exhausted through Stack 4, capacity: 1.096 tons of aluminum or iron castings per hour.

(t) One (1) small aluminum shot blast machine (located in the aluminum foundry and used for both foundries), known as EU15, equipped with a Viking baghouse, installed in 1993, exhausted inside the building, capacity: 0.16 tons of aluminum or iron castings per hour.

(u) One (1) sand blaster machine (located in the aluminum foundry and used for both foundries), known as EU16, equipped with a Blast-It-All baghouse, installed in 1980, exhausted inside the building, capacity: 0.16 tons of aluminum or iron castings per hour.

Core and Mold Making Operations

(v) U-180 core making operations used for both foundries, identified as EU24, including the following:

(1) One (1) U-180 core machine, utilizing a shell binder system, installed in 1998, capacity: 0.045 tons of cores per hour.

(2) One (1) U-180 core machine, utilizing a shell binder system, installed in January 2004, capacity: 0.045 tons of cores per hour.

(3) Two (2) U-180 core machines, each utilizing a shell binder system, to be installed in 2005, and each with maximum capacity of 0.045 tons of cores per hour.

Note: The above two (2) core machines, on-site, will be refurbished and are not currently operating.

(w) One (1) CB-22 core machine (located in the aluminum foundry and used for both foundries), known as EU22, equipped with a caustic soda scrubber (does not have to be operated at all times), installed in 1998, capacity: 0.5 tons of cores per hour.

(x) One (1) Dependable 420 core machine (located in the aluminum foundry and used for both foundries), known as EU23, equipped with a caustic soda scrubber (does not have to be operated at all times), installed in 1998, capacity: 0.5 tons of cores per hour.

Additional Operations

(y) One (1) surface coating spray application process (in the mold and core making areas), known as EU26, installed in 1980, capacity: 8,637 pounds of coating materials per year.

(z) Fugitive outdoor waste sand storage and handling, known as EUF1, capacity 20 tons of waste foundry sand.

(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 2-8-4(1)]

D.4.1 PM and PM_{10} [326 IAC 2-8-4][326 IAC 2-2]

(a) Pursuant to 326 IAC 2-8-4, and to render the requirements of 326 IAC 2-2 not applicable, the throughput for the cleaning/finishing operations shall be limited as follows:

(1) The throughput of metal castings to the GOFF shot blast machine (EU14) shall not exceed 7,825 tons per twelve (12) consecutive month period, with compliance determined at the end of each month;

(2) The throughput of metal castings to the small shot blast machine (EU15) shall not exceed 1,174 tons per twelve (12) consecutive month period, with compliance determined at the end of each month;

(3) The throughput of metal castings to the sand blaster machine (EU16) shall not exceed 1,174 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(b) The PM emissions for the cleaning/finishing operations shall be limited as follows:

(1) The PM emissions from the baghouse controlling the GOFF shot blast machine (EU14) shall not exceed 0.85 pound per ton of metal castings throughput;

(2) The PM emissions from the baghouse controlling the small shot blast machine (EU15) shall not exceed 0.85 pound per ton of metal castings throughput;

(3) The PM emissions from the baghouse controlling the sand blaster machine (EU16) shall not exceed 0.85 pound per ton of metal castings throughput.

These emission limits will render the requirements of 326 IAC 2-2 not applicable.

(c) Pursuant to 326 IAC 2-8-4, the PM10 emissions for the sand handling operations shall be limited as follows:

(1) The PM10 emissions from the baghouse controlling the GOFF shot blast machine (EU14) shall not exceed 1.7 pounds per ton of metal castings throughput;

(2) The PM10 emissions from the baghouse controlling the small shot blast machine (EU15) shall not exceed 1.7 pounds per ton of metal castings throughput;

(3) The PM10 emissions from the baghouse controlling the sand blaster machine (EU16) shall not exceed 1.7 pounds per ton of metal castings throughput.

Compliance with these PM10 emission limits will satisfy 326 IAC 2-8-4. Therefore, the Part 70 rules (326 IAC 2-7) and 326 IAC 2-2 do not apply.

D.4.2 Particulate Matter (PM) [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the allowable particulate emission rates from the facilities listed in this section shall not exceed the stated particulate emission rates listed in the following table:

Emission Unit	Process Weight Rate (tons per hour)	Allowable Particulate Emission Rate (pounds per hour)
GOFF Shot Blaster (EU14)	1.096	4.36
Small Aluminum Shot Blaster (EU15)	0.16	1.2
Sand Blaster (EU16)	0.16	1.2

D.4.3 Volatile Organic Compounds [326 IAC 8-1-6]

Any change or modification which may increase the potential emissions of VOC to twenty-five (25) tons per year from the core machines (EU22 - EU24), the four (4) U-180 core machines, and/or pattern parting booth and the core release application area (EU26) must be approved by the Office of Air Quality before such change may occur.

D.4.4 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for the two (2) shot blaster machines (EU14 and EU15) and the one (1) sand blaster machine (EU16) and their control devices.

Compliance Determination Requirements

D.4.5 Particulate Control

In order to comply with conditions D.4.1 and D.4.2, the baghouses for particulate control shall be in operation and control emissions from the two (2) shot blaster machines (EU14 and EU15) and the one (1) sand blaster machine (EU16) at all times that the two (2) shot blaster machines (EU14 and EU15) and the one (1) sand blaster machine (EU16) are in operation.

Compliance Monitoring Requirements [326 IAC 2-8-4] [326 IAC 2-8-5(a)(1)]

D.4.6 Visible Emissions Notations

(a) Visible emission notations of the stack exhausts 4 and 12 for the GOFF shot blaster (EU14) 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) The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed. Failure to take response steps in accordance with Section C - Compliance Response Plan – Preparation, Implementation, Records and Reports shall be considered a deviation from this permit.

D.4.7 Parametric Monitoring

The Permittee shall record the total static pressure drop across the baghouse used in conjunction with the GOFF shot blaster (EU14) at least once per day when the GOFF shot blaster is in operation when venting to the atmosphere. Unless operated under conditions for which the Compliance Response Plan specifies otherwise, the pressure drop across the baghouse shall be maintained within the range of 2.0 and 8.0 inches of water or a range established during the latest stack test. The Compliance Response Plan for these units shall contain trouble-shooting contingency and response steps for when the pressure reading is outside of the above mentioned range for any one reading.

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

D.4.8 Baghouse Inspections

An inspection shall be performed each calender quarter of all bags controlling the blasting operations when venting to the atmosphere. A baghouse inspection shall be performed within three months of redirecting vents to the atmosphere and every three months thereafter. Inspections are optional when venting indoors. All defective bags shall be replaced.

D.4.9 Broken or Failed Bag Detection

In the event that bag failure has been observed:

(a) For multi-compartment units, the affected compartments will be shut down immediately until the failed units have been repaired or replaced. Within eight (8) business hours of the determination of failure, response steps according to the timetable described in the Compliance Response Plan shall be initiated. For any failure with corresponding response steps and timetable not described in the Compliance Response Plan, response steps shall be devised within eight (8) business hours of discovery of the failure and shall include a timetable for completion. Failure to take response steps in accordance with Section C - Compliance Response Plan -Preparation, Implementation, Records, and Reports, shall be considered a deviation from this permit. If operations continue after bag failure is observed and it will be 10 days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

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

Record Keeping and Reporting Requirement [326 IAC 2-8-4(3)] [326 IAC 2-8-16]

D.4.10 Record Keeping Requirements

(a) To document compliance with Condition D.4.6, the Permittee shall maintain records of daily visible emission notations of the stack exhausts 4 and 12 for the GOFF shot blaster (EU14).

(b) To document compliance with Condition D.4.7, the Permittee shall maintain the following:

(1) Daily records of the total static pressure drop during normal operation when venting to the atmosphere.

(2) Documentation of the dates vents are redirected.

(c) To document compliance with Condition D.4.8, the Permittee shall maintain records of the results of the inspections required under Condition D.4.8 and the dates the vents are redirected.

(d) To document compliance with Condition D.4.1(a), the Permittee shall maintain records of the throughput of metal castings to each of the GOFF shot blast machine (EU14), the small shot blast machine (EU15) and the sand blaster machine on a monthly basis.

(e) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.4.11 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.4.1 shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by an “authorized individual” as defined by 326 IAC 2-1.1-1(1).

SECTION D.5 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-8-4(10)]: Insignificant Activities

(g) Degreasing operations that do not exceed 145 gallons per 12 months, except if subject to 326 IAC 20-6. Parts washer (covered cold cleaner), capacity: 40 gallon [326 IAC 8-3]

(i) The following equipment related to manufacturing activities not resulting in the emission of HAPs: brazing equipment, cutting torches, soldering equipment, and welding equipment.

(o) Grinding and machining operations controller with fabric filters, scrubbers, mist collectors, wet collectors and electrostatic precipitators with a design grain loading of less than or equal to 0.03 grains per actual cubic foot and a gas flow rate less than or equal to 4,000 actual cubic feet per minute, including the following: deburring; buffing; polishing; abrasive blasting; pneumatic conveying; and woodworking operations.

(s) Other activities with insignificant thresholds:

(2) Three (3) sand storage silos, equipped with bin-top filler banks exhausted through Stacks #9, #10 and #11, capacity: 10, 40 and 40 tons, respectively, throughput 1,462.25 tons of sand per year total.

(3) Woodworking activities in the pattern shop (sawing, cutting, routing and planing)

(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 2-8-4(1)]

D.5.1 Volatile Organic Compounds (VOC)

Pursuant to 326 IAC 8-3-2 (Cold Cleaner Operations), the owner or operator shall:

(a) Equip the cleaner with a cover;

(b) Equip the cleaner with a facility for draining cleaned parts;

(c) Close the degreaser cover whenever parts are not being handled in the cleaner;

(d) Drain cleaned parts for at least fifteen (15) seconds or until dripping ceases;

(e) Provide a permanent, conspicuous label summarizing the operation requirements;

(f) Store waste solvent only in covered containers and not dispose of waste solvent or transfer it to another party, in such a manner that greater than twenty percent (20%) of the waste solvent (by weight) can evaporate into the atmosphere.

D.5.2 Volatile Organic Compounds (VOC)

(a) Pursuant to 326 IAC 8-3-5(a) (Cold Cleaner Degreaser Operation and Control), the owner or operator of a cold cleaner degreaser facility 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 (38EC) (one hundred degrees Fahrenheit (100EF));

(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 (38EC) (one hundred degrees Fahrenheit (100EF)), then the drainage facility must be internal such that articles are enclosed under the cover while draining. The drainage facility may be external for applications where an internal type cannot fit into the cleaning system.

(3) Provide a permanent, conspicuous label which lists the operating requirements outlined in subsection (b).

(4) The solvent spray, if used, must be a solid, fluid stream and shall be applied at a pressure which does not cause excessive splashing.

(5) Equip the degreaser with one (1) of the following control devices if the solvent volatility is greater than four and three-tenths (4.3) kiloPascals (thirty-two (32) millimeters of mercury or six-tenths (0.6) pounds per square inch) measured at thirty-eight degrees Celsius (38EC) (one hundred degrees Fahrenheit (100EF)), or if the solvent is heated to a temperature greater than forty-eight and nine-tenths degrees Celsius (48.9EC) (one hundred twenty degrees Fahrenheit (120EF)):

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

Pursuant to 326 IAC 6-3-2 (Process Operations), the allowable PM emission rate from the brazing equipment, cutting torches, soldering equipment, and welding equipment, grinding and machining operations, the three (3) sand storage silos and woodworking activities in the pattern shop shall not exceed allowable PM emission rate based on 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:

$E = 4.10^{P0.67}$

where E = rate of emission in pounds per hour; and
P = process weight rate in tons per hour

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

FESOP Quarterly Report

Source Name: Muncie Casting Corporation
Source Address: 1406 East 18th Street, Muncie, Indiana 47302
Mailing Address: P.O. Box 2328, Muncie, Indiana 47302
FESOP No.: F035-9977-00061
Facility: Iron charge handling (EU1), two (2) iron melt furnaces (EU2), iron magnesium treatment (EU3), iron pouring/casting (EU4), iron casting cooling (EU5), iron shakeout (EU6)
Parameter: Iron throughput to limit PM and PM10 emissions
Limit: The total throughput of iron to the iron foundry, including EU1, EU2, EU4, EU5, and EU6 shall not exceed 1,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month;

The throughput of iron to the iron magnesium treatment operation (EU3) shall not exceed 200 tons per twelve (12) consecutive month period, with compliance determined at the end of each month;

YEAR:_____

Month	Unit ID	Column 1	Column 2	Column 1 + Column 2
		Iron Throughput This Month (tons)	Iron Throughput Previous 11 Months (tons)	12 Month Total Iron Throughput (tons)
Month 1	EU1, EU2, EU4, EU5, EU6			
	EU3			
Month 2	EU1, EU2, EU4, EU5, EU6			
	EU3			
Month 3	EU1, EU2, EU4, EU5, EU6			
	EU3			

☐ No deviation occurred in this quarter.

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

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

Attach a signed certification to complete this report.

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

FESOP Quarterly Report

Source Name: Muncie Casting Corporation
Source Address: 1406 East 18th Street, Muncie, Indiana 47302
Mailing Address: P.O. Box 2328, Muncie, Indiana 47302
FESOP No.: F035-9977-00061
Facility: Five (5) 2300 lb and one (1) 700 lb melt furnaces (EU7), one (1) 300 lb melt furnace (EU8), aluminum magnesium treatment (EU9), aluminum pouring/casting (EU10), aluminum casting cooling (EU11), aluminum shakeout (EU12)
Parameter: Aluminum throughput to limit PM and PM10 emissions
Limit: The total throughput of aluminum to the aluminum foundry, including the five (5) 2,300 lb melting furnaces and one (1) 700 lb melting furnace (EU7), the one (1) 300 lb melting furnace (EU8), the aluminum pouring/casting operation (EU10), the aluminum casting cooling operation (EU11), and the aluminum shakeout operation (EU12), shall not exceed 12,042 tons per twelve (12) consecutive month period, with compliance determined at the end of each month;

The throughput of aluminum to the aluminum magnesium treatment operation (EU9) shall not exceed 10,236 tons per twelve (12) consecutive month period, with compliance determined at the end of each month;

YEAR:_____

Month	Unit ID	Column 1	Column 2	Column 1 + Column 2
		Aluminum Throughput This Month (tons)	Aluminum Throughput Previous 11 Months (tons)	12 Month Total Aluminum Throughput (tons)
Month 1	EU7, EU8, EU10, EU11, EU12			
	EU9			
Month 2	EU7, EU8, EU10, EU11, EU12			
	EU9			
Month 3	EU7, EU8, EU10, EU11, EU12			
	EU9			

☐ No deviation occurred in this quarter.

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

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

Attach a signed certification to complete this report.

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

FESOP Quarterly Report

Source Name: Muncie Casting Corporation
Source Address: 1406 East 18th Street, Muncie, Indiana 47302
Mailing Address: P.O. Box 2328, Muncie, Indiana 47302
FESOP No.: F035-9977-00061
Facility: Kloster Sand Mixer (EU19), Palmer Core Mixer #1 (EU20), Palmer Core Mixer #2 (EU21), Strong Scott Sand Mixer (EU18)
Parameter: Sand throughput to limit PM and PM10 emissions
Limit: The combined throughput of sand to EU18, EU19, EU20, and EU21 shall not exceed 9,675 tons per twelve (12) consecutive month period.

YEAR:_____

Month	Column 1	Column 2	Column 1 + Column 2
	Sand Throughput This Month (tons)	Sand Throughput Previous 11 Months (tons)	12 Month Total Sand Throughput (tons)
Month 1			
Month 2			
Month 3			

☐ No deviation occurred in this quarter.

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

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

Attach a signed certification to complete this report.

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

FESOP Quarterly Report

Source Name: Muncie Casting Corporation
Source Address: 1406 East 18th Street, Muncie, Indiana 47302
Mailing Address: P.O. Box 2328, Muncie, Indiana 47302
FESOP No.: F035-9977-00061
Facility: mechanical sand reclamation unit (EU13), thermal sand reclamation unit (EU17)
Parameter: Sand throughput to limit PM and PM10 emissions
Limit: The throughput of sand to the mechanical sand reclamation unit (EU13) shall not exceed 9,675 tons per twelve (12) consecutive month period, with compliance determined at the end of each month;

The throughput of sand to the thermal sand reclamation unit (EU17) shall not exceed 9,675 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

YEAR:_____

Month	Unit ID	Column 1	Column 2	Column 1 + Column 2
		Sand Throughput This Month (tons)	Sand Throughput Previous 11 Months (tons)	12 Month Total Sand Throughput (tons)
Month 1	EU13			
	EU17			
Month 2	EU13			
	EU17			
Month 3	EU13			
	EU17			

☐ No deviation occurred in this quarter.

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

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

Attach a signed certification to complete this report.

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

FESOP Quarterly Report

Source Name: Muncie Casting Corporation
Source Address: 1406 East 18th Street, Muncie, Indiana 47302
Mailing Address: P.O. Box 2328, Muncie, Indiana 47302
FESOP No.: F035-9977-00061
Facility: GOFF shot blast machine (EU14), small shot blast machine (EU15), sand blaster machine (EU16)
Parameter: Metal casting throughput to limit PM and PM10 emissions
Limit: The throughput of metal castings to the GOFF shot blast machine (EU14) shall not exceed 7,825 tons per twelve (12) consecutive month period, with compliance determined at the end of each month;

The throughput of metal castings to the small shot blast machine (EU15) shall not exceed 1,174 tons per twelve (12) consecutive month period, with compliance determined at the end of each month;

The throughput of metal castings to the sand blaster machine (EU16) shall not exceed 1,174 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

YEAR:_____

Month	Unit ID	Column 1	Column 2	Column 1 + Column 2
		Metal Casting Throughput This Month (tons)	Metal Casting Throughput Previous 11 Months (tons)	12 Month Total Metal Casting Throughput (tons)
Month 1	EU14			
	EU15			
	EU16			
Month 2	EU14			
	EU15			
	EU16			
Month 3	EU14			
	EU15			
	EU16			

☐ No deviation occurred in this quarter.

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

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

Attach a signed certification to complete this report.

Indiana Department of Environmental Management
Office of Air Quality

Addendum to the
Technical Support Document (TSD) for a Significant Permit Revision to a Federally Enforceable State Operating Permit (FESOP)

Source Background and Description

Source Name:	Muncie Casting Corporation
Source Location:	1406 East 18th Street, Muncie, Indiana 47302
County:	Delaware
SIC Code:	3365, 3321
Operation Permit No.:	035-9977-00061
Operation Permit Issuance Date:	October 6, 2000
Permit Revision No.:	035-19855-00061
Permit Reviewer:	Trish Earls/EVP

On June 3, 2005, the Office of Air Quality (OAQ) had a notice published in the Muncie Star Press in Muncie, Indiana, stating that Muncie Casting Corporation had applied for a Significant Permit Revision to a Federally Enforceable State Operating Permit (FESOP) to add two (2) new 2300-pound electric aluminum melting furnaces to the aluminum foundry, add three (3) new U-180 core machines to the iron foundry, replace the Ashland Chemical Novathane binder system with the Ashland Chemical PepSet binder system in the existing coremaking operations, and move the one (1) existing U-180 core machine, formerly located in the aluminum foundry, to the iron foundry. Muncie Casting Corporation has also requested to have the maximum throughput capacity of aluminum in the aluminum foundry be increased to 1.71 tons per hour. The notice also stated that OAQ proposed to issue a Significant Permit Revision to a Federally Enforceable State Operating Permit for this operation and provided information on how the public could review the proposed Significant Permit Revision 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 Significant Permit Revision should be issued as proposed.

On July 6, 2005, Joseph Van Camp of Cornerstone Environmental, submitted comments on the proposed FESOP Significant Permit Revision on behalf of Muncie Casting Corporation. The summary of the comments and corresponding responses is as follows (bolded language has been added and the language with a line through it has been deleted).

Comment 1

The facility has indicated a need to increase the sand throughput limits for the mechanical sand reclamation unit and the thermal sand reclamation unit to account for a new production job they need to be able to run later this year. Specifically, the facility desires to increase the annual throughput of resin-bonded sand from 200 tons to 400 tons per year. The annual throughput of virgin silica sand has not changed from the original value of 2,825 tons. The sand handling emission calculations have been updated to reflect this (all other calculation spreadsheets for the Aluminum Foundry, Iron Foundry, and Cleaning/Finishing operations have remained unchanged). This change in the resin-bonded sand throughput changes the PM emissions for Sand Handling to 6.36 tons/year, which in turn changes the facility-wide PM emissions for the significant emission units to 94.34 tons/year. When combined with the 5.0 tons/year value assigned to the insignificant activities, the total overall facility-wide PM emissions are 99.34 tons/year (which is still less than the PSD threshold of 100 tons/year).

Response 1

The increase in the annual throughput of resin-bonded sand from 200 tons to 400 tons per year has been reflected in the emission calculation spreadsheets for sand handling in the mechanical sand reclamation unit. Since the emissions for the thermal sand reclamation unit were based on more conservative stack test data from the manufacturer than the AP-42 emission factors, emissions from this unit were unchanged. Additionally, the HAP emission calculations for pouring, cooling and shakeout from the resin-bonded sand usage and the VOC emission calculations from the U-180 core machines were revised to reflect a maximum usage of 400 tons (800,000 lbs) of resin-bonded sand per year. With the revised sand throughput limitation to each of the mechanical sand reclamation unit and the thermal sand reclamation unit of 3,225 tons per, which includes 400 tons per year of resin-bonded sand, the source-wide potential to emit of all pollutants remains at less than 100 tons per year. Condition D.3.1 is revised as follows:

D.3.1 PM and PM_{10} [326 IAC 2-8-4][326 IAC 2-2]

(a) Pursuant to 326 IAC 2-8-4, and to render the requirements of 326 IAC 2-2 not applicable, the throughput for the sand handling operations shall be limited as follows:

(1) The combined throughput of sand to the Kloster Sand Mixer (EU19), the Palmer Core Mixer #1 (EU20), the Palmer Core Mixer #2 (EU21), and the Strong Scott Sand Mixer (EU18) shall not exceed 2,825 tons per twelve (12) consecutive month period, with compliance determined at the end of each month;

(2) The throughput of sand to the mechanical sand reclamation unit (EU13) shall not exceed ~~3,025~~ **3,225** tons per twelve (12) consecutive month period, with compliance determined at the end of each month;

(3) The throughput of sand to the thermal sand reclamation unit (EU17) shall not exceed ~~3,025~~ **3,225** tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(b) The PM emissions for the sand handling operations shall be limited as follows:

(1) Total PM emissions from the Kloster Sand Mixer (EU19), the Palmer Core Mixer #1 (EU20), the Palmer Core Mixer #2 (EU21), and the Strong Scott Sand Mixer (EU18) shall not exceed 0.37 pounds per ton of sand throughput;

(2) PM emissions from the mechanical sand reclamation unit (EU13) shall not exceed 3.6 pounds per ton of sand throughput;

(3) PM emissions from the baghouse controlling the thermal sand reclamation unit (EU17) shall not exceed 0.04~~6~~**3** pound per ton of sand throughput;

These emission limits will render the requirements of 326 IAC 2-2 not applicable.

(c) Pursuant to 326 IAC 2-8-4, the PM10 emissions for the sand handling operations shall be limited as follows:

(1) Total PM10 emissions from the Kloster Sand Mixer (EU19), the Palmer Core Mixer #1 (EU20), the Palmer Core Mixer #2 (EU21), and the Strong Scott Sand Mixer (EU18) shall not exceed 0.54 pounds per ton of sand throughput;

(2) PM10 emissions from the mechanical sand reclamation unit (EU13) shall not exceed 0.54 pounds per ton of sand throughput;

(3) PM10 emissions from the baghouse controlling the thermal sand reclamation unit (EU17) shall not exceed ~~15.75~~ **14.77** pounds per ton of sand throughput;

Compliance with these PM10 emission limits will satisfy 326 IAC 2-8-4. Therefore, the Part 70 rules (326 IAC 2-7) and 326 IAC 2-2 do not apply.

Comment 2

The facility would also like to clarify the language in Section D.3 of the permit and on the FESOP Quarterly Report forms for Sand Handling. Specifically, the facility would like the following language changes made to clarify that the throughput limits are based upon total annual sand purchased and added into the system:

1. In Section D.3.1(a)(1), the language should read: "The combined throughput of virgin silica sand to the Kloster Sand Mixer (EU19), the Palmer Core Mixer #1 (EU20), the Palmer Core Mixer #2 (EU21), and the Strong Scott Sand Mixer (EU18) shall not exceed 2,825 tons per 12 consecutive month period, based upon total annual virgin silica sand purchases, with compliance determined at the end of each month."

2. In Section D.3.1(a)(2), the language should read: "The throughput of virgin silica sand and resin bonded sand to the mechanical sand reclamation unit (EU13) shall not exceed 3,225 tons per 12 consecutive month period, based upon total annual virgin silica sand and resin bonded sand purchases, with compliance determined at the end of each month."

3. In Section D.3.1(a)(3), the language should read: "The throughput of virgin silica sand and resin bonded sand to the thermal sand reclamation unit (EU17) shall not exceed 3,225 tons per 12 consecutive month period, based upon total annual virgin silica sand and resin bonded sand purchases, with compliance determined at the end of each month."

4. On the FESOP Quarterly Report form for Sand Handling (page 40c of the draft FESOP), the "Parameter" description should specify that the sand throughput value is based upon total annual virgin silica sand purchases.

5. On the FESOP Quarterly Report form for Sand Handling (page 40d of the draft FESOP), the "Parameter" description should specify that the sand throughput value is based upon total annual virgin silica sand and resin bonded sand purchases. The "Limit" description should identify 3,225 tons instead of 3,025 tons.

The facility believes that these language changes are critical to avoid future confusion regarding the required Sand Handling recordkeeping. The only method of documenting compliance with the PM and PM-10 emission limits for Sand Handling is by tracking total annual silica sand and resin bonded core sand purchases, and not by recording a total sand "throughput" value to each emission unit. As specified in the "Notes" section at the bottom of the Sand Handling emission calculation spreadsheet under items 6 and 7, the fines have been removed from the "reconditioned" sand that is returned to the sand system. So the best estimate of actual PM emissions is from the original sand added to the system and not the total sand throughput value which will take into account the same sand grain that may get reused several times.

Response 2

Condition D.3.1 is already revised as shown in response 1. The record keeping condition D.3.9 will be revised to include record keeping requirements for the sand throughput limitations, which were erroneously left out of the draft. However, to ensure compliance with the PM and PM10 emission limits in condition D.3.1 which are based on all sand used, including both new and re-used sand, the source must keep records of the throughput of all sand in the mixers and reclamation units. Just keeping records of the amount of sand purchased does not accurately reflect the amount of sand passing through the mixers and reclamation units. The Quarterly Report forms will be revised to include the revised sand throughput limitations without replication in this document.

D.3.9 Record Keeping Requirements

(a) To document compliance with Condition D.3.5, the Permittee shall maintain records of daily visible emission notations of the four (4) mixers (EU18 - EU21) and the thermal sand reclamation unit (EU17), respectively.

(b) To document compliance with Condition D.3.6, the Permittee shall maintain the following:

(1) Daily records of the total static pressure drop during normal operation when venting to the atmosphere.

(2) Documentation of the dates vents are redirected.

(c) To document compliance with Condition D.3.7, the Permittee shall maintain records of the results of the inspections required under Condition D.3.7 and the dates the vents are redirected.

(d) To document compliance with Condition D.3.1(a)(1), the Permittee shall maintain records of combined sand throughput to the Kloster Sand Mixer (EU19), the Palmer Core Mixer #1 (EU20), the Palmer Core Mixer #2 (EU21), and the Strong Scott Sand Mixer (EU18) on a monthly basis.

(e) To document compliance with Condition D.3.1(a)(2), the Permittee shall maintain records of the total sand throughput to the mechanical sand reclamation unit (EU13) on a monthly basis.

(f) To document compliance with Condition D.3.1(a)(3), the Permittee shall maintain records of the total sand throughput to the thermal sand reclamation unit (EU17) on a monthly basis.

~~(d)~~**(g)** All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

On July 12, 2005, Joseph Van Camp of Cornerstone Environmental submitted additional comments on the proposed FESOP Significant Permit Revision on behalf of Muncie Casting Corporation. The summary of the comments and corresponding responses is as follows (bolded language has been added and the language with a line through it has been deleted).

Comment #1

Because of the need to base sand handling PM and PM10 emissions on total sand usages versus total sand purchases, several changes had to be made to the emission calculations in order to comply with the overall facility-wide PM and PM10 emission limits of 100 tons per year:

1. The PM and PM10 emissions for the mechanical sand reclamation unit, the Kloster sand mixer, the Palmer core mixer #1, the Palmer core mixer #2 and the Strong Scott sand mixer are now based upon the total annual throughput of virgin silica sand and resin bonded core sand, multiplied by a factor of 3 to account for the sand grains being reused several times in the sand system. Since there is no way to know if all the reconditioned sand is actually routed back through the sand mixers, it was assumed that 100% of the total annual sand usage (9,675 tons per year) passes through the mixers as well. The Process Use Allocation % values identified for these mixers on the Sand Handling spreadsheet are still valid.

2. The total annual throughput of aluminum scrap metal has been decreased to 24,230,000 pounds per year.

3. The total annual throughput of metal (aluminum and gray iron) has been decreased to 26,230,000 pounds per year.

4. The estimated baghouse control efficiency for the thermal sand reclaimer has been decreased to 98.0% and the estimated baghouse control efficiencies for the shotblast and sand blaster cleaning machines have been decreased to 95.0% to allow for a more conservative estimation of PM emissions.

The net effect of the changes identified above is that the total PM emissions for the significant emission units are now at 93.82 tons/year. When combined with the 5.0 tons/year value assigned to the insignificant activities, the total overall facility-wide PM emissions are 98.82 tons/year (which is still less than the PSD threshold of 100 tons/year). These changes identified above need to be reflected throughout the draft FESOP as required.

The facility would still like to clarify the language in Section D.3 of the permit and on the FESOP Quarterly Report forms for Sand Handling. Specifically, the facility would like the following language changes made to clarify that the sand mixer throughput limits are based upon total annual sand purchased and added into the system, and the reclamation unit throughputs are based upon maximum total annual sand throughput actually passing through the sand system:

1. In Section D.3.1(a)(1), the language should read: "The combined throughput of virgin silica sand to the Kloster Sand Mixer (EU19), the Palmer Core Mixer #1 (EU20), the Palmer Core Mixer #2 (EU21), and the Strong Scott Sand Mixer (EU18) shall not exceed 9,675 tons per 12 consecutive month period, based upon total annual virgin silica sand purchases, with compliance determined at the end of each month."

2. In Section D.3.1(a)(2), the language should read: "The throughput of virgin silica sand and resin bonded sand to the mechanical sand reclamation unit (EU13) shall not exceed 9,675 tons per 12 consecutive month period, based upon total annual usage of virgin and reconditioned silica sand and resin bonded sand, with compliance determined at the end of each month."

3. In Section D.3.1(a)(3), the language should read: "The throughput of virgin silica sand and resin bonded sand to the thermal sand reclamation unit (EU17) shall not exceed 9,675 tons per 12 consecutive month period, based upon total annual usage of virgin and reconditioned silica sand and resin bonded sand, with compliance determined at the end of each month."

4. On the FESOP Quarterly Report form for Sand Handling (page 40c of the draft FESOP), the "Parameter" description should specify that the sand throughput value is based upon total annual virgin silica sand purchases.

5. On the FESOP Quarterly Report form for Sand Handling (page 40d of the draft FESOP), the "Parameter" description should specify that the sand throughput value is based upon total annual silica sand and resin bonded sand usage. The "Limit" description should identify 9,675 tons instead of 3,025 tons.

The facility believes that these language changes are critical to avoid future confusion regarding the required Sand Handling recordkeeping and to allow sufficient operating flexibility.

Response #1

The emission calculations in Appendix A of the TSD have been revised to reflect the changes to the sand throughput and metal throughput limitations described above. Conditions D.2.1 and D.4.1 are revised as shown below. Also, condition D.3.1 is further revised as follows:

D.2.1 PM and PM_{10} [326 IAC 2-8-4][326 IAC 2-2]

(a) Pursuant to 326 IAC 2-8-4, and to render the requirements of 326 IAC 2-2 not applicable, the throughput for the aluminum foundry shall be limited as follows:

(1) The total throughput of aluminum to the aluminum foundry, including the five (5) 2,300 lb melting furnaces and one (1) 700 lb melting furnace (EU7), the one (1) 300 lb melting furnace (EU8), the aluminum pouring/casting operation (EU10), the aluminum casting cooling operation (EU11), and the aluminum shakeout operation (EU12), shall not exceed ~~15,000~~ **12,042** tons per twelve (12) consecutive month period, with compliance determined at the end of each month;

(2) The throughput of aluminum to the aluminum magnesium treatment operation (EU9) shall not exceed ~~12,750~~ **10,236** tons per twelve (12) consecutive month period, with compliance determined at the end of each month;

(b) The PM emissions for the aluminum foundry shall be limited as follows:

(1) Total PM emissions from the five (5) 2,300 lb melting furnaces and one (1) 700 lb melting furnace (EU7), and the one (1) 300 lb melting furnace (EU8) shall not exceed 1.90 pounds per ton of aluminum throughput;

(2) Total PM emissions from the aluminum pouring/casting operation (EU10) and the aluminum casting cooling operation (EU11) shall not exceed 4.2 pounds per ton of aluminum throughput;

(3) PM emissions from the aluminum shakeout operation (EU12) shall not exceed 3.2 pounds per ton of iron throughput;

(4) PM emissions from the aluminum magnesium treatment operation (EU9) shall not exceed 1.80 pounds per ton of aluminum throughput;

These emission limits will render the requirements of 326 IAC 2-2 not applicable.

(c) Pursuant to 326 IAC 2-8-4, the PM10 emissions for the aluminum foundry shall be limited as follows:

(1) Total PM10 emissions from the five (5) 2,300 lb melting furnaces and one (1) 700 lb melting furnace (EU7), and the one (1) 300 lb melting furnace (EU8) shall not exceed 1.70 pounds per ton of aluminum throughput;

(2) Total PM10 emissions from the aluminum pouring/casting operation (EU10) and the aluminum casting cooling operation (EU11) shall not exceed 2.06 pound per ton of aluminum throughput;

(3) PM10 emissions from the aluminum shakeout operation (EU12) shall not exceed 2.24 pounds per ton of iron throughput;

(4) PM10 emissions from the aluminum magnesium treatment operation (EU9) shall not exceed 1.80 pounds per ton of aluminum throughput.

Compliance with these PM10 emission limits will satisfy 326 IAC 2-8-4. Therefore, the Part 70 rules (326 IAC 2-7) and 326 IAC 2-2 do not apply.

D.3.1 PM and PM_{10} [326 IAC 2-8-4][326 IAC 2-2]

(a) Pursuant to 326 IAC 2-8-4, and to render the requirements of 326 IAC 2-2 not applicable, the throughput for the sand handling operations shall be limited as follows:

(1) The combined throughput of sand to the Kloster Sand Mixer (EU19), the Palmer Core Mixer #1 (EU20), the Palmer Core Mixer #2 (EU21), and the Strong Scott Sand Mixer (EU18) shall not exceed ~~2,825~~ **9,675** tons per twelve (12) consecutive month period, with compliance determined at the end of each month;

(2) The throughput of sand to the mechanical sand reclamation unit (EU13) shall not exceed ~~3,225~~ **9,675** tons per twelve (12) consecutive month period, with compliance determined at the end of each month;

(3) The throughput of sand to the thermal sand reclamation unit (EU17) shall not exceed ~~3,225~~ **9,675** tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(b) The PM emissions for the sand handling operations shall be limited as follows:

(1) Total PM emissions from the Kloster Sand Mixer (EU19), the Palmer Core Mixer #1 (EU20), the Palmer Core Mixer #2 (EU21), and the Strong Scott Sand Mixer (EU18) shall not exceed ~~0.37~~ **0.36** pounds per ton of sand throughput;

(2) PM emissions from the mechanical sand reclamation unit (EU13) shall not exceed 3.6 pounds per ton of sand throughput;

(3) PM emissions from the baghouse controlling the thermal sand reclamation unit (EU17) shall not exceed ~~0.043~~ **0.10** pound per ton of sand throughput;

These emission limits will render the requirements of 326 IAC 2-2 not applicable.

(c) Pursuant to 326 IAC 2-8-4, the PM10 emissions for the sand handling operations shall be limited as follows:

(1) Total PM10 emissions from the Kloster Sand Mixer (EU19), the Palmer Core Mixer #1 (EU20), the Palmer Core Mixer #2 (EU21), and the Strong Scott Sand Mixer (EU18) shall not exceed 0.54 pounds per ton of sand throughput;

(2) PM10 emissions from the mechanical sand reclamation unit (EU13) shall not exceed 0.54 pounds per ton of sand throughput;

(3) PM10 emissions from the baghouse controlling the thermal sand reclamation unit (EU17) shall not exceed ~~14.77~~ **4.926** pounds per ton of sand throughput;

Compliance with these PM10 emission limits will satisfy 326 IAC 2-8-4. Therefore, the Part 70 rules (326 IAC 2-7) and 326 IAC 2-2 do not apply.

D.4.1 PM and PM_{10} [326 IAC 2-8-4][326 IAC 2-2]

(a) Pursuant to 326 IAC 2-8-4, and to render the requirements of 326 IAC 2-2 not applicable, the throughput for the cleaning/finishing operations shall be limited as follows:

(1) The throughput of metal castings to the GOFF shot blast machine (EU14) shall not exceed ~~9,600~~ **7,825** tons per twelve (12) consecutive month period, with compliance determined at the end of each month;

(2) The throughput of metal castings to the small shot blast machine (EU15) shall not exceed ~~1,440~~ **1,174** tons per twelve (12) consecutive month period, with compliance determined at the end of each month;

(3) The throughput of metal castings to the sand blaster machine (EU16) shall not exceed ~~1,440~~ **1,174** tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(b) The PM emissions for the cleaning/finishing operations shall be limited as follows:

(1) The PM emissions from the baghouse controlling the GOFF shot blast machine (EU14) shall not exceed ~~0.34~~ **0.85** pound per ton of metal castings throughput;

(2) The PM emissions from the baghouse controlling the small shot blast machine (EU15) shall not exceed ~~0.34~~ **0.85** pound per ton of metal castings throughput;

(3) The PM emissions from the baghouse controlling the sand blaster machine (EU16) shall not exceed ~~0.34~~ **0.85** pound per ton of metal castings throughput.

These emission limits will render the requirements of 326 IAC 2-2 not applicable.

(c) Pursuant to 326 IAC 2-8-4, the PM10 emissions for the sand handling operations shall be limited as follows:

(1) The PM10 emissions from the baghouse controlling the GOFF shot blast machine (EU14) shall not exceed 1.7 pounds per ton of metal castings throughput;

(2) The PM10 emissions from the baghouse controlling the small shot blast machine (EU15) shall not exceed 1.7 pounds per ton of metal castings throughput;

(3) The PM10 emissions from the baghouse controlling the sand blaster machine (EU16) shall not exceed 1.7 pounds per ton of metal castings throughput.

Compliance with these PM10 emission limits will satisfy 326 IAC 2-8-4. Therefore, the Part 70 rules (326 IAC 2-7) and 326 IAC 2-2 do not apply.

The Quarterly report forms in the permit have also been revised accordingly without replication in this document.

Additionally, condition D.4.10 has been revised as follows to include record keeping requirements for the metal throughput limits for the shot blast machines and the sand blaster that were erroneously left out of the FESOP.

D.4.10 Record Keeping Requirements

(a) To document compliance with Condition D.4.6, the Permittee shall maintain records of daily visible emission notations of the stack exhausts 4 and 12 for the GOFF shot blaster (EU14).

(b) To document compliance with Condition D.4.7, the Permittee shall maintain the following:

(1) Daily records of the total static pressure drop during normal operation when venting to the atmosphere.

(2) Documentation of the dates vents are redirected.

(c) To document compliance with Condition D.4.8, the Permittee shall maintain records of the results of the inspections required under Condition D.4.8 and the dates the vents are redirected.

(d) To document compliance with Condition D.4.1(a), the Permittee shall maintain records of the throughput of metal castings to each of the GOFF shot blast machine (EU14), the small shot blast machine (EU15) and the sand blaster machine on a monthly basis.

~~(d)~~**(e)** All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

The OAQ prefers that the Technical Support Document reflect the permit that was on public notice. Changes to the permit or technical support material that occur after the public notice are documented in this Addendum to the Technical Support Document. This accomplishes the desired result of ensuring that these types of concerns are documented and part of the record regarding this permit decision.

The Potential To Emit After Controls for the Entire Source after Revision section of the TSD is amended as follows in this addendum to reflect the revised emissions resulting from the revised metal and sand throughput limits:

Potential to Emit After Controls for the Entire Source after Revision

The table below summarizes the total limited potential to emit of the significant and insignificant emission units for the entire source.

	Potential to Emit (tons/year)						
Process/facility	PM	PM-10	SO_2	VOC	CO	NO_X	HAPs
Iron Charge Handling (EU1)[1]	0.30	0.18	0.00	0.00	0.00	0.00	0.00
Two (2) iron melt furnaces (EU2)[1]	0.45	0.43	0.00	0.00	0.00	0.00	0.00
Magnesium treatment for iron (EU3)[1]	0.18	0.18	0.00	0.00	0.00	0.00	0.00
Iron Pouring/casting (EU4) **& Iron Casting cooling (EU5)** [1][2]	2.10	1.03	0.01	0.00	0.00	0.01	See EU10, EU11, and EU12 for emissions
~~Iron Casting cooling (EU5)~~ [1][2]	~~0.70~~	~~0.70~~	~~0.00~~	~~0.00~~	~~0.00~~	~~0.00~~	
Iron Foundry Shakeout (EU6) [1][2]	1.60	1.12	0.00	0.00	0.00	0.00	
Four (4) U-180 core machines (EU24)[3]	0.00	0.00	0.00	~~11.00~~ **22.00**	0.00	0.00	0.00
Six (6) aluminum melt furnaces (EU7)[4]	~~13.54~~ **10.87**	~~12.12~~ **9.72**	0.00	~~1.43~~ **1.15**	0.00	0.00	0.00
One (1) 300 pound aluminum melt furnace (EU8)[4][5]	~~0.72~~ **0.58**	~~0.67~~ **0.54**	0.00	~~0.10~~ **0.08**	0.37	0.44	0.008
Magnesium treatment for aluminum (EU9)[4]	~~11.48~~ **9.21**	~~11.48~~ **9.21**	0.00	0.00	0.00	0.00	0.00
Aluminum Pouring/casting & Casting cooling (EU10 & EU11) [2][4]	~~31.50~~ **25.29**	~~15.45~~ **12.40**	~~0.15~~ **0.12**	~~1.05~~ **0.84**	0.00	~~0.08~~ **0.06**	~~4.04~~ **6.59** (includes EU4, EU5, and EU6)
Aluminum Foundry Shakeout (EU12) [2][4]	~~24.00~~ **19.27**	~~16.80~~ **13.49**	0.00	~~9.00~~ **7.23**	0.00	0.00	
Mechanical Sand Reclamation (EU13)[6]	~~5.45~~ **17.42**	~~0.82~~ **2.61**	0.00	0.00	0.00	0.00	0.00
GOFF steel shot blast machine (EU14)[7]	~~1.63~~ **3.33**	~~0.16~~ **0.33**	0.00	0.00	0.00	0.00	0.00
Small Aluminum shot blast machine (EU15) [8]	~~0.24~~ **0.50**	~~0.02~~ **0.05**	0.00	0.00	0.00	0.00	0.00
Sand blaster machine (EU16) [9]	~~0.24~~ **0.50**	~~0.02~~ **0.05**	0.00	0.00	0.00	0.00	0.00
Thermal sand reclamation (EU17)[5][6]	~~0.07~~ **0.50**	~~0.12~~ **0.55**	0.01	0.05	0.74	0.88	0.017
Strong Scott sand mixer (EU18)[10]	~~0.03~~ **0.09**	~~0.004~~ **0.013**	0.00	0.00	0.00	0.00	0.00
Kloster sand mixer (EU19) [10]	~~0.31~~ **1.04**	~~0.05~~ **0.16**	0.00	0.00	0.00	0.00	0.00
Palmer core mixer #1 (EU20) [10]	~~0.15~~ **0.52**	~~0.02~~ **0.08**	0.00	0.00	0.00	0.00	0.00
Palmer core mixer #2 (EU21) [10]	~~0.03~~ **0.09**	~~0.004~~ **0.013**	0.00	0.00	0.00	0.00	0.00
CB-22 core machine (EU22) and Dependable 420 core machine (EU23)	0.00	0.00	3.75	10.49	0.00	0.00	1.03

Process/facility	PM	PM-10	SO_2	VOC	CO	NO_X	HAPs
Surface coating (EU26)	0.51	0.51	0.00	2.64	0.00	0.00	0.073
Fugitive outdoor waste sand storage and handling (EUF1)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Emissions	~~95.23~~ **94.35**	~~61.89~~ **52.67**	~~3.92~~ **3.89**	~~35.76~~ **44.48**	1.11	~~1.41~~ **1.39**	~~5.17~~ **7.72**

Notes:

(1) Emissions from the iron melting and casting process are based on a limited iron throughput of 1,000 tons per twelve (12) consecutive month period.

(2) HAP emissions from pouring, cooling, and shakeout are based on the total source-wide binder usage and therefore represent combined emissions from pouring, cooling, and shakeout at both the iron and aluminum foundries.

(3) Emissions from the four U-180 core machines are based on a maximum resin bonded sand throughput of ~~400,000~~ **800,000** pounds per twelve (12) consecutive month period.

(4) Emissions from the aluminum melting and casting process are based on a limited aluminum throughput of ~~15,000~~ **12,042** tons per twelve (12) consecutive month period.

(5) Emissions from the one (1) 300 pound melt furnace and the thermal sand reclamation include emissions from natural gas combustion.

(6) Emissions from mechanical sand reclamation and thermal sand reclamation are **each** based on a maximum ~~virgin~~ sand throughput of ~~5,650,000 pounds~~ **9,675 tons** per twelve (12) consecutive month period ~~and a maximum resin bonded sand throughput of 400,000 pounds per twelve (12) consecutive month period~~.

(7) Emissions from the GOFF shotblast machine are based on a maximum metal (aluminum and iron) throughput of ~~9,600~~ **7,825** tons per twelve (12) consecutive month period.

(8) Emissions from the Small aluminum shotblast machine are based on a maximum metal (aluminum and iron) throughput of ~~1,440~~ **1,174** tons per twelve (12) consecutive month period.

(9) Emissions from the Sand blaster machine are based on a maximum metal (aluminum and iron) throughput of ~~1,440~~ **1,174** tons per twelve (12) consecutive month period.

(10) Emissions from sand and core mixers are based on a maximum ~~virgin~~ sand throughput of ~~5,650,000 pounds~~ **9,675 tons** per twelve (12) consecutive month period.

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for a Significant Permit Revision to a Federally Enforceable State Operating Permit (FESOP)

Source Background and Description

Source Name:	**Muncie Casting Corporation**
Source Location:	**1406 East 18th Street, Muncie, Indiana 47302**
County:	**Delaware**
SIC Code:	**3365, 3321**
Operation Permit No.:	**035-9977-00061**
Operation Permit Issuance Date:	**October 6, 2000.**
Significant Permit Revision No.:	**035-19855-00061**
Permit Reviewer:	**Trish Earls/EVP**

The Office of Air Quality (OAQ) has reviewed a Significant Permit Revision application from Muncie Casting Corporation relating to the operation of a stationary aluminum and gray and ductile iron foundry.

History

On November 16, 2004, Muncie Casting Corporation submitted an application to the OAQ requesting to modify the existing source by adding two (2) new 2300-pound electric aluminum melting furnaces and three (3) new U-180 core machines, replacing the Ashland Chemical Novathane binder system with the Ashland Chemical PepSet binder system in the existing coremaking operations, and moving the one (1) existing U-180 core machine, formerly located in the aluminum foundry, to the iron foundry. Re-locating the one (1) existing U-180 core machine to the iron foundry will not result in any increase in iron throughput to the source. Also, there is no dust collector associated with the mechanical reclamation unit so the source is requesting to remove the reference to the dust collector from the equipment descriptions in section A.2 and D.1 of the FESOP and are also requesting that all the compliance monitoring requirements for this dust collector removed from the permit. Since the mechanical sand reclamation unit does not require a control device to comply with the applicable PM and PM10 emission limits, the removal of the dust collector does not affect compliance with any applicable rules.

Additionally, the source would like to have the maximum throughput capacity of aluminum in the aluminum foundry be increased to 1.71 tons per hour. The source will accept this throughput capacity as a limit in addition to iron and sand throughput limits which will limit the source-wide PM and PM10 emissions to less than 100 tons per year as discussed in the paragraph below. Therefore, since source-wide PM and PM10 emissions, including any emissions increases due to increased utilization, will be limited to less than the PSD major source thresholds of 100 tons per year, each, this revision is not subject to the requirements of 326 IAC 2-2 (PSD). Muncie Casting Corporation was issued FESOP No. F035-9977-00061 on October 6, 2000.

These modifications to existing facilities and the addition of new units, will lead to net changes in potential emissions of regulated pollutants. These changes do not affect the source's compliance with any Federal or State Rules as stated in FESOP 035-9977-00061. The hourly PM and PM10 limits included in Conditions D.1.1 and D.1.2 of the original permit were established to limit the source-wide PM10 emissions to less than 100 tons per year pursuant to 326 IAC 2-8-4 (FESOP) and to limit the source-wide PM emissions to less than 250 tons per year to render the Prevention of Significant Deterioration (PSD) rule, 326 IAC 2-2, not applicable. However, it has been determined that this source is one of the twenty-eight (28) listed source categories under 326 IAC 2-2 (PSD) as a secondary metal production facility because they are melting and casting iron. Therefore, the determination made in the original FESOP that this source is not one of the 28 listed source categories was incorrect. The source will accept source-wide throughput limits for aluminum, iron and sand, so that source-wide PM emissions are also limited to less than 100 tons per year making this a minor PSD source. Pursuant to 326 IAC 2-8-11.1 (f) (1), the application is reviewed as a Significant Permit Revision to the existing FESOP because the emission limits in conditions D.1.1 and D.1.2 of the original FESOP are being revised which can not be done through a minor permit revision and the potential to emit of PM, PM10, and VOC from the modification is greater than 25 tons per year.

New Emission Units and Pollution Control Equipment

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

Iron Foundry

(a) U-180 core making operations, identified as EU24, including the following:

(1) One (1) U-180 core machine (formerly located in the aluminum foundry), utilizing a shell binder system, installed in 1998, capacity: 0.045 tons of cores per hour.

(2) One (1) U-180 core machine, utilizing a shell binder system, installed in January 2004, capacity: 0.045 tons of cores per hour.

(3) Two (2) U-180 core machines, each utilizing a shell binder system, to be installed in 2005, and each with maximum capacity of 0.045 tons of cores per hour.
Note: The above two (2) core machines, on-site, will be refurbished and are not currently operating.

Aluminum Foundry

(a) Two (2) 2,300 pound electric melting furnaces, installed in 2003, with a combined maximum throughput capacity of 0.556 tons of aluminum per hour.

Note that although two (2) of the U-180 core machines and the two (2) melting furnaces listed above have already been installed, each has potential emissions that are at exempt levels pursuant to 326 IAC 2-1.1-3 and therefore did not require IDEM approval prior to construction.

Existing Approvals

The source has been operating under the previous FESOP 035-9977-00061, issued on October 6, 2000, and there have been no amendments or revisions issued since then.

Enforcement Issue

There are no enforcement actions pending.

Recommendation

The staff recommends to the Commissioner that the FESOP Significant Permit Revision 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 administratively complete FESOP Significant Permit Revision application for the purposes of this review was received on November 19, 2004. Additional information was received on January 4, 2005, March 11, 2005, and April 27, 2005.

There was no notice of completeness letter mailed to the source.

Emission Calculations

See Appendix A of this document for detailed emissions calculations (pages 1 through 9).

Potential To Emit of the Revision

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

Pollutant	Potential To Emit (tons/yr)
PM	94.01
PM_{10}	60.67
SO_2	0.17
VOC	33.11
CO	1.11
NO_x	1.41

HAPs	Potential To Emit (tons/yr)
Formaldehyde	Less than 10
Benzene	Less than 10
Toluene	Less than 10
Xylenes	Less than 10
Phenol	Less than 10
Naphthalene	Less than 10
Total	Less than 25

Note the emissions represented above include the limited potential to emit from the source, including the new units being added, after application of aluminum, iron, and sand throughput limits to limit emissions of all criteria pollutants to less than 100 tons per year.

Justification for Revision

The FESOP is being revised through a Significant Permit Revision pursuant to 326 IAC 2-8-11.1(f), since hourly PM and PM10 limits as stated in Conditions D.1.1 and D.1.2 of the original FESOP are being revised because of the new additional units and other modifications and because the potential to emit of PM, PM10, and VOC emissions is greater than 25 tons per year.

County Attainment Status

The source is located in Delaware County.

Pollutant	Status
PM2.5	Attainment or Unclassifiable
PM_{10}	attainment
SO_2	attainment
NO_2	attainment
1-hour Ozone	attainment
8-hour Ozone	Basic nonattainment
CO	attainment
Lead	attainment

(a) Volatile organic compounds (VOC) and Nitrogen Oxides (NOx) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NOx emissions are considered when evaluating the rule applicability relating to the ozone standards. Delaware County has been designated as nonattainment for the 8-hour ozone standard. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Emission Offset, 326 IAC 2-3.

(b) Delaware County has been classified as unclassifiable or attainment for PM2.5. U.S. EPA has not yet established the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 for PM 2.5 emissions. Therefore, until the U.S.EPA adopts specific provisions for PSD review for PM2.5 emissions, it has directed states to regulate PM10 emissions as surrogate for PM2.5 emissions. See the State Rule Applicability for the source section.

(c) Delaware County has been classified as attainment or unclassifiable in Indiana for all other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2. See the State Rule Applicability for the source section.

(d) Fugitive Emissions
Since this type of operation is not one of the 28 listed source categories under 326 IAC 2-2 or 2-3 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive particulate matter (PM) and volatile organic compound (VOC) emissions are not counted toward determination of PSD and Emission Offset applicability.

Source Status

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

Pollutant	Emissions (tons/yr)
PM	115.0
PM_{10}	62.6
SO_2	3.51
VOC	27.9
CO	1.10
NO_x	1.36
Single HAP	<10.0
Combination HAPs	<25.0

(a) This existing source would be considered a major stationary source because an attainment regulated pollutant is emitted at a rate of 100 tons per year or greater and it is in one of the 28 listed source categories. However, the source is requesting to accept a source-wide emission limit for PM of less than 100 tons per year so that this source will not be considered a major stationary source after this modification.

(b) These emissions are based upon FESOP 035-9977-00061, issued on October 6, 2000.

Potential to Emit After Controls for the Entire Source after Revision

The table below summarizes the total limited potential to emit of the significant and insignificant emission units for the entire source.

	Potential to Emit (tons/year)						
Process/facility	PM	PM-10	SO_2	VOC	CO	NO_X	HAPs
Iron Charge Handling (EU1)[1]	0.30	0.18	0.00	0.00	0.00	0.00	0.00
Two (2) iron melt furnaces (EU2)[1]	0.45	0.43	0.00	0.00	0.00	0.00	0.00
Magnesium treatment for iron (EU3)[1]	0.18	0.18	0.00	0.00	0.00	0.00	0.00
Iron Pouring/casting (EU4) [1][2]	2.10	1.03	0.01	0.00	0.00	0.01	See EU10, EU11, and EU12 for emissions
Iron Casting cooling (EU5) [1][2]	0.70	0.70	0.00	0.00	0.00	0.00	
Iron Foundry Shakeout (EU6) [1][2]	1.60	1.12	0.00	0.00	0.00	0.00	
Four (4) U-180 core machines (EU24)[3]	0.00	0.00	0.00	11.00	0.00	0.00	0.00
Six (6) aluminum melt furnaces (EU7)[4]	13.54	12.12	0.00	1.43	0.00	0.00	0.00
One (1) 300 pound aluminum melt furnace (EU8)[4][5]	0.72	0.67	0.00	0.10	0.37	0.44	0.008
Magnesium treatment for aluminum (EU9)[4]	11.48	11.48	0.00	0.00	0.00	0.00	0.00
Aluminum Pouring/casting & Casting cooling (EU10 & EU11) [2][4]	31.50	15.45	0.15	1.05	0.00	0.08	4.04 (includes EU4, EU5, and EU6)
Aluminum Foundry Shakeout (EU12) [2][4]	24.00	16.80	0.00	9.00	0.00	0.00	
Mechanical Sand Reclamation (EU13)[6]	5.45	0.82	0.00	0.00	0.00	0.00	0.00
GOFF steel shot blast machine (EU14)[7]	1.63	0.16	0.00	0.00	0.00	0.00	0.00
Small Aluminum shot blast machine (EU15) [8]	0.24	0.02	0.00	0.00	0.00	0.00	0.00
Sand blaster machine (EU16) [9]	0.24	0.02	0.00	0.00	0.00	0.00	0.00
Thermal sand reclamation (EU17)[5][6]	0.07	0.12	0.01	0.05	0.74	0.88	0.017
Strong Scott sand mixer (EU18)[10]	0.03	0.004	0.00	0.00	0.00	0.00	0.00
Kloster sand mixer (EU19) [10]	0.31	0.05	0.00	0.00	0.00	0.00	0.00

Process/facility	PM	PM-10	SO_2	VOC	CO	NO_X	HAPs
Palmer core mixer #1 (EU20) (10)	0.15	0.02	0.00	0.00	0.00	0.00	0.00
Palmer core mixer #2 (EU21) (10)	0.03	0.004	0.00	0.00	0.00	0.00	0.00
CB-22 core machine (EU22) and Dependable 420 core machine (EU23)	0.00	0.00	3.75	10.49	0.00	0.00	1.03
Surface coating (EU26)	0.51	0.51	0.00	2.64	0.00	0.00	0.073
Fugitive outdoor waste sand storage and handling (EUF1)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Emissions	95.23	61.89	3.92	35.76	1.11	1.41	5.17

Notes:

(1) Emissions from the iron melting and casting process are based on a limited iron throughput of 1,000 tons per twelve (12) consecutive month period.

(2) HAP emissions from pouring, cooling, and shakeout are based on the total source-wide binder usage and therefore represent combined emissions from pouring, cooling, and shakeout at both the iron and aluminum foundries.

(3) Emissions from the four U-180 core machines are based on a maximum resin bonded sand throughput of 400,000 pounds per twelve (12) consecutive month period.

(4) Emissions from the aluminum melting and casting process are based on a limited aluminum throughput of 15,000 tons per twelve (12) consecutive month period.

(5) Emissions from the one (1) 300 pound melt furnace and the thermal sand reclamation include emissions from natural gas combustion.

(6) Emissions from mechanical sand reclamation and thermal sand reclamation are based on a maximum virgin sand throughput of 5,650,000 pounds per twelve (12) consecutive month period and a maximum resin bonded sand throughput of 400,000 pounds per twelve (12) consecutive month period.

(7) Emissions from the GOFF shotblast machine are based on a maximum metal (aluminum and iron) throughput of 9,600 tons per twelve (12) consecutive month period.

(8) Emissions from the Small aluminum shotblast machine are based on a maximum metal (aluminum and iron) throughput of 1,440 tons per twelve (12) consecutive month period.

(9) Emissions from the Sand blaster machine are based on a maximum metal (aluminum and iron) throughput of 1,440 tons per twelve (12) consecutive month period.

(10) Emissions from sand and core mixers are based on a maximum virgin sand throughput of 5,650,000 pounds per twelve (12) consecutive month period.

The existing source, including the new emission units being added in this modification, is a minor stationary source because the potential to emit of all pollutants is less than 100 tons per year, and it is one of the 28 listed source categories. Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply. Also, this existing source, including the new units being added in this modification, is a minor stationary source under 326 IAC 2-3, Emission Offset, because the potential to emit of VOC and NOx is less than 100 tons per year. Therefore, pursuant to 326 IAC 2-3, the Emission Offset requirements do not apply.

Federal Rule Applicability

(a) There are no New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60) included in this permit as a result of this revision.

(b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAP)(326 IAC 14, 20 and 40 CFR Part 61, 63) included in this permit as a result of this revision.

(c) This source is not subject to the requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAP), 40 CFR 63.1500 through 63.1519, Subpart RRR, because pursuant to 40 CFR 63.1500 (d), the requirements of this subpart do not apply to manufacturers of aluminum die castings, aluminum foundries, or aluminum extruders that melt no materials other than clean charge and materials generated within the facility; and that also do not operate a thermal chip dryer, sweat furnace or scrap dryer/delacquering kiln/decoating kiln. This source only melts clean charge and does not operate a thermal chip dryer, sweat furnace or scrap dryer/delacquering kiln/decoating kiln, therefore, the requirements of this rule do not apply.

(d) On April 22, 2004, U.S. EPA promulgated a NESHAP for iron and steel foundries. The NESHAP, 40 CFR 63.7680 - 63.7762, Subpart EEEEE, applies to each new or existing iron and steel foundry that is a major source of HAPs. A major source of HAPs is a source 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 HAPs at a rate of 25 tons or more per year. This source is not a major source of HAPs and is therefore not subject to this rule.

State Rule Applicability – Entire Source

326 IAC 1-6-3 (Preventive Maintenance Plan)

The source has submitted a Preventive Maintenance Plan (PMP) on October 6, 2000. This PMP has been verified to fulfill the requirements of 326 IAC 1-6-3 (Preventive Maintenance Plan).

326 IAC 2-2 (Prevention of Significant Deterioration (PSD))

This source, originally constructed in 1980, was incorrectly determined not to be a secondary metal production plant in the original FESOP (F035-9977-00061) issued on October 6, 2000, and therefore not one of the twenty eight (28) listed source categories. At that time, to render 326 IAC 2-2 not applicable, hourly PM emission limits were established in the original FESOP for each facility to limit source-wide PM emissions to less than 250 tons per year. However, because the source is melting and casting iron, it is considered a secondary metal production plant, and therefore one of the 28 listed source categories. The source will accept throughput limits for aluminum, iron and sand for the emission units at this source, including those being added in this modification, so that source-wide PM emissions, including potential PM emissions from insignificant activities, are limited to less than 100 tons per year making this a minor PSD source. The limits pursuant to 326 IAC 2-8-4 (FESOP), including the units added in this revision, will limit source-wide PM10 emissions to less than 100 tons per year. Therefore, this source is a minor source under PSD because it is one of the twenty eight (28) listed source categories under this rule and the potential emissions of all regulated criteria pollutants are limited to less than 100 tons per year. The PSD minor limits for PM are as follows:

(a) The total throughput of iron to the iron foundry, including the iron charge handling operation (EU1), the two (2) electric melting furnaces (EU2), the iron pouring/casting operation (EU4), the iron casting cooling operation (EU5), and the iron shakeout operation (EU6) shall not exceed 1,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month;

(b) PM emissions from the iron charge handling operation (EU1) shall not exceed 0.60 pound per ton of iron throughput;

(c) Total PM emissions from the two (2) electric melting furnaces (EU2) shall not exceed 0.90 pound per ton of combined iron throughput;

(d) Total PM emissions from the iron pouring/casting operation (EU4) and the iron casting cooling operation (EU5) shall not exceed 4.2 pounds per ton of iron throughput;

(e) PM emissions from the iron shakeout operation (EU6) shall not exceed 3.2 pounds per ton of iron throughput;

(f) The throughput of iron to the iron magnesium treatment operation (EU3) shall not exceed 200 tons per twelve (12) consecutive month period, with compliance determined at the end of each month;

(g) PM emissions from the iron magnesium treatment operation (EU3) shall not exceed 1.80 pounds per ton of iron throughput;

(h) The total throughput of aluminum to the aluminum foundry, including the five (5) 2,300 lb melting furnaces and one (1) 700 lb melting furnace (EU7), the one (1) 300 lb melting furnace (EU8), the aluminum pouring/casting operation (EU10), the aluminum casting cooling operation (EU11), and the aluminum shakeout operation (EU12), shall not exceed 15,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month;

(i) Total PM emissions from the five (5) 2,300 lb melting furnaces and one (1) 700 lb melting furnace (EU7), and the one (1) 300 lb melting furnace (EU8) shall not exceed 1.90 pounds per ton of aluminum throughput;

(j) Total PM emissions from the aluminum pouring/casting operation (EU10) and the aluminum casting cooling operation (EU11) shall not exceed 4.2 pounds per ton of aluminum throughput;

(k) PM emissions from the aluminum shakeout operation (EU12) shall not exceed 3.2 pounds per ton of iron throughput;

(l) The throughput of aluminum to the aluminum magnesium treatment operation (EU9) shall not exceed 12,750 tons per twelve (12) consecutive month period, with compliance determined at the end of each month;

(m) PM emissions from the aluminum magnesium treatment operation (EU9) shall not exceed 1.80 pounds per ton of aluminum throughput;

(n) The combined throughput of sand to the Kloster Sand Mixer (EU19), the Palmer Core Mixer #1 (EU20), the Palmer Core Mixer #2 (EU21), and the Strong Scott Sand Mixer (EU18) shall not exceed 2,825 tons per twelve (12) consecutive month period, with compliance determined at the end of each month;

(o) Total PM emissions from the Kloster Sand Mixer (EU19), the Palmer Core Mixer #1 (EU20), the Palmer Core Mixer #2 (EU21), and the Strong Scott Sand Mixer (EU18) shall not exceed 0.37 pounds per ton of sand throughput. The inherent moisture and binder resins shall be used with the Strong Scott and Kloster sand mixers and the two (2) Palmer core mixers at all times that the mixers are in operation, in order to comply with this limit;

(p) The throughput of sand to the mechanical sand reclamation unit (EU13) shall not exceed 3,025 tons per twelve (12) consecutive month period, with compliance determined at the end of each month;

(q) PM emissions from the mechanical sand reclamation unit (EU13) shall not exceed 3.6 pounds per ton of sand throughput;

(r) The throughput of sand to the thermal sand reclamation unit (EU17) shall not exceed 3,025 tons per twelve (12) consecutive month period, with compliance determined at the end of each month;

(s) PM emissions from the baghouse controlling the thermal sand reclamation unit (EU17) shall not exceed 0.046 pound per ton of sand throughput;

(t) The throughput of metal castings to the GOFF shot blast machine (EU14) shall not exceed 9,600 tons per twelve (12) consecutive month period, with compliance determined at the end of each month;

(u) The PM emissions from the baghouse controlling the GOFF shot blast machine (EU14) shall not exceed 0.34 pound per ton of metal castings throughput;

(v) The throughput of metal castings to the small shot blast machine (EU15) shall not exceed 1,440 tons per twelve (12) consecutive month period, with compliance determined at the end of each month;

(w) The PM emissions from the baghouse controlling the small shot blast machine (EU15) shall not exceed 0.34 pound per ton of metal castings throughput;

(x) The throughput of metal castings to the sand blaster machine (EU16) shall not exceed 1,440 tons per twelve (12) consecutive month period, with compliance determined at the end of each month;

(y) The PM emissions from the baghouse controlling the sand blaster machine (EU16) shall not exceed 0.34 pound per ton of metal castings throughput.

326 IAC 2-8-4 (FESOP)

Pursuant to this rule, the emissions of PM_{10} shall be limited to less than one hundred (100) tons per year. Therefore, the requirements of 326 IAC 2-7, do not apply.

To ensure compliance with 326 IAC 2-8, limited hourly PM10 emission rates were established in the original FESOP for each facility. However, the source will now accept throughput limits for aluminum, iron and sand for the emission units at this source, including those being added in this modification, so that source-wide PM10 emissions, including potential PM10 emissions from insignificant activities, are limited to less than 100 tons per year to comply with 326 IAC 2-8-4. These limits will replace the hourly PM10 emission limits in the original FESOP and will also render 326 IAC 2-2 (PSD) not applicable. The PM10 limits are as follows:

(a) The total throughput of iron to the iron foundry, including the iron charge handling operation (EU1), the two (2) electric melting furnaces (EU2), the iron pouring/casting operation (EU4), the iron casting cooling operation (EU5), and the iron shakeout operation (EU6) shall not exceed 1,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month;

(b) PM10 emissions from the iron charge handling operation (EU1) shall not exceed 0.36 pound per ton of iron throughput;

(c) Total PM10 emissions from the two (2) electric melting furnaces (EU2) shall not exceed 0.86 pound per ton of combined iron throughput;

(d) Total PM10 emissions from the iron pouring/casting operation (EU4) and the iron casting cooling operation (EU5) shall not exceed 2.06 pound per ton of iron throughput;

(e) PM10 emissions from the iron shakeout operation (EU6) shall not exceed 2.24 pounds per ton of iron throughput;

(f) The throughput of iron to the iron magnesium treatment operation (EU3) shall not exceed 200 tons per twelve (12) consecutive month period, with compliance determined at the end of each month;

(g) PM10 emissions from the iron magnesium treatment operation (EU3) shall not exceed 1.80 pounds per ton of iron throughput;

(h) The total throughput of aluminum to the aluminum foundry, including the five (5) 2,300 lb melting furnaces and one (1) 700 lb melting furnace (EU7), the one (1) 300 lb melting furnace (EU8), the aluminum pouring/casting operation (EU10), the aluminum casting cooling operation (EU11), and the aluminum shakeout operation (EU12), shall not exceed 15,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month;

(i) Total PM10 emissions from the five (5) 2,300 lb melting furnaces and one (1) 700 lb melting furnace (EU7), and the one (1) 300 lb melting furnace (EU8) shall not exceed 1.70 pounds per ton of aluminum throughput;

(j) Total PM10 emissions from the aluminum pouring/casting operation (EU10) and the aluminum casting cooling operation (EU11) shall not exceed 2.06 pound per ton of aluminum throughput;

(k) PM10 emissions from the aluminum shakeout operation (EU12) shall not exceed 2.24 pounds per ton of iron throughput;

(l) The throughput of aluminum to the aluminum magnesium treatment operation (EU9) shall not exceed 12,750 tons per twelve (12) consecutive month period, with compliance determined at the end of each month;

(m) PM10 emissions from the aluminum magnesium treatment operation (EU9) shall not exceed 1.80 pounds per ton of aluminum throughput;

(n) The combined throughput of sand to the Kloster Sand Mixer (EU19), the Palmer Core Mixer #1 (EU20), the Palmer Core Mixer #2 (EU21), and the Strong Scott Sand Mixer (EU18) shall not exceed 2,825 tons per twelve (12) consecutive month period, with compliance determined at the end of each month;

(o) Total PM10 emissions from the Kloster Sand Mixer (EU19), the Palmer Core Mixer #1 (EU20), the Palmer Core Mixer #2 (EU21), and the Strong Scott Sand Mixer (EU18) shall not exceed 0.54 pounds per ton of sand throughput;

(p) The throughput of sand to the mechanical sand reclamation unit (EU13) shall not exceed 3,025 tons per twelve (12) consecutive month period, with compliance determined at the end of each month;

(q) PM10 emissions from the mechanical sand reclamation unit (EU13) shall not exceed 0.54 pounds per ton of sand throughput;

(r) The throughput of sand to the thermal sand reclamation unit (EU17) shall not exceed 3,025 tons per twelve (12) consecutive month period, with compliance determined at the end of each month;

(s) PM10 emissions from the baghouse controlling the thermal sand reclamation unit (EU17) shall not exceed 15.75 pounds per ton of sand throughput;

(t) The throughput of metal castings to the GOFF shot blast machine (EU14) shall not exceed 9,600 tons per twelve (12) consecutive month period, with compliance determined at the end of each month;

(u) The PM10 emissions from the baghouse controlling the GOFF shot blast machine (EU14) shall not exceed 1.7 pounds per ton of metal castings throughput;

(v) The throughput of metal castings to the small shot blast machine (EU15) shall not exceed 1,440 tons per twelve (12) consecutive month period, with compliance determined at the end of each month;

(w) The PM10 emissions from the baghouse controlling the small shot blast machine (EU15) shall not exceed 1.7 pounds per ton of metal castings throughput;

(x) The throughput of metal castings to the sand blaster machine (EU16) shall not exceed 1,440 tons per twelve (12) consecutive month period, with compliance determined at the end of each month;

(y) The PM10 emissions from the baghouse controlling the sand blaster machine (EU16) shall not exceed 1.7 pounds per ton of metal castings throughput.

326 IAC 5-1 (Opacity Limitations)

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

State Rule Applicability – Individual Facilities

326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))

The operation of this stationary aluminum and gray and ductile iron foundry will continue to emit less than ten (10) tons per year of a single HAP or twenty (25) tons per year of a combination of HAPs including this revision. Therefore, 326 IAC 2-4.1 does not apply.

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

The particulate from the facilities at this source with the changes due to this revision incorporated shall be limited as specified in the following table:

Emission Unit	Process Weight Rate (tons per hour)	Allowable PM Emission Rate (pounds per hour)	Potential PM Emission Rate After Controls (if applicable) (pounds per hour)
Iron Foundry			
Charge Handling EU1	0.45	2.40	0.07 (limited)
Two (2) Electric Melting Furnaces (EU2)	0.45 total	2.40 total	0.10 (total after limit)
Magnesium Treatment (EU3)	0.09	0.817	0.04 (limited)
Pouring/Casting (EU4) & Casting Cooling (EU5)*	1.038	4.20	0.48 (limited)
Shakeout (EU6)*	0.519	2.64	0.37 (limited)
Aluminum Foundry			
Five (5) 2,300 lb Melting Furnace (EU7)	1.39 total (0.278 each)	5.11 total (1.02 each)	2.63 total (0.526 each)
700 lb Melting Furnace (EU7)	0.23	1.53	0.46
300 lb Melting Furnace (EU8)	0.09	0.82	0.16

Emission Unit	Process Weight Rate (tons per hour)	Allowable PM Emission Rate (pounds per hour)	Potential PM Emission Rate After Controls (if applicable) (pounds per hour)
Magnesium Treatment (EU9)	1.45	5.26	2.62
Pouring/Casting (EU10) & Casting Cooling (EU11)*	3.972	10.33	7.19
Shakeout (EU12)*	1.986	6.49	5.48
Mechanical Sand Reclamation Unit (EU13)	1.5	5.38	1.24 (limited)
GOFF Shot Blaster (EU14)	1.096	4.36	0.37 (controlled)
Small Aluminum Shot Blaster (EU15)	0.16	1.20	0.05 (controlled)
Sand Blaster (EU16)	0.16	1.20	0.05 (controlled)
Thermal Sand Reclamation Unit (EU17)	1.00	4.10	0.011 (controlled)
Strong Scott Mixer (EU18)	6.00	13.6	0.06 (limited uncontrolled)
Kloster Mixer (EU19)	9.00	17.9	0.70 (limited uncontrolled)
Palmer Core Mixer #1 (EU20)	6.0	13.6	0.35 (limited uncontrolled)
Palmer Core Mixer #2 (EU21)	6.0	13.6	0.06 (limited uncontrolled)

*Note process weight rates for the pouring/casting, casting cooling, and shakeout operations in both the iron and aluminum foundry include maximum metal and sand throughputs.

The allowable particulate matter (PM) emission rates from the above facillities were calculated by the following:

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

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

The baghouses for EU14, EU15, EU16 and EU17 shall be in operation at all times when the GOFF shot blaster, the small aluminum shot blaster, the sand blaster, and thermal sand reclamation system are in operation to comply with this limit.

326 IAC 8-1-6 (New Facilities, General Reduction Requirements)
This rule applies to new facilities, constructed after January 1, 1980 that have potential VOC emissions of 25 tons or more per year which are not otherwise regulated by other provisions of 326 IAC 8. None of the new emission units added in this revision have potential VOC emissions that are greater than 25 tons per year. Therefore, the requirements of this rule do not apply.

Testing Requirements

There are no testing requirements applicable to this source as a result of this revision.

Compliance Requirements

Permits issued under 326 IAC 2-8 are required to ensure that sources can demonstrate compliance with applicable state and federal rules on a more or less continuous basis. All state and federal rules contain compliance provisions, however, these provisions do not always fulfill the requirement for a more or less continuous demonstration. When this occurs IDEM, OAQ in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-8-4. As a result, compliance requirements are divided into two sections: Compliance Determination Requirements and Compliance Monitoring Requirements.

Compliance Determination Requirements in Section D of the permit are those conditions that are found more or less directly within state and federal rules and the violation of which serves as grounds for enforcement action. If these conditions are not sufficient to demonstrate continuous compliance, they will be supplemented with Compliance Monitoring Requirements, also 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 approporiate corrective actions within a specific time period.

There are no new compliance monitoring requirements applicable to this source because of this revision. The compliance monitoring requirements for the mechanical sand reclamation unit have been removed since there is no control device and the unit has actual emissions less than 25 tons per year.

Proposed changes to FESOP 035-9977-00061

1. On April 15, 2004, the United States Environmental Protection Agency (U.S. EPA) named 23 Indiana counties and one partial county nonattainment for the new 8-hour ozone standard. The designations became effective on June 15, 2004. Delaware County has been designated as nonattaiment for the 8-hour ozone standard. The following has been added to A.1 General Information:

A.1 General Information [326 IAC 2-8-3(b)]

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

Authorized individual:	~~Aaron Vest~~ **President**
Source Address:	1406 East 18th Street, Muncie, Indiana 47302
Mailing Address:	P.O. Box 2328, Muncie, Indiana 47302
General Source Phone:	(765) -288-2611
SIC Code:	3365, 3321
County Location:	Delaware
Source Location Status:	~~Attainment for all criteria pollutants~~ **Nonattainment for ozone under the 8-hour standard** **Attainment for all other criteria pollutants**
Source Status:	Federally Enforceable State Operating Permit (FESOP) Minor Source, under PSD **and Emission Offset** Rules; Minor Source, Section 112 of the Clean Air Act

2. Section A.2 is revised to include the new units added and to put the sand handling operations, the core and mold making operations, and cleaning/finishing operations under separate headings because each of these are used for both foundries. Also, the reference to the dust collector for the mechanical sand reclamation unit (EU13) has been removed since it no longer exists.

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-8-3(c)(3)]

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

Iron Foundry

(a) One (1) charge handling operation, known as EU1, installed in 1992, capacity: 0.45 tons of gray iron per hour.

(b) Two (2) electric melting furnaces, known as the 1,000 pound and the 500 pound furnaces, known as EU2, installed in 1992, throughput capacity: ~~10.8~~ **0.45** tons of gray iron per ~~day~~ **hour** total limited by single power supply.

(c) One (1) magnesium treatment of ductile iron operation, known as EU3, installed in 1992, capacity: 0.09 tons of iron per hour.

(d) One (1) pouring/casting operation, known as EU4, installed in 1992, capacity: 0.45 tons of ~~gray~~ iron per hour.

(e) One (1) casting cooling operation, known as EU5, installed in 1992, capacity: 0.45 tons of ~~gray~~ iron castings per hour.

(f) One (1) shakeout operation (physically located in the aluminum foundry), known as EU6, installed in 1992, capacity: 0.45 tons of ~~gray~~ iron castings per hour.

Note exhaust fans #1, #2 and #3 are located above the pouring lines and furnaces in the Iron Foundry.

Aluminum Foundry

(g) ~~Four~~ **Six** (~~4~~**6**) electric melting furnaces, consisting of ~~three~~ **five** (~~3~~**5**) (2,300-pound furnaces) and one (1) (700 pound furnace), collectively known as EU7, **with three (3) of the 2,300-pound furnaces and the one (1) 700 pound furnace** installed in 1992**, and two (2) of the 2,300-pound furnaces installed in June 2003**, throughput capacity: ~~0.450~~ **1.39** tons of aluminum per hour for the ~~three~~ **five** (~~3~~ **5**) (2,300 pound furnaces) ~~plus~~ **and** ~~0.350~~ **0.23** tons of aluminum per hour for the one (1) (700 pound furnace), total throughput capacity: ~~0.575~~ **1.62** tons of aluminum per hour.

(h) One (1) natural gas-fired melting furnace, (300 pound furnace) known as EU8, rated at 1.0 million British thermal units per hour, installed in 1980, capacity: ~~0.050~~ **0.09** tons of aluminum per hour.

(i) One (1) magnesium treatment in the aluminum foundry, known as EU9, installed in 1992, capacity: ~~0.53~~ **1.45** tons of magnesium per hour.

(j) One (1) pouring/casting operation, known as EU10, installed in 1980, capacity: ~~0.625~~ **1.71** tons of aluminum per hour.

(k) One (1) casting cooling operation, known as EU11, installed in 1980, capacity: ~~0.625~~ **1.71** tons of aluminum per hour.

(l) One (1) shakeout operation, known as EU12, installed in 1980, capacity: ~~0.625~~ **1.71** tons of aluminum per hour.

Note exhaust fans #5 through #8 are located above or near the cooling lines and the 700 Lb and two (2) 2,300 Lb furnaces in the Aluminum Foundry.

Sand Handling Operations

(m) One (1) mechanical sand reclamation unit (located in the aluminum foundry **and used for both foundries**), known as EU13, ~~equipped with a dust collector,~~ installed in 1991, capacity: 1.5 tons of sand per hour.

(n) One (1) thermal sand reclamation unit (located in the aluminum foundry and used for both foundries), known as EU17, equipped with two (2) natural gas-fired burners, rated at 1.0 million British thermal units per hour each, equipped with a baghouse, installed in 1998, exhausted through Stack 12, capacity: 1 ton of sand per hour.

(o) One (1) Strong Scott sand mixer (located in the iron foundry and used for both foundries), known as EU18, utilizing a phenolic urethane nobake binder system, installed in 1980, capacity: 6.0 tons of sand per hour.

(p) One (1) Kloster sand mixer (located in the aluminum foundry and used for both foundries), known as EU19, utilizing a phenolic urethane nobake binder system, installed in 1994, capacity: 9.0 tons of sand per hour.

(q) One (1) Palmer core mixer #1 (located in the aluminum foundry and used for both foundries), known as EU20, utilizing a phenolic urethane nobake binder system, installed in 1994, capacity: 6.0 tons of sand per hour.

(r) One (1) Palmer core mixer #2 (located in the aluminum foundry and used for both foundries), known as EU21, utilizing an acrylic-epoxy cold box binder system, installed in 1998, capacity: 6.0 tons of sand per hour.

Cleaning/Finishing Operations

~~(n)~~**(s)** One (1) GOFF steel shot blast machine (located in the aluminum foundry **and used for both foundries**), known as EU14, equipped with a baghouse, installed in 1993, exhausted through Stack 4, capacity: ~~0.31~~ **1.096** tons of aluminum or ~~gray~~ iron castings per hour.

~~(o)~~**(t)** One (1) small aluminum shot blast machine (located in the aluminum foundry **and used for both foundries**), known as EU15, equipped with a Viking baghouse ~~(does not have to be operated at all times)~~, installed in 1993, exhausted inside the building, capacity: ~~0.03~~ **0.16** tons of aluminum **or iron** castings per hour.

~~(p)~~**(u)** One (1) sand blaster machine (located in the aluminum foundry **and used for both foundries**), known as EU16, equipped with a Blast-It-All baghouse ~~(does not have to be operated at all times)~~, installed in 1980, exhausted inside the building, capacity: ~~0.03~~ **0.16** tons of aluminum or ~~gray~~ iron castings per hour.

~~(q) One (1) thermal sand reclamation unit (located in the aluminum foundry), known as EU17, equipped with two (2) natural gas-fired burners, rated at 1.0 million British thermal units per hour each, equipped with a baghouse, installed in 1998, exhausted through Stack 12, capacity: 1 ton of sand per hour.~~

~~(r) One (1) Strong Scott sand mixer (located in the iron foundry), known as EU18, utilizing a Novathane binder system, installed in 1980, capacity: 6.0 tons of sand per hour.~~

~~(s) One (1) Kloster sand mixer (located in the aluminum foundry), known as EU19, utilizing a Novathane binder system, installed in 1994, capacity: 9.0 tons of sand per hour.~~

~~(t) One (1) Palmer core mixer #1 (located in the aluminum foundry), known as EU20, utilizing a Novathane binder system, installed in 1994, capacity: 6.0 tons of sand per hour.~~

~~(u) One (1) Palmer core mixer #2 (located in the aluminum foundry), known as EU21, utilizing an Isoset binder system, installed in 1998, capacity: 6.0 tons of sand per hour.~~

Core and Mold Making Operations

(v) U-180 core making operations used for both foundries, identified as EU24, including the following:

(1) One (1) U-180 core machine, utilizing a shell binder system, installed in 1998, capacity: 0.045 tons of cores per hour.

(2) One (1) U-180 core machine, utilizing a shell binder system, installed in January 2004, capacity: 0.045 tons of cores per hour.

(3) Two (2) U-180 core machines, each utilizing a shell binder system, to be installed in 2005, and each with maximum capacity of 0.045 tons of cores per hour.
Note: The above two (2) core machines, on-site, will be refurbished and are not currently operating.

~~(v)~~**(w)** One (1) CB-22 core machine (located in the aluminum foundry **and used for both foundries**), known as EU22, equipped with a caustic soda scrubber (does not have to be operated at all times), installed in 1998, capacity: 0.5 tons of cores per hour.

~~(w)~~**(x)** One (1) Dependable 420 core machine (located in the aluminum foundry **and used for both foundries**), known as EU23, equipped with a caustic soda scrubber (does not have to be operated at all times), installed in 1998, capacity: 0.5 tons of cores per hour.

~~(x) One (1) U-180 core machine, identified as EU24, utilizing a shell binder system, installed in 1998, capacity: 0.045 tons of cores per hour.~~

Additional Operations

(y) One (1) surface coating spray application process (in the mold and core making areas), known as EU26, installed in 1980, capacity: 8,637 pounds of coating materials per year.

(z) Fugitive outdoor waste sand storage and handling, known as EUF1, capacity 20 tons of waste foundry sand.

~~(aa) One (1) paint booth (located in the pattern shop), known as EU25, installed in 1980, removed from service.~~

~~Note exhaust fans #1, #2 and #3 are located above the pouring lines and furnaces in the Iron Foundry. Exhaust fans #5 through #8 are located above or near the cooling lines and the 1,000 Lb and two (2) 2,300 Lb furnaces in the Aluminum Foundry.~~

3. Section D.1 is revised as shown below. For clarity, the emission units in the iron foundry, the aluminum foundry, the sand handling operations, the cleaning/finishing operations, the core and mold making operations, and the additional operations are being separated into separate D sections. Therefore new sections D.2, D.3, and D.4 have been added to the FESOP and the existing section D.2 has been re-numbered as section D.5.

SECTION D.1 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-8-4(10)]:

Iron Foundry

(a) One (1) charge handling operation, known as EU1, installed in 1992, capacity: 0.45 tons of gray iron per hour.

(b) Two (2) electric melting furnaces, known as the 1,000 pound and the 500 pound furnaces, known as EU2, installed in 1992, throughput capacity: ~~10.8~~ **0.45** tons of gray iron per ~~day~~ **hour** total limited by single power supply.

(c) One (1) magnesium treatment of ductile iron operation, known as EU3, installed in 1992, capacity: 0.09 tons of iron per hour.

(d) One (1) pouring/casting operation, known as EU4, installed in 1992, capacity: 0.45 tons of ~~gray~~ iron per hour.

(e) One (1) casting cooling operation, known as EU5, installed in 1992, capacity: 0.45 tons of ~~gray~~ iron castings per hour.

(f) One (1) shakeout operation (physically located in the aluminum foundry), known as EU6, installed in 1992, capacity: 0.45 tons of ~~gray~~ iron castings per hour.

Note
Exhaust fans #1, #2 and #3 are located above the pouring lines and furnaces in the Iron Foundry.

~~**Aluminum Foundry**~~

~~(g) Four (4) electric melting furnaces, consisting of three (3) (2,300-pound furnaces) and one (1) (700 pound furnace), collectively known as EU7, installed in 1992, throughput capacity: 0.450 tons of aluminum per hour for the three (3) (2,300 pound furnaces) plus 0.350 tons of aluminum per hour for the one (1) (700 pound furnace), total throughput capacity: 0.575 tons of aluminum per hour.~~

~~(h) One (1) natural gas-fired melting furnace, (300 pound furnace) known as EU8, rated at 1.0 million British thermal units per hour, installed in 1980, capacity: 0.050 tons of aluminum per hour.~~

~~(i) One (1) magnesium treatment in the aluminum foundry, known as EU9, installed in 1992, capacity: 0.53 tons of magnesium per hour.~~

~~(j) One (1) pouring/casting operation, known as EU10, installed in 1980, capacity: 0.625 tons of aluminum per hour.~~

~~(k) One (1) casting cooling operation, known as EU11, installed in 1980, capacity: 0.625 tons of aluminum per hour.~~

~~(l) One (1) shakeout operation, known as EU12, installed in 1980, capacity: 0.625 tons of aluminum per hour.~~

~~(m) One (1) mechanical sand reclamation unit (located in the aluminum foundry), known as EU13, equipped with a dust collector, installed in 1991, capacity: 1.5 tons of sand per hour.~~

~~(n) One (1) GOFF steel shot blast machine (located in the aluminum foundry), known as EU14, equipped with a baghouse, installed in 1993, exhausted through Stack 4, capacity: 0.31 tons of aluminum or gray iron castings per hour.~~

~~(o) One (1) small aluminum shot blast machine (located in the aluminum foundry), known as EU15, equipped with a Viking baghouse (does not have to be operated at all times), installed in 1993, exhausted inside the building, capacity: 0.03 tons of aluminum castings per hour.~~

~~(p) One (1) sand blaster machine (located in the aluminum foundry), known as EU16, equipped with a Blast-It-All baghouse (does not have to be operated at all times), installed in 1980, exhausted inside the building, capacity: 0.03 tons of aluminum or gray iron castings per hour.~~

~~(q) One (1) thermal sand reclamation unit (located in the aluminum foundry), known as EU17, equipped with two (2) natural gas-fired burners, rated at 1.0 million British thermal units per hour each, equipped with a baghouse, installed in 1998, exhausted through Stack 12, capacity: 1 ton of sand per hour.~~

~~(r) One (1) Strong Scott sand mixer (located in the iron foundry), known as EU18, utilizing a Novathane binder system, installed in 1980, capacity: 6.0 tons of sand per hour.~~

~~(s) One (1) Kloster sand mixer (located in the aluminum foundry), known as EU19, utilizing a Novathane binder system, installed in 1994, capacity: 9.0 tons of sand per hour.~~

~~(t) One (1) Palmer core mixer #1 (located in the aluminum foundry), known as EU20, utilizing a Novathane binder system, installed in 1994, capacity: 6.0 tons of sand per hour.~~

~~(u) One (1) Palmer core mixer #2 (located in the aluminum foundry), known as EU21, utilizing an Isoset binder system), installed in 1998, capacity: 6.0 tons of sand per hour.~~

~~(v) One (1) CB-22 core machine (located in the aluminum foundry), known as EU22, equipped with a caustic soda scrubber (does not have to be operated at all times), installed in 1998, capacity: 0.5 tons of cores per hour.~~

~~(w) One (1) Dependable 420 core machine (located in the aluminum foundry), known as EU23, equipped with a caustic soda scrubber (does not have to be operated at all times), installed in 1998, capacity: 0.5 tons of cores per hour.~~

~~(x) One (1) U-180 core machine, identified as EU24, utilizing a shell binder system, installed in 1998, capacity: 0.045 tons of cores per hour.~~

~~(y) One (1) surface coating spray application process (in the mold and core making areas), known as EU26, installed in 1980, capacity: 8,637 pounds of coating materials per year.~~

~~(z) Fugitive outdoor waste sand storage and handling, known as EUF1, capacity 20 tons of waste foundry sand.~~

~~(aa) One (1) paint booth (located in the pattern shop), known as EU25, installed in 1980, removed from service.~~

~~**Note**~~
~~Exhaust fans #1, #2 and #3 are located above the pouring lines and furnaces in the Iron Foundry. Exhaust fans #5 through #8 are located above or near the cooling lines and the 1,000 Lb and two (2) 2,300 Lb furnaces in the Aluminum Foundry.~~

(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 2-8-4(1)]

D.1.1 **PM and** PM_{10} [326 IAC 2-8-4][326 IAC 2-2]

(a) Pursuant to 326 IAC 2-8-4, **and to render the requirements of 326 IAC 2-2 not applicable,** the ~~hourly PM10 emissions from the individual emission units shall not exceed the following~~ **throughput for the iron foundry shall be limited as follows**:

~~**Operation/Stack ID**~~	~~**Hourly PM10 Emission Limits (pounds per hour)**~~
~~**Iron Foundry**~~	
~~Charge Handling EU1~~	~~0.160~~

~~**Operation/Stack ID**~~	~~**Hourly PM10 Emission Limits (pounds per hour)**~~
~~Two (2) Electric Melting Furnaces (EU2)~~	~~0.387 total~~
~~Magnesium Treatment (EU3)~~	~~0.162~~
~~Pouring/Casting (EU4)~~	~~1.26~~
~~Casting Cooling (EU5)~~	~~0.630~~
~~Shakeout (EU6)~~	~~1.01~~
~~**Aluminum Foundry**~~	
~~Three (3) 2,300lb Melting Furnace (EU7)~~	~~0.255~~ ~~0.255~~ ~~0.255~~
~~1000 lb Melting Furnace (EU7)~~	~~0.213~~
~~300 lb Melting Furnace (EU8)~~	~~0.085~~
~~Magnesium Treatment (EU9)~~	~~0.954~~
~~Pouring/Casting (EU10)~~	~~1.75~~
~~Casting Cooling (EU11)~~	~~0.875~~
~~Shakeout (EU12)~~	~~1.40~~
~~Mechanical Sand Reclamation Unit (EU13)~~	~~2.477~~
~~GOFF Shot Blaster (EU14)~~	~~0.067~~
~~Small Aluminum Shot Blaster (EU15) (uncontrolled)~~	~~0.51~~
~~Sand Blaster (EU16) uncontrolled~~	~~0.51~~
~~Thermal Sand Reclamation Unit (EU17)~~	~~0.067~~
~~Strong Scott Mixer (EU18)~~	~~1.96~~
~~Closter Mixer (EU19)~~	~~3.00~~
~~Palmer Core Mixer #1 (EU20)~~	~~1.96~~
~~Palmer Core Mixer #2 (EU21)~~	~~1.96~~
~~Pattern Painting & Core Release (EU26)~~	~~0.116~~
~~Total~~	~~21.3~~

(1) The total throughput of iron to the iron foundry, including the iron charge handling operation (EU1), the two (2) electric melting furnaces (EU2), the iron pouring/casting operation (EU4), the iron casting cooling operation (EU5), and the iron shakeout operation (EU6) shall not exceed 1,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month;

(2) The throughput of iron to the iron magnesium treatment operation (EU3) shall not exceed 200 tons per twelve (12) consecutive month period, with compliance determined at the end of each month;

(b) The PM emissions for the iron foundry shall be limited as follows:

(1) PM emissions from the iron charge handling operation (EU1) shall not exceed 0.60 pound per ton of iron throughput;

(2) Total PM emissions from the two (2) electric melting furnaces (EU2) shall not exceed 0.90 pound per ton of combined iron throughput;

(3) Total PM emissions from the iron pouring/casting operation (EU4) and the iron casting cooling operation (EU5) shall not exceed 4.2 pounds per ton of iron throughput;

(4) PM emissions from the iron shakeout operation (EU6) shall not exceed 3.2 pounds per ton of iron throughput;

(5) PM emissions from the iron magnesium treatment operation (EU3) shall not exceed 1.80 pounds per ton of iron throughput.

These emission limits will render the requirements of 326 IAC 2-2 not applicable.

(c) Pursuant to 326 IAC 2-8-4, the PM10 emissions for the iron foundry shall be limited as follows:

(1) PM10 emissions from the iron charge handling operation (EU1) shall not exceed 0.36 pound per ton of iron throughput;

(2) Total PM10 emissions from the two (2) electric melting furnaces (EU2) shall not exceed 0.86 pound per ton of combined iron throughput;

(3) Total PM10 emissions from the iron pouring/casting operation (EU4) and the iron casting cooling operation (EU5) shall not exceed 2.06 pound per ton of iron throughput;

(4) PM10 emissions from the iron shakeout operation (EU6) shall not exceed 2.24 pounds per ton of iron throughput;

(5) PM10 emissions from the iron magnesium treatment operation (EU3) shall not exceed 1.80 pounds per ton of iron throughput.

~~(b)~~ Compliance with these PM10 emission limits will satisfy 326 IAC 2-8-4. Therefore, the Part 70 rules (326 IAC 2-7) and 326 IAC 2-2 do not apply.

~~D.1.2 PM [326 IAC 2-2]~~

~~To avoid the requirements of 326 IAC 2-2, the hourly PM emissions from individual emissions units shall not exceed the following:~~

~~**Operation/Stack ID**~~	~~**Hourly PM Emission Limits (pounds per hour)**~~
~~**Iron Foundry**~~	
~~Charge Handling EU1~~	~~0.270~~
~~Two (2) Electric Melting Furnaces (EU2)~~	~~0.405 total~~

~~**Operation/Stack ID**~~	~~**Hourly PM Emission Limits (pounds per hour)**~~
~~Magnesium Treatment (EU3)~~	~~0.162~~
~~Pouring/Casting (EU4)~~	~~1.26~~
~~Casting Cooling (EU5)~~	~~0.630~~
~~Shakeout (EU6)~~	~~1.44~~
~~**Aluminum Foundry**~~	
~~Three (3) 2,300lb Melting Furnace (EU7)~~	~~0.285~~ ~~0.285~~ ~~0.285~~
~~1000 lb Melting Furnace (EU7)~~	~~0.238~~
~~300 lb Melting Furnace (EU8)~~	~~0.095~~
~~Magnesium Treatment (EU9)~~	~~0.954~~
~~Pouring/Casting (EU10)~~	~~1.75~~
~~Casting Cooling (EU11)~~	~~0.875~~
~~Shakeout (EU12)~~	~~2.00~~
~~Mechanical Sand Reclamation Unit (EU13)~~	~~9.37~~
~~GOFF Shot Blaster (EU14)~~	~~0.365~~
~~Small Aluminum Shot Blaster (EU15) (uncontrolled)~~	~~0.51~~
~~Sand Blaster (EU16) uncontrolled~~	~~0.51~~
~~Thermal Sand Reclamation Unit (EU17)~~	~~0.038~~
~~Strong Scott Mixer (EU18)~~	~~7.50~~
~~Closter Mixer (EU19)~~	~~11.2~~
~~Palmer Core Mixer #1 (EU20)~~	~~7.50~~
~~Palmer Core Mixer #2 (EU21)~~	~~7.50~~
~~Pattern Painting & Core Release (EU26)~~	~~0.116~~
~~Total~~	~~55.6~~

D.1.~~3~~**2** Particulate Matter (PM) [326 IAC 6-3-2~~(c)~~]

(a) Pursuant to 326 IAC 6-3**-2** (~~Process Operations~~ **Particulate Emission Limitations for Manufacturing Processes**), the allowable ~~PM~~ **particulate** emission rates from the facilities listed in this section shall not exceed the stated ~~PM~~ **particulate** emission rates listed in the following table:

Emission Unit	Process Weight Rate (tons per hour)	Allowable ~~PM~~ Particulate Emission Rate (pounds per hour)
Iron Foundry		
Charge Handling EU1	0.45	2.40
Two (2) Electric Melting Furnaces (EU2)	0.45 total	2.40 total
Magnesium Treatment (EU3)	0.09	0.817
Pouring/Casting (EU4) **& Casting Cooling (EU5)**	~~0.45~~ **1.038**	~~2.40~~ **4.20**
~~Casting Cooling (EU5)~~	~~0.45~~	~~2.40~~
Shakeout (EU6)	~~0.45~~ **0.519**	~~2.40~~ **2.64**
~~**Aluminum Foundry**~~		
~~Three (3) 2,300lb Melting Furnace (EU7)~~	~~0.15~~ ~~0.15~~ ~~0.15~~	~~1.15~~ ~~1.15~~ ~~1.15~~
~~1000 lb Melting Furnace (EU7)~~	~~0.350~~	~~2.03~~
~~300 lb Melting Furnace (EU8)~~	~~0.05~~	~~0.551~~
~~Magnesium Treatment (EU9)~~	~~0.53~~	~~2.68~~
~~Pouring/Casting (EU10)~~	~~0.625~~	~~2.99~~
~~Casting Cooling (EU11)~~	~~0.625~~	~~2.99~~
~~Shakeout (EU12)~~	~~0.625~~	~~2.99~~
~~Mechanical Sand Reclamation Unit (EU13)~~	~~1.5~~	~~5.38~~
~~GOFF Shot Blaster (EU14)~~	~~0.31~~	~~1.87~~
~~Small Aluminum Shot Blaster (EU15) (uncontrolled)~~	~~0.03~~	~~0.551~~
~~Sand Blaster (EU16) uncontrolled~~	~~0.03~~	~~0.551~~
~~Thermal Sand Reclamation Unit (EU17)~~	~~1.00~~	~~4.10~~
~~Strong Scott Mixer (EU18)~~	~~6.00~~	~~13.6~~
~~Closter Mixer (EU19)~~	~~9.00~~	~~17.9~~
~~Palmer Core Mixer #1 (EU20)~~	~~6.0~~	~~13.6~~
~~Palmer Core Mixer #2 (EU21)~~	~~6.0~~	~~13.6~~

(b) The pounds per hour limitations were calculated using the following equation:

Interpolation ~~and extrapolation~~ 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

~~D.1.4 Volatile Organic Compounds [326 IAC 8-1-6]~~

~~Any change or modification which may increase the potential emissions of VOC to twenty-five (25) tons per year from the core machines (EU22 - EU24) and/or pattern parting booth and the core release application area (EU26) must be approved by the Office of Air Management before such change may occur.~~

~~D.1.5 Material Usage~~

~~The permittee shall not melt any post consumer aluminum and/or gray iron materials at this source. Only in-house aluminum and/or gray iron returns from this source and/or in-house returns from other sources where the composition of the purchased returns have at least the same quality of the source's own in-house aluminum and/or gray iron returns shall be melted. Any other sources' aluminum and/or gray iron returns shall be specified and controlled contractually. Compliance with this makes the source not 1 of the 28 major PSD source categories.~~

~~D.1.6 Furnace Operations~~

~~The two (2) electric melting furnaces, known as the 1,000 pound and the 500 pound furnaces, known as EU2 shall not exceed a melt throughput of 0.45 tons of iron per hour.~~

~~D.1.7 Preventive Maintenance Plan [326 IAC 2-8-4(9)]~~

~~A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for the two (2) sand mixers and the two core (2) mixers, known as EU18 through EU21 and their control devices.~~

~~Compliance Monitoring Requirements [326 IAC 2-8-4] [326 IAC 2-8-5(a)(1)]~~

~~D.1.8 Visible Emissions Notations~~

~~(a) Visible emission notations of the four (4) mixers (EU18 - EU21), the mechanical sand reclamation unit (EU13) and stack exhausts 4 and 12 for the GOFF blaster (EU14) and the thermal sand reclamation unit (EU17), respectively, shall be performed once per shift during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.~~

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

~~(c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.~~

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

~~(e) The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed.~~

~~D.1.9 Parametric Monitoring~~

~~The Permittee shall record the total static pressure drop across the dust collectors/baghouses used in conjunction with the mechanical sand reclamation unit (EU13), the GOFF blaster (EU14) and the thermal sand reclamation unit (EU17), at least once per shift when these processes are in operation when venting to the atmosphere. Unless operated under conditions for which the Compliance Response Plan specifies otherwise, the pressure drop across the baghouses shall be maintained within the range of 2.0 and 8.0 inches of water for EU13, EU14 and EU17 or a range established during the latest stack test. The Compliance Response Plan for these units shall contain trouble-shooting contingency and response steps for when the pressure reading is outside of the above-mentioned range for any one reading.~~

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

~~D.1.10 Baghouse Inspections~~

~~An inspection shall be performed each calender quarter of all bags controlling the blasting and sand reclamation operations when venting to the atmosphere. A baghouse inspection shall be performed within three months of redirecting vents to the atmosphere and every three months thereafter. Inspections are optional when venting indoors. All defective bags shall be replaced.~~

~~D.1.11 Broken or Failed Bag Detection~~

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

~~(a) The affected compartments will be shut down immediately until the failed units have been repaired or replaced. Within eight (8) hours of the determination of failure, response steps according to the timetable described in the Compliance Response Plan shall be initiated. For any failure with corresponding response steps and timetable not described in the Compliance Response Plan, response steps shall be devised within eight (8) hours of discovery of the failure and shall include a timetable for completion. 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 single compartment baghouses, failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).~~

~~D.1.12 Quality of Metal Melted~~

~~The permittee shall make a determination of the type, quality and origin of all materials melted at this source.~~

Record Keeping and Reporting Requirement [326 IAC 2-8-4(3)] [326 IAC 2-8-16]

D.1.~~1~~3 Record Keeping Requirements

(a) ~~To document compliance with Condition D.1.8, the Permittee shall maintain records of daily visible emission notations of the four (4) mixers (EU18 - EU21), the mechanical sand reclamation unit (EU13) and the stack exhausts 4 and 12 for the GOFF blaster (EU14) and thermal sand reclamation unit (EU17), respectively.~~ **To document compliance with Condition D.1.1, the Permittee shall maintain records of iron throughput as applicable for each of the facilities included in Condition D.1.1.**

~~(b) To document compliance with Condition D.1.9, the Permittee shall maintain the following:~~

~~(1) Weekly records of the following operational parameters during normal operation when venting to the atmosphere:~~

~~Inlet and outlet differential static pressure.~~

~~(2) Documentation of all response steps implemented, per event.~~

~~(3) Operation and preventive maintenance logs, including work purchases orders, shall be maintained.~~

~~(4) Quality Assurance/Quality Control (QA/QC) procedures.~~

~~(5) Operator standard operating procedures (SOP).~~

~~(6) Manufacturer's specifications or its equivalent.~~

~~(7) Equipment "troubleshooting" contingency plan.~~

~~(8) Documentation of the dates vents are redirected.~~

~~(c) To document compliance with Condition D.1.10, the Permittee shall maintain records of the results of the inspections required under Condition D.1.10 and the dates the vents are redirected.~~

~~(d) To document compliance with Condition D.1.5, the Permittee shall maintain records of determinations of the type, quality and origin of all materials melted at this source required under Condition D.1.12.~~

~~(e)~~**(b)** All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.1.4 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.1.1 shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

SECTION D.2 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-8-4(10)]:

Aluminum Foundry

(g) Six (6) electric melting furnaces, consisting of five (5) (2,300-pound furnaces) and one (1) (700 pound furnace), collectively known as EU7, with three (3) of the 2,300-pound furnaces and the one (1) 700 pound furnace installed in 1992, and two (2) of the 2,300-pound furnaces installed in June 2003, throughput capacity: 1.39 tons of aluminum per hour for the five (5) (2,300 pound furnaces) and 0.23 tons of aluminum per hour for the one (1) (700 pound furnace), total throughput capacity: 1.62 tons of aluminum per hour.

(h) One (1) natural gas-fired melting furnace, (300 pound furnace) known as EU8, rated at 1.0 million British thermal units per hour, installed in 1980, capacity: ~~0.050~~ 0.09 tons of aluminum per hour.

(i) One (1) magnesium treatment in the aluminum foundry, known as EU9, installed in 1992, capacity: ~~0.53~~ 1.45 tons of magnesium per hour.

(j) One (1) pouring/casting operation, known as EU10, installed in 1980, capacity: ~~0.625~~ 1.71 tons of aluminum per hour.

(k) One (1) casting cooling operation, known as EU11, installed in 1980, capacity: ~~0.625~~ 1.71 tons of aluminum per hour.

(l) One (1) shakeout operation, known as EU12, installed in 1980, capacity: ~~0.625~~ 1.71 tons of aluminum per hour.

Note exhaust fans #5 through #8 are located above or near the cooling lines and the 700 Lb and two (2) 2,300 Lb furnaces in the Aluminum Foundry.

(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 2-8-4(1)]

D.2.1 PM and PM_{10} [326 IAC 2-8-4][326 IAC 2-2]

(a) Pursuant to 326 IAC 2-8-4, and to render the requirements of 326 IAC 2-2 not applicable, the throughput for the aluminum foundry shall be limited as follows:

(1) The total throughput of aluminum to the aluminum foundry, including the five (5) 2,300 lb melting furnaces and one (1) 700 lb melting furnace (EU7), the one (1) 300 lb melting furnace (EU8), the aluminum pouring/casting operation (EU10), the aluminum casting cooling operation (EU11), and the aluminum shakeout operation (EU12), shall not exceed 15,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month;

(2) The throughput of aluminum to the aluminum magnesium treatment operation (EU9) shall not exceed 12,750 tons per twelve (12) consecutive month period, with compliance determined at the end of each month;

(b) The PM emissions for the aluminum foundry shall be limited as follows:

(1) Total PM emissions from the five (5) 2,300 lb melting furnaces and one (1) 700 lb melting furnace (EU7), and the one (1) 300 lb melting furnace (EU8) shall not exceed 1.90 pounds per ton of aluminum throughput;

(2) Total PM emissions from the aluminum pouring/casting operation (EU10) and the aluminum casting cooling operation (EU11) shall not exceed 4.2 pounds per ton of aluminum throughput;

(3) PM emissions from the aluminum shakeout operation (EU12) shall not exceed 3.2 pounds per ton of iron throughput;

(4) PM emissions from the aluminum magnesium treatment operation (EU9) shall not exceed 1.80 pounds per ton of aluminum throughput;

These emission limits will render the requirements of 326 IAC 2-2 not applicable.

(c) Pursuant to 326 IAC 2-8-4, the PM10 emissions for the aluminum foundry shall be limited as follows:

(1) Total PM10 emissions from the five (5) 2,300 lb melting furnaces and one (1) 700 lb melting furnace (EU7), and the one (1) 300 lb melting furnace (EU8) shall not exceed 1.70 pounds per ton of aluminum throughput;

(2) Total PM10 emissions from the aluminum pouring/casting operation (EU10) and the aluminum casting cooling operation (EU11) shall not exceed 2.06 pound per ton of aluminum throughput;

(3) PM10 emissions from the aluminum shakeout operation (EU12) shall not exceed 2.24 pounds per ton of iron throughput;

(4) PM10 emissions from the aluminum magnesium treatment operation (EU9) shall not exceed 1.80 pounds per ton of aluminum throughput.

Compliance with these PM10 emission limits will satisfy 326 IAC 2-8-4. Therefore, the Part 70 rules (326 IAC 2-7) and 326 IAC 2-2 do not apply.

D.2.2 Particulate Matter (PM) [326 IAC 6-3-2]

(a) Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the allowable particulate emission rates from the facilities listed in this section shall not exceed the stated particulate emission rates listed in the following table:

Emission Unit	Process Weight Rate (tons per hour)	Allowable Particulate Emission Rate (pounds per hour)
Aluminum Foundry		
Five (5) 2,300lb Melting Furnace (EU7)	**1.39 (0.278 each)**	**5.11 (1.02 each)**
700 lb Melting Furnace (EU7)	**0.23**	**1.53**
300 lb Melting Furnace (EU8)	**0.09**	**0.82**
Magnesium Treatment (EU9)	**1.45**	**5.26**
Pouring/Casting (EU10) & Casting Cooling (EU11)	**3.972**	**10.33**
Shakeout (EU12)	**1.986**	**6.49**

D.2.3 Material Usage [40 CFR 63, Subpart RRR]

The Permittee shall only melt clean charge, customer returns, or internal scrap in the aluminum foundry as defined under 40 CFR 63.1503. Therefore, the requirements of 40 CFR 63, Subpart RRR do not apply.

Record Keeping and Reporting Requirement [326 IAC 2-8-4(3)] [326 IAC 2-8-16]

D.2.4 Record Keeping Requirements

(a) To document compliance with Condition D.2.1, the Permittee shall maintain records of aluminum throughput as applicable for each of the facilities included in Condition D.2.1.

(b) To document compliance with Condition D.2.3, the Permittee shall maintain records of determinations of the type, quality and origin of all materials melted at this source required under Condition D.2.3.

(c) All records shall be maintained in accordance with Section C - General Record Keeping.

D.2.5 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.2.1 shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

SECTION D.3 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-8-4(10)]:

Sand Handling Operations

(m) One (1) mechanical sand reclamation unit (located in the aluminum foundry and used for both foundries), known as EU13, installed in 1991, capacity: 1.5 tons of sand per hour.

(n) One (1) thermal sand reclamation unit (located in the aluminum foundry and used for both foundries), known as EU17, equipped with two (2) natural gas-fired burners, rated at 1.0 million British thermal units per hour each, equipped with a baghouse, installed in 1998, exhausted through Stack 12, capacity: 1 ton of sand per hour.

(o) One (1) Strong Scott sand mixer (located in the iron foundry and used for both foundries), known as EU18, utilizing a phenolic urethane nobake binder system, installed in 1980, capacity: 6.0 tons of sand per hour.

(p) One (1) Kloster sand mixer (located in the aluminum foundry and used for both foundries), known as EU19, utilizing a phenolic urethane nobake binder system, installed in 1994, capacity: 9.0 tons of sand per hour.

(q) One (1) Palmer core mixer #1 (located in the aluminum foundry and used for both foundries), known as EU20, utilizing a phenolic urethane nobake binder system, installed in 1994, capacity: 6.0 tons of sand per hour.

(r) One (1) Palmer core mixer #2 (located in the aluminum foundry and used for both foundries), known as EU21, utilizing an acrylic-epoxy cold box binder system, installed in 1998, capacity: 6.0 tons of sand per hour.

(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 2-8-4(1)]

D.3.1 PM and PM_{10} [326 IAC 2-8-4][326 IAC 2-2]

(a) Pursuant to 326 IAC 2-8-4, and to render the requirements of 326 IAC 2-2 not applicable, the throughput for the sand handling operations shall be limited as follows:

(1) The combined throughput of sand to the Kloster Sand Mixer (EU19), the Palmer Core Mixer #1 (EU20), the Palmer Core Mixer #2 (EU21), and the Strong Scott Sand Mixer (EU18) shall not exceed 2,825 tons per twelve (12) consecutive month period, with compliance determined at the end of each month;

(2) The throughput of sand to the mechanical sand reclamation unit (EU13) shall not exceed 3,025 tons per twelve (12) consecutive month period, with compliance determined at the end of each month;

(3) The throughput of sand to the thermal sand reclamation unit (EU17) shall not exceed 3,025 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(b) The PM emissions for the sand handling operations shall be limited as follows:

(1) Total PM emissions from the Kloster Sand Mixer (EU19), the Palmer Core Mixer #1 (EU20), the Palmer Core Mixer #2 (EU21), and the Strong Scott Sand Mixer (EU18) shall not exceed 0.37 pounds per ton of sand throughput;

(2) PM emissions from the mechanical sand reclamation unit (EU13) shall not exceed 3.6 pounds per ton of sand throughput;

(3) PM emissions from the baghouse controlling the thermal sand reclamation unit (EU17) shall not exceed 0.046 pound per ton of sand throughput;

These emission limits will render the requirements of 326 IAC 2-2 not applicable.

(c) Pursuant to 326 IAC 2-8-4, the PM10 emissions for the sand handling operations shall be limited as follows:

(1) Total PM10 emissions from the Kloster Sand Mixer (EU19), the Palmer Core Mixer #1 (EU20), the Palmer Core Mixer #2 (EU21), and the Strong Scott Sand Mixer (EU18) shall not exceed 0.54 pounds per ton of sand throughput;

(2) PM10 emissions from the mechanical sand reclamation unit (EU13) shall not exceed 0.54 pounds per ton of sand throughput;

(3) PM10 emissions from the baghouse controlling the thermal sand reclamation unit (EU17) shall not exceed 15.75 pounds per ton of sand throughput;

Compliance with these PM10 emission limits will satisfy 326 IAC 2-8-4. Therefore, the Part 70 rules (326 IAC 2-7) and 326 IAC 2-2 do not apply.

D.3.2 Particulate Matter (PM) [326 IAC 6-3-2]

(a) Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the allowable particulate emission rates from the facilities listed in this section shall not exceed the stated particulate emission rates listed in the following table:

Emission Unit	Process Weight Rate (tons per hour)	Allowable Particulate Emission Rate (pounds per hour)
Mechanical Sand Reclamation Unit (EU13)	1.5	5.38
Thermal Sand Reclamation Unit (EU17)	1.00	4.10
Strong Scott Mixer (EU18)	6.00	13.6
Closter Mixer (EU19)	9.00	17.9
Palmer Core Mixer #1 (EU20)	6.0	13.6
Palmer Core Mixer #2 (EU21)	6.0	13.6

D.3.3 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for the thermal sand reclamation unit (EU17), the two (2) sand mixers and the two core (2) mixers, known as EU18 through EU21, and their control devices.

Compliance Determination Requirements

D.3.4 Particulate Control

(a) In order to comply with conditions D.3.1 and D.3.2, the baghouse for particulate control shall be in operation and control emissions from the thermal sand reclamation unit (EU17) at all times that the thermal sand reclamation unit (EU17) is in operation.

(b) In order to comply with condition D.3.1, the inherent moisture and binder resins shall be used with the Strong Scott and Kloster sand mixers and the two (2) Palmer core mixers at all times that the mixers are in operation.

Compliance Monitoring Requirements [326 IAC 2-8-4] [326 IAC 2-8-5(a)(1)]

D.3.5 Visible Emissions Notations

(a) Visible emission notations of the four (4) mixers (EU18 - EU21) and the thermal sand reclamation unit (EU17), respectively, 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) The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed. Failure to take response steps in accordance with Section C - Compliance Response Plan – Preparation, Implementation, Records and Reports shall be considered a deviation from this permit.

D.3.6 Parametric Monitoring

The Permittee shall record the total static pressure drop across the baghouse used in conjunction with the thermal sand reclamation unit (EU17) at least once per day when the thermal sand reclamation unit is in operation when venting to the atmosphere. Unless operated under conditions for which the Compliance Response Plan specifies otherwise, the pressure drop across the baghouse shall be maintained within the range of 2.0 and 8.0 inches of water or a range established during the latest stack test. The Compliance Response Plan for these units shall contain trouble-shooting contingency and response steps for when the pressure reading is outside of the above mentioned range for any one reading.

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

D.3.7 Baghouse Inspections

An inspection shall be performed each calender quarter of all bags controlling the thermal sand reclamation unit when venting to the atmosphere. A baghouse inspection shall be performed within three months of redirecting vents to the atmosphere and every three months thereafter. Inspections are optional when venting indoors. All defective bags shall be replaced.

D.3.8 Broken or Failed Bag Detection

In the event that bag failure has been observed:

(a) For multi-compartment units, the affected compartments will be shut down immediately until the failed units have been repaired or replaced. Within eight (8) business hours of the determination of failure, response steps according to the timetable described in the Compliance Response Plan shall be initiated. For any failure with corresponding response steps and timetable not described in the Compliance Response Plan, response steps shall be devised within eight (8) business hours of discovery of the failure and shall include a timetable for completion. Failure to take response steps in accordance with Section C - Compliance Response Plan -Preparation, Implementation, Records, and Reports, shall be considered a deviation from this permit. If operations continue after bag failure is observed and it will be 10 days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

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

Record Keeping and Reporting Requirement [326 IAC 2-8-4(3)] [326 IAC 2-8-16]

D.3.9 Record Keeping Requirements

(a) To document compliance with Condition D.3.5, the Permittee shall maintain records of daily visible emission notations of the four (4) mixers (EU18 - EU21) and the thermal sand reclamation unit (EU17), respectively.

(b) To document compliance with Condition D.3.6, the Permittee shall maintain the following:

(1) Daily records of the total static pressure drop during normal operation when venting to the atmosphere.

(2) Documentation of the dates vents are redirected.

(c) To document compliance with Condition D.3.7, the Permittee shall maintain records of the results of the inspections required under Condition D.3.7 and the dates the vents are redirected.

(d) All records shall be maintained in accordance with Section C - General Record Keeping

D.3.10 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.3.1 shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

SECTION D.4 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-8-4(10)]:

Cleaning/Finishing Operations

(s) One (1) GOFF steel shot blast machine (located in the aluminum foundry and used for both foundries), known as EU14, equipped with a baghouse, installed in 1993, exhausted through Stack 4, capacity: 1.096 tons of aluminum or iron castings per hour.

(t) One (1) small aluminum shot blast machine (located in the aluminum foundry and used for both foundries), known as EU15, equipped with a Viking baghouse, installed in 1993, exhausted inside the building, capacity: 0.16 tons of aluminum or iron castings per hour.

(u) One (1) sand blaster machine (located in the aluminum foundry and used for both foundries), known as EU16, equipped with a Blast-It-All baghouse, installed in 1980, exhausted inside the building, capacity: 0.16 tons of aluminum or iron castings per hour.

Core and Mold Making Operations

(v) U-180 core making operations used for both foundries, identified as EU24, including the following:

(1) One (1) U-180 core machine, utilizing a shell binder system, installed in 1998, capacity: 0.045 tons of cores per hour.

(2) One (1) U-180 core machine, utilizing a shell binder system, installed in January 2004, capacity: 0.045 tons of cores per hour.

(3) Two (2) U-180 core machines, each utilizing a shell binder system, to be installed in 2005, and each with maximum capacity of 0.045 tons of cores per hour.

Note: The above two (2) core machines, on-site, will be refurbished and are not currently operating.

(w) One (1) CB-22 core machine (located in the aluminum foundry and used for both foundries), known as EU22, equipped with a caustic soda scrubber (does not have to be operated at all times), installed in 1998, capacity: 0.5 tons of cores per hour.

(x) One (1) Dependable 420 core machine (located in the aluminum foundry and used for both foundries), known as EU23, equipped with a caustic soda scrubber (does not have to be operated at all times), installed in 1998, capacity: 0.5 tons of cores per hour.

Additional Operations

(y) One (1) surface coating spray application process (in the mold and core making areas), known as EU26, installed in 1980, capacity: 8,637 pounds of coating materials per year.

(z) Fugitive outdoor waste sand storage and handling, known as EUF1, capacity 20 tons of waste foundry sand.

(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 2-8-4(1)]

D.4.1 PM and PM_{10} [326 IAC 2-8-4][326 IAC 2-2]

(a) Pursuant to 326 IAC 2-8-4, and to render the requirements of 326 IAC 2-2 not applicable, the throughput for the cleaning/finishing operations shall be limited as follows:

(1) The throughput of metal castings to the GOFF shot blast machine (EU14) shall not exceed 9,600 tons per twelve (12) consecutive month period, with compliance determined at the end of each month;

(2) The throughput of metal castings to the small shot blast machine (EU15) shall not exceed 1,440 tons per twelve (12) consecutive month period, with compliance determined at the end of each month;

(3) The throughput of metal castings to the sand blaster machine (EU16) shall not exceed 1,440 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(b) The PM emissions for the cleaning/finishing operations shall be limited as follows:

(1) The PM emissions from the baghouse controlling the GOFF shot blast machine (EU14) shall not exceed 0.34 pound per ton of metal castings throughput;

(2) The PM emissions from the baghouse controlling the small shot blast machine (EU15) shall not exceed 0.34 pound per ton of metal castings throughput;

(3) The PM emissions from the baghouse controlling the sand blaster machine (EU16) shall not exceed 0.34 pound per ton of metal castings throughput.

These emission limits will render the requirements of 326 IAC 2-2 not applicable.

(c) Pursuant to 326 IAC 2-8-4, the PM10 emissions for the sand handling operations shall be limited as follows:

(1) The PM10 emissions from the baghouse controlling the GOFF shot blast machine (EU14) shall not exceed 1.7 pounds per ton of metal castings throughput;

(2) The PM10 emissions from the baghouse controlling the small shot blast machine (EU15) shall not exceed 1.7 pounds per ton of metal castings throughput;

(3) The PM10 emissions from the baghouse controlling the sand blaster machine (EU16) shall not exceed 1.7 pounds per ton of metal castings throughput.

Compliance with these PM10 emission limits will satisfy 326 IAC 2-8-4. Therefore, the Part 70 rules (326 IAC 2-7) and 326 IAC 2-2 do not apply.

D.4.2 Particulate Matter (PM) [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the allowable particulate emission rates from the facilities listed in this section shall not exceed the stated particulate emission rates listed in the following table:

Emission Unit	Process Weight Rate (tons per hour)	Allowable Particulate Emission Rate (pounds per hour)
GOFF Shot Blaster (EU14)	1.096	4.36
Small Aluminum Shot Blaster (EU15)	0.16	1.2
Sand Blaster (EU16)	0.16	1.2

D.4.3 Volatile Organic Compounds [326 IAC 8-1-6]

Any change or modification which may increase the potential emissions of VOC to twenty-five (25) tons per year from the core machines (EU22 - EU24), the four (4) U-180 core machines, and/or pattern parting booth and the core release application area (EU26) must be approved by the Office of Air Quality before such change may occur.

D.4.4 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for the two (2) shot blaster machines (EU14 and EU15) and the one (1) sand blaster machine (EU16) and their control devices.

Compliance Determination Requirements

D.4.5 Particulate Control

In order to comply with conditions D.4.1 and D.4.2, the baghouses for particulate control shall be in operation and control emissions from the two (2) shot blaster machines (EU14 and EU15) and the one (1) sand blaster machine (EU16) at all times that the two (2) shot blaster machines (EU14 and EU15) and the one (1) sand blaster machine (EU16) are in operation.

Compliance Monitoring Requirements [326 IAC 2-8-4] [326 IAC 2-8-5(a)(1)]

D.4.6 Visible Emissions Notations

(a) Visible emission notations of the stack exhausts 4 and 12 for the GOFF shot blaster (EU14) 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) The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed. Failure to take response steps in accordance with Section C - Compliance Response Plan – Preparation, Implementation, Records and Reports shall be considered a deviation from this permit.

D.4.7 Parametric Monitoring

The Permittee shall record the total static pressure drop across the baghouse used in conjunction with the GOFF shot blaster (EU14) at least once per day when the GOFF shot blaster is in operation when venting to the atmosphere. Unless operated under conditions for which the Compliance Response Plan specifies otherwise, the pressure drop across the baghouse shall be maintained within the range of 2.0 and 8.0 inches of water or a range established during the latest stack test. The Compliance Response Plan for these units shall contain trouble-shooting contingency and response steps for when the pressure reading is outside of the above mentioned range for any one reading.

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

D.4.8 Baghouse Inspections

An inspection shall be performed each calender quarter of all bags controlling the blasting operations when venting to the atmosphere. A baghouse inspection shall be performed within three months of redirecting vents to the atmosphere and every three months thereafter. Inspections are optional when venting indoors. All defective bags shall be replaced.

D.4.9 Broken or Failed Bag Detection

In the event that bag failure has been observed:

(a) For multi-compartment units, the affected compartments will be shut down immediately until the failed units have been repaired or replaced. Within eight (8) business hours of the determination of failure, response steps according to the timetable described in the Compliance Response Plan shall be initiated. For any failure with corresponding response steps and timetable not described in the Compliance Response Plan, response steps shall be devised within eight (8) business hours of discovery of the failure and shall include a timetable for completion. Failure to take response steps in accordance with Section C - Compliance Response Plan -Preparation, Implementation, Records, and Reports, shall be considered a deviation from this permit. If operations continue after bag failure is observed and it will be 10 days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

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

Record Keeping and Reporting Requirement [326 IAC 2-8-4(3)] [326 IAC 2-8-16]

D.4.10 Record Keeping Requirements

(a) To document compliance with Condition D.4.6, the Permittee shall maintain records of daily visible emission notations of the stack exhausts 4 and 12 for the GOFF shot blaster (EU14).

(b) To document compliance with Condition D.4.7, the Permittee shall maintain the following:

(1) Daily records of the total static pressure drop during normal operation when venting to the atmosphere.

(2) Documentation of the dates vents are redirected.

(c) To document compliance with Condition D.4.8, the Permittee shall maintain records of the results of the inspections required under Condition D.4.8 and the dates the vents are redirected.

(d) All records shall be maintained in accordance with Section C - General Record Keeping.

D.4.11 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.4.1 shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

4. Quarterly report forms for the limits in Conditions D.1.1, D.2.1, D.3.1, and D.4.1 have been included in the FESOP as shown on the following pages:

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

FESOP Quarterly Report

Source Name: Muncie Casting Corporation
Source Address: 1406 East 18th Street, Muncie, Indiana 47302
Mailing Address: P.O. Box 2328, Muncie, Indiana 47302
FESOP No.: F035-9977-00061
Facility: Iron charge handling (EU1), two (2) iron melt furnaces (EU2), iron magnesium treatment (EU3), iron pouring/casting (EU4), iron casting cooling (EU5), iron shakeout (EU6)
Parameter: Iron throughput to limit PM and PM10 emissions
Limit: The total throughput of iron to the iron foundry, including EU1, EU2, EU4, EU5, and EU6 shall not exceed 1,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month;

The throughput of iron to the iron magnesium treatment operation (EU3) shall not exceed 200 tons per twelve (12) consecutive month period, with compliance determined at the end of each month;

YEAR:_____

Month	Unit ID	Column 1	Column 2	Column 1 + Column 2
		Iron Throughput This Month (tons)	Iron Throughput Previous 11 Months (tons)	12 Month Total Iron Throughput (tons)
Month 1	EU1, EU2, EU4, EU5, EU6			
	EU3			
Month 2	EU1, EU2, EU4, EU5, EU6			
	EU3			
Month 3	EU1, EU2, EU4, EU5, EU6			
	EU3			

☐ No deviation occurred in this quarter.

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

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

Attach a signed certification to complete this report.

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

FESOP Quarterly Report

Source Name: Muncie Casting Corporation
Source Address: 1406 East 18th Street, Muncie, Indiana 47302
Mailing Address: P.O. Box 2328, Muncie, Indiana 47302
FESOP No.: F035-9977-00061
Facility: Five (5) 2300 lb and one (1) 700 lb melt furnaces (EU7), one (1) 300 lb melt furnace (EU8), aluminum magnesium treatment (EU9), aluminum pouring/casting (EU10), aluminum casting cooling (EU11), aluminum shakeout (EU12)
Parameter: Aluminum throughput to limit PM and PM10 emissions
Limit: The total throughput of aluminum to the aluminum foundry, including the five (5) 2,300 lb melting furnaces and one (1) 700 lb melting furnace (EU7), the one (1) 300 lb melting furnace (EU8), the aluminum pouring/casting operation (EU10), the aluminum casting cooling operation (EU11), and the aluminum shakeout operation (EU12), shall not exceed 15,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month;

The throughput of aluminum to the aluminum magnesium treatment operation (EU9) shall not exceed 12,750 tons per twelve (12) consecutive month period, with compliance determined at the end of each month;

YEAR:_____

Month	Unit ID	Column 1	Column 2	Column 1 + Column 2
		Aluminum Throughput This Month (tons)	Aluminum Throughput Previous 11 Months (tons)	12 Month Total Aluminum Throughput (tons)
Month 1	EU7, EU8, EU10, EU11, EU12			
	EU9			
Month 2	EU7, EU8, EU10, EU11, EU12			
	EU9			
Month 3	EU7, EU8, EU10, EU11, EU12			
	EU9			

☐ No deviation occurred in this quarter.

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

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

Attach a signed certification to complete this report.

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

FESOP Quarterly Report

Source Name: Muncie Casting Corporation
Source Address: 1406 East 18th Street, Muncie, Indiana 47302
Mailing Address: P.O. Box 2328, Muncie, Indiana 47302
FESOP No.: F035-9977-00061
Facility: Kloster Sand Mixer (EU19), Palmer Core Mixer #1 (EU20), Palmer Core Mixer #2 (EU21), Strong Scott Sand Mixer (EU18)
Parameter: Sand throughput to limit PM and PM10 emissions
Limit: The combined throughput of sand to EU18, EU19, EU20, and EU21 shall not exceed 2,825 tons per twelve (12) consecutive month period.

YEAR:_____

Month	Column 1	Column 2	Column 1 + Column 2
	Sand Throughput This Month (tons)	Sand Throughput Previous 11 Months (tons)	12 Month Total Sand Throughput (tons)
Month 1			
Month 2			
Month 3			

☐ No deviation occurred in this quarter.

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

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

Attach a signed certification to complete this report.

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

FESOP Quarterly Report

Source Name: Muncie Casting Corporation
Source Address: 1406 East 18th Street, Muncie, Indiana 47302
Mailing Address: P.O. Box 2328, Muncie, Indiana 47302
FESOP No.: F035-9977-00061
Facility: mechanical sand reclamation unit (EU13), thermal sand reclamation unit (EU17)
Parameter: Sand throughput to limit PM and PM10 emissions
Limit: The throughput of sand to the mechanical sand reclamation unit (EU13) shall not exceed 3,025 tons per twelve (12) consecutive month period, with compliance determined at the end of each month;

The throughput of sand to the thermal sand reclamation unit (EU17) shall not exceed 3,025 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

YEAR:_____

Month	Unit ID	Column 1	Column 2	Column 1 + Column 2
		Sand Throughput This Month (tons)	Sand Throughput Previous 11 Months (tons)	12 Month Total Sand Throughput (tons)
Month 1	EU13			
	EU17			
Month 2	EU13			
	EU17			
Month 3	EU13			
	EU17			

☐ No deviation occurred in this quarter.

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

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

Attach a signed certification to complete this report.

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

FESOP Quarterly Report

Source Name: Muncie Casting Corporation
Source Address: 1406 East 18th Street, Muncie, Indiana 47302
Mailing Address: P.O. Box 2328, Muncie, Indiana 47302
FESOP No.: F035-9977-00061
Facility: GOFF shot blast machine (EU14), small shot blast machine (EU15), sand blaster machine (EU16)
Parameter: Metal casting throughput to limit PM and PM10 emissions
Limit: The throughput of metal castings to the GOFF shot blast machine (EU14) shall not exceed 9,600 tons per twelve (12) consecutive month period, with compliance determined at the end of each month;

The throughput of metal castings to the small shot blast machine (EU15) shall not exceed 1,440 tons per twelve (12) consecutive month period, with compliance determined at the end of each month;

The throughput of metal castings to the sand blaster machine (EU16) shall not exceed 1,440 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

YEAR:_____

Month	Unit ID	Column 1	Column 2	Column 1 + Column 2
		Metal Casting Throughput This Month (tons)	Metal Casting Throughput Previous 11 Months (tons)	12 Month Total Metal Casting Throughput (tons)
Month 1	EU14			
	EU15			
	EU16			
Month 2	EU14			
	EU15			
	EU16			
Month 3	EU14			
	EU15			
	EU16			

☐ No deviation occurred in this quarter.

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

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

Attach a signed certification to complete this report.

Conclusion

The permit revision shall be subject to the conditions of the attached proposed FESOP Significant Permit Revision No. 035-19855-00061.

Appendix A: Emission Calculations
Summary of Emission Calculations

Company Name: Muncie Casting Corporation
Address City IN Zip: 1406 East 18th Street, Muncie, Indiana 47302
Permit Number: SPR 035-19855-00061
Reviewer: Trish Earls/EVP

Uncontrolled Potential Emissions (tons/year)

	Emissions Generating Activity						
Pollutant	**Aluminum Melting & Casting Operations**	**Iron Melting & Casting Operations**	**Sand Handling**	**Cleaning/Finishing Process**	**U-180 Core Making Operations**	**Phenolic Urethane No-bake Core Making Operations**	**TOTAL**
PM	65.22	4.63	58.68	86.47	0.00	0.00	**215.00**
PM10	45.37	2.94	29.12	8.65	0.00	0.00	**86.08**
SO2	0.12	0.01	0.01	0.00	0.00	0.00	**0.14**
NOx	0.50	0.01	0.88	0.00	0.00	0.00	**1.39**
VOC	9.29	0.00	0.05	0.00	22.00	10.49	**41.83**
CO	0.37	0.00	0.74	0.00	0.00	0.00	**1.11**
total HAPs	6.59		0.00	0.00	0.00	1.03	**7.62**
worst case single HAP	(Benzene) 3.95		0.00	0.00	0.00	(Naphthalene) 0.42	**(Benzene) 3.95**

Total emissions based on rated capacity at 8,760 hours/year.
Aluminum Foundry emissions include natural gas combustion emissions from the 300 lb furnace (EU8).
HAP emissions from pouring, cooling, and shakeout are based on the total source-wide binder usage and therefore represent combined emissions from both foundries.
Sand Handling emissions include natural gas combustion emissions from the thermal sand reclamation unit (EU17).

Controlled Potential Emissions (tons/year)

	Emissions Generating Activity						
Pollutant	**Aluminum Melting & Casting Operations**	**Iron Melting & Casting Operations**	**Sand Handling**	**Cleaning/Finishing Process**	**U-180 Core Making Operations**	**Phenolic Urethane No-bake Core Making Operations**	**TOTAL**
PM	65.22	4.63	19.65	4.32	0.00	0.00	**93.82**
PM10	45.37	2.94	3.42	0.43	0.00	0.00	**52.16**
SO2	0.12	0.01	0.01	0.00	0.00	0.00	**0.14**
NOx	0.50	0.01	0.88	0.00	0.00	0.00	**1.39**
VOC	9.29	0.00	0.05	0.00	22.00	10.49	**41.83**
CO	0.37	0.00	0.74	0.00	0.00	0.00	**1.11**
total HAPs	6.59		0.00	0.00	0.00	1.03	**7.62**
worst case single HAP	(Benzene) 3.95		0.00	0.00	0.00	(Naphthalene) 0.42	**(Benzene) 3.95**

Total emissions based on rated capacity at 8,760 hours/year, after control.

Note:
The emissions represented above include the limited potential to emit from the source, including the new units being added, after application of aluminum, iron, and sand throughput limits.

Appendix A: Emission Calculations
ALUMINUM MELTING & CASTING PROCESS

Company Name: Muncie Casting Corporation
Address City IN Zip: 1406 East 18th Street, Muncie, Indiana 47302
Permit Number: SPR 035-19855-00061
Reviewer: Trish Earls/EVP

Annual Throughput Limit Metal Melted	24,084,000	Pounds	Annual Throughput Limit Metal Melted	12,042	Tons

Process Description	SCC #	Process Use Allocation (%)[1]	Pollutant	Emission Factor (lb/ton produced)	Emissions Before Controls (tons/yr)	Type of Control	Control Efficiency (%)	Emissions After Controls (tons/yr)
2300 Lb. Furnaces (5)	3-04-001-02	81.0%	PM	1.90	9.27	None	0.0	9.27
(Electric)		81.0%	PM-10	1.70	8.29	None	0.0	8.29
		81.0%	VOC	0.20	0.98	None	0.0	0.98
700 Lb. Furnace (1)	3-04-001-02	14.0%	PM	1.90	1.60	None	0.0	1.60
(Electric)		14.0%	PM-10	1.70	1.43	None	0.0	1.43
		14.0%	VOC	0.20	0.17	None	0.0	0.17
300 Lb. Furnace (1)	3-04-001-02	5.0%	PM	1.90	0.57	None	0.0	0.57
(Natural Gas)		5.0%	PM-10	1.70	0.51	None	0.0	0.51
		5.0%	VOC	0.20	0.06	None	0.0	0.06
Magnesium Treatment [2]	3-04-003-21	85.0%	PM	1.80	9.21	None	0.0	9.21
		85.0%	PM-10	1.80	9.21	None	0.0	9.21
Pouring/Casting	3-04-001-14	100.0%	PM	4.20	25.29	None	0.0	25.29
& Casting Cooling	3-04-003-25	100.0%	PM-10	2.06	12.40	None	0.0	12.40
		100.0%	SO2	0.02	0.12	None	0.0	0.12
		100.0%	NOx	0.01	0.06	None	0.0	0.06
		100.0%	VOC [3]	0.14	0.84	None	0.0	0.84
Shakeout	3-04-003-31	100.0%	PM	3.20	19.27	None	0.0	19.27
		100.0%	PM-10	2.24	13.49	None	0.0	13.49
		100.0%	VOC [3]	1.2	7.23	None	0	7.23
				PM EMISSIONS	***65.21***			***65.21***
				PM-10 EMISSIONS	***45.34***			***45.34***
				SO2 EMISSIONS	***0.12***			***0.12***
				NOx EMISSIONS	***0.06***			***0.06***
				VOC EMISSIONS	***9.27***			***9.27***

Notes:

[1] The Process Use Allocation column is used to estimate the percentage of the total amount of aluminum metal melted that passes through each individual process. The sum of the Process Use Allocation percentages for the various aluminum melt furnace processes must equal 100%. The individual aluminum furnace percentages are based upon the calculated amount of the total annual aluminum throughput for the individual furnace processes.

[2] Magnesium treatment is only performed on a maximum of 85% of the total aluminum melted.

[3] Additional VOC/HAP emissions from pouring, cooling, and shakeout being emitted from the binder materials used in the cores and molds are included in the emission calculations fc core/mold making (pages 7, 8 & 9 of App. A) and for binder usage (page 6 of App. A). These emissions are not included on this spreadsheet.

Appendix A: Emission Calculations
IRON MELTING & CASTING PROCESS

Company Name: Muncie Casting Corporation
Address City IN Zip: 1406 East 18th Street, Muncie, Indiana 47302
Permit Number: SPR 035-19855-00061
Reviewer: Trish Earls/EVP

Annual Throughput Limit Metal Melted	2,000,000	Pounds	Annual Throughput Limit Metal Melted	1,000	Tons

Process Description	SCC #	Process Use Allocation (%) [1]	Pollutant	Emission Factor (lb/ton produced)	Emissions Before Controls (tons/yr)	Type of Control	Control Efficiency (%)	Emissions After Controls (tons/yr)
Charge Handling	3-04-003-15	100.0%	PM	0.60	0.30	None	0.0	0.30
		100.0%	PM-10	0.36	0.18	None	0.0	0.18
1000 Lb. Furnace (1)	3-04-003-03	100.0%	PM	0.90	0.45	None	0.0	0.45
(Electric) [2]		100.0%	PM-10	0.86	0.43	None	0.0	0.43
Magnesium Treatment [3]	3-04-003-21	20.0%	PM	1.80	0.18	None	0.0	0.18
		20.0%	PM-10	1.80	0.18	None	0.0	0.18
Pouring/Casting	3-04-003-20	100.0%	PM	4.20	2.10	None	0.0	2.10
& Casting Cooling	3-04-003-25	100.0%	PM-10	2.06	1.03	None	0.0	1.03
		100.0%	SO2	0.02	0.01	None	0.0	0.01
		100.0%	NOx	0.01	0.01	None	0.0	0.01
		100.0%	VOC [4]	See Below				
Shakeout	3-04-003-31	100.0%	PM	3.20	1.60	None	0.0	1.60
		100.0%	PM-10	2.24	1.12	None	0.0	1.12
		100.0%	VOC [4]	See Below				
				PM EMISSIONS	***4.63***			***4.63***
				PM-10 EMISSIONS	***2.94***			***2.94***
				SO2 EMISSIONS	***0.01***			***0.01***
				NOX EMISSIONS	***0.01***			***0.01***

Notes:

[1] The Process Use Allocation column is used to estimate the percentage of the total amount of gray iron metal melted that passes through each individual process. The sum of the Process Use Allocation percentages for the various iron melt furnace processes must equal 100%. The individual iron furnace percentages are based upon the calculated amount of the total annual iron throughput for the individual furnace processes.

[2] There is also a second gray iron electric furnace (identified in the FESOP as the 500 Lb. Furnace) which has the same maximum capacity of the 1000 Lb. Furnace. However, the emission calculations are based upon the use of only one furnace because both furnaces share the same power supply and thus cannot be operated simultaneously.

[3] Magnesium treatment is only performed on ductile iron, which is a maximum of 20% of the total gray iron melted.

[4] Additional VOC emissions from pouring, cooling, and shakeout being emitted from the binder materials used in the cores and molds are included in the emission calculations for core/mold making (pages 7, 8 & 9 of App. A) and for binder usage (page 6 of App. A). These emissions are not included on this spreadsheet.

Appendix A: Emission Calculations
SAND HANDLING

Company Name: Muncie Casting Corporation
Address City IN Zip: 1406 East 18th Street, Muncie, Indiana 47302
Permit Number: SPR 035-19855-00061
Reviewer: Trish Earls/EVP

Annual Throughput Virgin Sand Handled [1]	5,650,000	Pounds	2,825	Tons	Annual Throughput Resin Bonded Sand [1]	800,000	Pounds	400	Tons

Process Description	SCC #	Process Use Allocation (%) [2]	Pollutant	Emission Factor [3] (lb/ton handled)	Emissions Before Controls (tons/yr)	Type of Control [4]	Control Efficiency (%)	Emissions After Controls (tons/yr)
Kloster Sand Mixer	3-04-003-50	60.0%	PM	3.60	10.45	See Below	90.0	1.04
		60.0%	PM-10	0.54	1.57	See Below	90.0	0.16
		60.0%	VOC [5]	See Below				
Palmer Core Mixer #1	3-04-003-50	30.0%	PM	3.60	5.22	See Below	90.0	0.52
		30.0%	PM-10	0.54	0.78	See Below	90.0	0.08
			VOC [5]	See Below				
Palmer Core Mixer #2	3-04-003-50	5.0%	PM	3.60	0.87	See Below	90.0	0.09
		5.0%	PM-10	0.54	0.13	See Below	90.0	0.013
			VOC [5]	See Below				
Strong Scott Sand Mixer	3-04-003-50	5.0%	PM	3.60	0.87	See Below	90.0	0.09
		5.0%	PM-10	0.54	0.13	See Below	90.0	0.013
			VOC [5]	See Below				
CB-22 Core Machine	N/A	N/A	SO_2	See Below				
			VOC [5]	See Below				
Dependable Core Machine	N/A	N/A	SO_2	See Below				
			VOC [5]	See Below				
U-180 Core Machines (4)	N/A	N/A	VOC [5]	See Below				
Mech. Sand Reclaim [6]	3-04-003-50	100.0%	PM	3.60	17.42	None	0.0	17.42
(Screen & Lump Reducer)		100.0%	PM-10	0.54	2.61	None	0.0	2.61
Thermal Sand Reclaim [7]	N/A	100.0%	PM	N/A	23.83	Baghouse	98.0	0.48
(ThermFire Unit)		100.0%	PM-10	N/A	23.83	Baghouse	98.0	0.48
				PM EMISSIONS	***58.66***			***19.63***
				PM-10 EMISSIONS	***29.05***			***3.35***

Notes:

[1] The Annual Throughput Sand Handled number represents the total annual amount of virgin sand that is purchased and added into the sand system each year for the mixers. This total does not include the core (resin bonded) sand purchased in bags that is manually fed into the U-180 core machines. The maximum annual usage of this resin bonded sand is 800,000 lbs/yr. It is assumed that the sand grains pass through the entire sand system approximately 3 times on average with the exception of the Palmer Core Mixer #2 (EU21) which is manually fed only new virgin silica sand.

[2] The Process Use Allocation column is used to estimate the percentage of the total amount of sand handled that passes through each individual sand mixing process. The sum of the Process Use Allocation percentages for the various sand handling mixers must equal 100%. The individual sand mixer percentages are based upon the calculated amount of the total annual virgin sand distributed to each individual sand mixer.

[3] All sand handling PM and PM-10 emission factors have the following units: lbs/tons of sand handled.

[4] A control efficiency is included for the sand mixers (see page 8 of the TSD for the existing FESOP for justification).

[5] The VOC emissions from the sand mixing and mold/core making operations are dependent upon the type of binders being utilized in each particular machine. These emissions are not included in this spreadsheet. See VOC/HAP emission calculations for the mold/core making operations on pages 7, 8 and 9 of Appendix A.

[6] The mechanical sand reclamation process is used to "recondition" the spent sand from the Iron and Aluminum Foundry shakeout processes for reuse in the core and mold making process. It is assumed that the sand grains pass through the entire sand system approximately 3 times on average. Therefore, the total sand throughput is based upon the total annual virgin silica sand and resin bonded core sand throughput multiplied by a factor of 3. To be conservative, it is assumed that all virgin silica sand and core resin bonded sand will pass through this process.

[7] The thermal sand reclamation process is used to initially condition all of the virgin sand received on-site. It is also used to "recondition" the spent sand from the Iron and Aluminum Foundry shakeout processes for reuse in the core and mold making process. To be conservative, it is assumed that all virgin sand and core resin bonded sand will pass through this process. The PM/PM-10 emissions from the thermal sand reclaimer are based upon stack testing data supplied by the manufacturer.

Appendix A: Emission Calculations
CLEANING/FINISHING PROCESS

Company Name: Muncie Casting Corporation
Address City IN Zip: 1406 East 18th Street, Muncie, Indiana 47302
Permit Number: SPR 035-19855-00061
Reviewer: Trish Earls/EVP

Annual Throughput Limit Metal Melted	26,084,000	Pounds	Annual Throughput Limit Metal Melted	13,042	Tons

Process Description	SCC #	Process Use Allocation (%) [1]	% Processed (Yield) [2]	Pollutant	Emission Factor (lb/ton produced)	Emissions Before Controls (tons/yr)	Type of Control	Control Efficiency (%)	Emissions After Controls (tons/yr)
GOFF Shotblast Machine	3-04-003-40	100.0%	60.0%	PM	17.00	66.51	Baghouse	95.0	3.33
		100.0%	60.0%	PM-10	1.70	6.65	Baghouse	95.0	0.33
Small Shotblast Machine	3-04-003-40	15.0%	60.0%	PM	17.00	9.98	Baghouse	95.0	0.50
		15.0%	60.0%	PM-10	1.70	1.00	Baghouse	95.0	0.05
Sand Blaster Machine	3-04-003-40	15.0%	60.0%	PM	17.00	9.98	Baghouse	95.0	0.50
		15.0%	60.0%	PM-10	1.70	1.00	Baghouse	95.0	0.05
					PM EMISSIONS	***86.47***			***4.32***
					PM-10 EMISSIONS	***8.65***			***0.43***

Notes:

[1] The Process Use Allocation column is used to estimate the percentage of the total amount of metal melted that passes through each individual process.
The Process Use Allocation is 100% for the GOFF Shotblast Machine because 100% of the parts requiring cleaning are processed in this machine.
The Process Use Allocation is only 15% for the Small Shotblast Machine and the Sand Blaster Machine because only a maximum of 15% of the parts that require cleaning go through the extra step of being processed in these two machines.

[2] The % Processed rate for the shotblasting operation is based upon the fact that only 60% of the total metal (aluminum and gray iron) melted actually reaches this process operation (this is the current and expected future yield).

Appendix A: Emission Calculations
Pouring, Cooling and Shakeout Operations HAP Emission Calculations
Aluminum and Iron Foundries

Company Name: **Muncie Casting Corporation**
Address City IN Zip: **1406 East 18th Street, Muncie, Indiana 47302**
Permit Number: **SPR 035-19855-00061**
Reviewer: **Trish Earls/EVP**

Binder System Used:	Phenolic Nobake Binder (Pepset Process)	
2003 Part I Binder Used:	63,360	
2003 Part II Binder Used:	50,880	
Maximum Total Resin Usage Rate (Lbs. of Resin/Year): [1]		228,480

Pollutant Name	Emission Factor [2] *(Lbs. Pollutant/Lbs. Resin)*	HAP Emissions [3] (Tons/Yr)
Formaldehyde	0.000010	0.001142
Phenol	0.000975	0.111384
Benzene	0.011209	1.280516
Toluene	0.000634	0.072428
M-xylene	0.000097	0.011081
O-xylene	0.000049	0.005598
Naphthalene	0.000049	0.005598
Total HAPs [4]		**1.487748**

Binder System Used:	Acrylic-Epoxy Cold Box Binder (Isoset) [5]	
2003 Part I Binder Used:	5,000	
2003 Part II Binder Used:	4,000	
Maximum Total Resin Usage Rate (Lbs. of Resin/Year):		18,000

Pollutant Name	Emission Factor [2] (Lbs. Pollutant/Lbs. Resin)	HAP Emissions [3] (Tons/Yr)
Formaldehyde	0.000004	0.000036
Phenol	0.000131	0.001179
Benzene	0.000611	0.005499
Toluene	0.000063	0.000567
M-xylene	0.000021	0.000189
O-xylene	0.000021	0.000189
Naphthalene	0.000021	0.000189
Total HAPs [4]		**0.007848**

Binder System Used:	Shell Binder (Resin-Bonded Sand)	
2003 Part I Binder Used: [6]	200,000	
Maximum Total Resin Usage Rate (Lbs. of Resin/Year):		800,000

Pollutant Name	Emission Factor [2] (Lbs. Pollutant/Lbs. Resin)	HAP Emissions [3] (Tons/Yr)
Formaldehyde	0.000035	0.014000
Phenol	0.002456	0.982400
Benzene	0.006667	2.666800
Toluene	0.002807	1.122800
M-xylene	0.000585	0.234000
O-xylene	0.000117	0.046800
Naphthalene	0.000058	0.023200
Total HAPs [4]		**5.090000**

Notes:

[1] Maximum total resin usage rate is estimated to be twice the actual 2003 total resin usage.

[2] Emission factors are based upon the American Foundrymen's Society (Mosher) research paper.

[3] HAP Emissions = Maximum Total Resin Usage Rate x Emission Factor x (1 ton/2000 lbs)

[4] Total HAPs is the sum of all pollutants listed.

[5] This system was not identified in Mosher research paper, so Green Sand Binder factors used.

[6] The total amount of shell binder used is based upon the 2003 total usage increased by a safety factor assuming all four U-180 core machines are operable.

Appendix A: Emission Calculations
Core Making Operations Emissions Calculations

Company Name: **Muncie Casting Corporation**
Address City IN Zip: **1406 East 18th Street, Muncie, Indiana 47302**
Permit Number: **SPR 035-19855-00061**
Reviewer: **Trish Earls/EVP**

New U-180 Core Making Machines: 3

Binder System Used: **Shell Binder (Resin-Bonded Sand)[1]**

Maximum Resin-Bonded Sand Usage Rate (Lbs. of Resin/Year) [2]: **600,000**

Volatile Components	% in Product [2]	% Evaporated [3]	VOC Emissions (Tons/Yr)
P/F Novolac Resin	3.5	100.0	10.50
Hexamethylenetetramine	2.0	100.0	6.00
Total VOC (tons/year):	**16.50**		

New and Existing U-180 Core Making Machines: 4

Binder System Used: **Shell Binder (Resin-Bonded Sand)[1]**

Maximum Resin-Bonded Sand Usage Rate (Lbs. of Resin/Year) [2]: **800,000**

Volatile Components	% in Product [2]	% Evaporated [3]	VOC Emissions (Tons/Yr)
P/F Novolac Resin	3.5	100.0	14.00
Hexamethylenetetramine	2.0	100.0	8.00
Total VOC (tons/year):	**22.00**		

Notes:

[1] The U-180 core machines all use a shell binder system (not the Pep Set binder).

[2] The Maximum Binder Usage Rate is 200,000 ibs/year for each U-180 core machine. Therefore, the combined Maximum Binder Usage for the three new U-180 core machines combined is 600,000 lbs/year and for all four core machines is 800,000 lbs/yr.

[3] The % in product value is derived from the vendor's MSDS

[4] The % evaporated value is assumed to be 100% since no data on this type of binder system appears in the "Form R" Gold Book (1998).

Appendix A: Emission Calculations
Phenolic No-Bake Binder Coremaking VOC Emissions Calculations

Company Name: **Muncie Casting Corporation**
Address City IN Zip: **1406 East 18th Street, Muncie, Indiana 47302**
Permit Number: **SPR 035-19855-00061**
Reviewer: **Trish Earls/EVP**

Phenolic No-bake Core Making Process

Machine	Date of Construction	Capacity (tons cores/hr)	Maximum Resin Content (%)	VOC Emission Factor from Resin Evaporation (lb/ton cores)	Max. Catalyst Usage (lb/ton cores)	Potential VOC Emissions from resin evap (tons/yr)	Potential VOC Emissions from Catalyst usage (tons/yr)	Total Potential VOC Emissions (tons/yr)
CB-22	1998	0.5	1.80%	1.8	0.595	3.94	1.30	5.25
420	1998	0.5	1.80%	1.8	0.595	3.94	1.30	5.25
Total								**10.49**

Appendix A: Emission Calculations
HAP Emission Calculations - Phenolic Urethane No-bake Core Making

Company Name: **Muncie Casting Corporation**
Address City IN Zip: **1406 East 18th Street, Muncie, Indiana 47302**
Permit Number: **SPR 035-19855-00061**
Reviewer: **Trish Earls/EVP**

Material	Maximum Usage (lbs/hr)	Weight % Phenol	Weight % MDI	Weight % Formaldehyde	Weight % Naphthalene	Phenol Emissions (ton/yr)	MDI Emissions (ton/yr)	Formaldehyde Emissions (ton/yr)	Naphthalene Emissions (ton/yr)
Phenolic No-bake Core Making									
Phenolic No-bake Part I Binder	14.47	7.50%	0.00%	47.50%	3.00%	0.00	0.00	0.60	0.11
Phenolic No-bake Part II Binder	11.62	0.00%	20.00%	0.00%	3.00%	0.00	0.00	0.00	0.09
Phenolic No-bake Catalyst	0.59	0.00%	0.00%	0.00%	8.55%	0.00	0.00	0.00	0.22
						0.00	**0.00**	**0.60**	**0.42**
									1.03

Reduction Factors for Core Making

Pollutant	Phenolic Urethane No-Bake Part I Reduction Factors	Phenolic Urethane No-Bake Part II Reduction Factors
Phenol	0.00%	N/A
MDI	N/A	0.00%
Formaldehyde	2.00%	N/A
Xylene	5.85%	5.85%
Naphthalene	5.85%	5.85%
Sulfuric Acid	N/A	N/A

METHODOLOGY
Max. Hourly Resin Usage Rate = Max. Annual Resin Usage rate (lbs/yr) / 8,760 (hrs/yr)
HAP Emissions from Resins = Max. Hourly Usage Rate * % HAP * Reduction Factor * 8760 hrs/yr * 1 ton/2000 lbs
Reduction factors obtained from the American Foundrymen's Society Publication entitled "Form R Reporting of Binder Chemicals used in Foundries", and refers to the weight percent of HAP that is emitted to the atmosphere.