CONSTRUCTION PERMIT
OFFICE OF AIR MANAGEMENT

Noblesville Castings, Inc.
1600 South 8th Street
Noblesville, Indiana 46060

is hereby authorized to construct

(a) Two (2) 10.2 ton per hour electric induction furnaces, identified as EU-3 and EU-5, exhausted to the general area known as stack/vent 001, with a total limited throughput of 11,960 tons per year, equivalent to 996.6 tons per month of fifty percent (50%) steel scrap and fifty percent (50%) ductile iron re-melt.

(b) One (1) reactivated Schneible medium to heavy load wet collector, identified as WC-W, exhausted to stack/vent 003, rated at 98 percent collection efficiency, controlling particulate matter emissions from the Magnesium Treatment/Ladle Filling operations.

This permit is issued to the above mentioned company (herein known as the Permittee) under the provisions of 326 IAC 2-1 and 40 CFR 52.780, with conditions listed on the attached pages.

Construction Permit No.: CP 057-9664-00002	
Issued by: Paul Dubenetzky, Branch Chief Office of Air Management	Issuance Date:

Construction Conditions

General Construction Conditions

1. That the data and information supplied with the application shall be considered part of this permit. Prior to any proposed change in construction which may affect allowable emissions, the change must be approved by the Office of Air Management (OAM).

2. That this permit to construct does not relieve the permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.

Effective Date of the Permit

3. That pursuant to IC 13-15-5-3, this permit becomes effective upon its issuance.

4. That pursuant to 326 IAC 2-1-9(b)(Revocation of Permits), the Commissioner may revoke this permit if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.

5. That notwithstanding Construction Condition No. 6, all requirements and conditions of this construction permit shall remain in effect unless modified in a manner consistent with procedures established for modifications of construction permits pursuant to 326 IAC 2 (Permit Review Rules).

First Time Operation Permit

6. That this document shall also become a first-time operation permit pursuant to 326 IAC 2-1-4 (Operating Permits) when, prior to start of operation, the following requirements are met:

   (a) The attached affidavit of construction shall be submitted to the Office of Air Management (OAM), Permit Administration & Development Section, verifying that the facilities were constructed as proposed in the application. The facilities covered in the Construction Permit may begin operating on the date the Affidavit of Construction is postmarked or hand delivered to IDEM.

   (b) If construction is completed in phases; i.e., the entire construction is not done continuously, a separate affidavit must be submitted for each phase of construction. Any permit conditions associated with operation start up dates such as stack testing for New Source Performance Standards (NSPS) shall be applicable to each individual phase.

   (c) Permittee shall receive an Operation Permit Validation Letter from the Chief of the Permit Administration & Development Section and attach it to this document.

   (d) The operation permit will be subject to annual operating permit fees pursuant to 326 IAC 2-7-19 (Fees).

   (e) The Permittee has submitted their Part 70 (T 057-6487-00002) application on August 30, 1996 for the existing source. The equipment being reviewed under this permit shall be incorporated in the submitted Part 70 application.

7. That when the facility is constructed and placed into operation the following operation conditions shall be met:

Operation Conditions

General Operation Conditions

1. That the data and information supplied in the application shall be considered part of this permit. Prior to any change in the operation which may result in an increase in allowable emissions exceeding those specified in 326 IAC 2-1-1 (Construction and Operating Permit Requirements), the change must be approved by the Office of Air Management (OAM).

2. That the permittee shall comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder.

Preventive Maintenance Plan

3. That pursuant to 326 IAC 1-6-3 (Preventive Maintenance Plans), the Permittee shall prepare and maintain a preventive maintenance plan, including the following information:

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

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

   (c) Identification of the replacement parts which will be maintained in inventory for quick replacement.

   The preventive maintenance plan shall be submitted to IDEM, OAM upon request and shall be subject to review and approval.

Transfer of Permit

4. That pursuant to 326 IAC 2-1-6 (Transfer of Permits):

   (a) In the event that ownership of this ductile iron foundry is changed, the Permittee shall notify OAM, Permit Branch, within thirty (30) days of the change. Notification shall include the date or proposed date of said change.

   (b) The written notification shall be sufficient to transfer the permit from the current owner to the new owner.

   (c) The OAM shall reserve the right to issue a new permit.

Permit Revocation

5. That pursuant to 326 IAC 2-1-9(a)(Revocation of Permits), this permit to construct and operate may be revoked for any of the following causes:

   (a) Violation of any conditions of this permit.

   (b) Failure to disclose all the relevant facts, or misrepresentation in obtaining this permit.

(c) Changes in regulatory requirements that mandate either a temporary or permanent reduction of discharge of contaminants. However, the amendment of appropriate sections of this permit shall not require revocation of this permit.

(d) Noncompliance with orders issued pursuant to 326 IAC 1-5 (Episode Alert Levels) to reduce emissions during an air pollution episode.

(e) For any cause which establishes in the judgment of IDEM, the fact that continuance of this permit is not consistent with purposes of 326 IAC 2-1 (Permit Review Rules).

Availability of Permit

6. That pursuant to 326 IAC 2-1-3(l), the Permittee shall maintain the applicable permit on the premises of this source and shall make this permit available for inspection by the IDEM, or other public official having jurisdiction.

Performance Testing

7. That pursuant to 326 IAC 2-1-3 (Construction and Operating Permit Requirements) compliance stack tests shall be performed for PM, PM_{10}, and VOC for the two (2) 10.2 ton per hour electric induction furnaces, identified as EU-3 and EU-5, exhausted to the general area known as stack/vent 001 within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up. These tests shall be performed according to 326 IAC 3-6 (Source Sampling Procedures) using the methods specified in the rule or as approved by the Commissioner.

(a) A test protocol shall be submitted to the OAM, Compliance Data Section, 35 days in advance of the test.

(b) The Compliance Data Section shall be notified of the actual test date at least two (2) weeks prior to the date.

(c) All test reports must be received by the Compliance Data Section within 45 days of completion of the testing.

(d) Whenever the results of the stack test performed exceed the level specified in this permit, appropriate corrective actions shall be implemented within thirty (30) days of receipt of the test results. These actions shall be implemented immediately unless notified by OAM that they are acceptable. The Permittee shall minimize emissions while the corrective actions are being implemented.

(e) Whenever the results of the stack test performed exceed the level specified in this permit, a second test to demonstrate compliance shall be performed within 120 days. Failure of the second test to demonstrate compliance may be grounds for immediate revocation of this permit to operate the affected facility.

Malfunction Condition

8. That pursuant to 326 IAC 1-6-2 (Records; Notice of Malfunction):

(a) A record of all malfunctions, including startups or shutdowns of any facility or emission control equipment, which result in violations of applicable air pollution control regulations or applicable emission limitations shall be kept and retained for a period of three (3) years and shall be made available to the Indiana Department of Environmental Management (IDEM), Office of Air Management (OAM) or appointed representative upon request.

(b) When a malfunction of any facility or emission control equipment occurs which lasts more than one (1) hour, said condition shall be reported to OAM, using the Malfunction Report Forms (2 pages). Notification shall be made by telephone or facsimile, as soon as practicable, but in no event later than four (4) daytime business hours after the beginning of said occurrence.

(c) Failure to report a malfunction of any emission control equipment shall constitute a violation of 326 IAC 1-6, and any other applicable rules. Information of the scope and expected duration of the malfunction shall be provided, including the items specified in 326 IAC 1-6-2(a)(1) through (6).

(d) Malfunction is defined as any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner. [326 IAC 1-2-39]

Facilities to be Removed

9. The following equipment shall be removed from service prior to the operation of the proposed equipment:

Two (2) 2.5 ton per hour electric induction furnaces, identified as EU-3 and EU-5, exhausted to the general area known as stack/vent 001, with a maximum throughput of 21,900 tons per year, each, of fifty percent (50%) steel scrap and fifty percent (50%) ductile iron re-melt.

PSD Minor Limit

10. (a) That the input of the two (2) 10.2 ton per hour electric induction furnaces and their associated operations (scrap and charge handling, inoculation, pouring casting, casting cooling, shakeout, sand grinding and handling, tumbleblast cleaning, casting grinding and finishing, core manufacture, and core sand handling) shall be limited to 11,960 tons per year, which consists of, no greater than fifty percent (50%) steel scrap and fifty percent (50%) ductile iron re-melt.

(b) This production limitation is equivalent to PM emissions of 27.2 tons per rolling 12-month period or 6.21 pounds per hour and PM_{10} emissions of 22.3 tons per rolling 12-month period or 5.09 pounds per hour. Therefore, the Prevention of Significant Deterioration (PSD) rules, 326 IAC 2-2 and 40 CFR 52.21, will not apply. The PM limit of 6.21 pounds per hour also satisfies the requirements of 326 IAC 6-3-2.

(c) During the first twelve (12) months of operation, the amount of any raw material charged to both furnaces shall be limited such that the total usage divided by the accumulated months of operation shall be no greater than 11,960 total tons per year divided by twelve (12) months, which equals 996.6 tons per month, rolled on a monthly basis.

(d) Due to this limit, VOC emissions will be less than 40 tons per year or 9.13 pounds per hour, single HAP emissions less than 10 tons per year or 2.28 pounds per hour, total HAPs emissions less than 25 tons per year or 5.71 pounds per hour, and NO_x emissions less than 40 tons per year or 9.13 pounds per hour. The limited throughput will make 326 IAC 9-1 (Carbon Monoxide Emission Limits) not applicable.

Annual Emission Reporting

11. That pursuant to 326 IAC 2-6 (Emission Reporting), the Permittee must annually submit an emission statement for the source. This statement must be received by July 1 of each year and must comply with the minimum requirements specified in 326 IAC 2-6-4. A copy of this rule is enclosed. The annual statement must be submitted to:

Indiana Department of Environmental Management
Technical Support and Modeling Section, Office of Air Management
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

The annual emission statement covers the twelve (12) consecutive month time period starting January 1 and ending December 31.

Opacity Limitations

12. That pursuant to 326 IAC 5-1-2 (Visible Emission Limitations) except as provided in 326 IAC 5-1-3 (Temporary Exemptions), the visible emissions shall meet the following:

(a) visible emissions shall not exceed an average of 40 percent opacity in 24 consecutive readings.

(b) visible emissions shall not exceed 60 percent opacity for more than a cumulative total of 15 minutes (60 readings) in a 6-hour period.

Visible Emission Notations

13. That visible emission notations of all exhausts to the atmosphere from the two (2) 10.2 ton per hour electric induction furnaces shall be performed once per working shift. A trained employee will record whether emissions are normal or abnormal.

(a) For processes operated continuously, “normal” means those conditions prevailing, or expected to prevail, 80 percent of the time the process is in operation, not counting start up or shut down time.

(b) In the case of batch or discontinuous operation, readings shall be taken during that part of the operation specified in the facility’s specific condition prescribing visible emissions.

(c) 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 and abnormal visible emissions for that specific process.

(d) The Preventive Maintenance Plan for this facility shall contain troubleshooting contingency and corrective actions for when an abnormal emission is observed.

Fugitive Dust Emissions

14. That pursuant to 326 IAC 6-4 (Fugitive Dust Emissions), the Permittee shall be in violation of 326 IAC 6-4 (Fugitive Dust Emissions) if any of the criteria specified in 326 IAC 6-4-2(1) through (4) are violated. Observations of visible emissions crossing the property line of the source at or near ground level must be made by a qualified representative of IDEM. [326 IAC 6-4-5(c)].

Reporting Requirements

15. That a log of information necessary to document compliance with operation permit condition no/s. 10 shall be maintained. These records shall be kept for at least the past 36-month period and made available upon request to the Office of Air Management (OAM).

(a) A quarterly summary shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Management
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

within 30 days after the end of the quarter being reported in the format attached. These reports shall include hourly throughput and hours of operation. These records shall include the coating, thinner and clean up solvent usage, material safety data sheet (MSDS) and the date of use.

(b) Unless otherwise specified in this permit, any notice, report, or other submissions required by this permit shall be timely if:

(i) Delivered by U.S. mail and postmarked on or before the date it is due; or

(ii) Delivered by any other method if it is received and stamped by IDEM, OAM, on or before the date it is due.

(c) All instances of deviations from any requirements of this permit must be clearly identified in such reports.

(d) Any corrective actions taken as a result of an exceedance of a limit, an excursion from the parametric values, or a malfunction that may have caused excess emissions must be clearly identified in such reports.

(e) The first report shall cover the period commencing the postmarked submission date of the Affidavit of Construction.

Open Burning

16. That the permittee shall not open burn any material except as provided in 326 IAC 4-1-3, 326 IAC 4-1-4 or 326 IAC 4-1-6.

Emergency Reduction Plans

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

(a) The Permittee shall prepare written emergency reduction plans (ERPs) consistent with safe operating procedures.

(b) These ERPs shall be submitted for approval to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Management
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

within 180 calendar days from the issuance date of this permit.

(c) If the ERP is disapproved by IDEM, OAM, the Permittee shall have an additional thirty (30) days to resolve the differences and submit an approvable ERP. If after this time, the Permittee does not submit an approvable ERP, IDEM, OAM, shall supply such a plan.

(d) These ERPs shall state those actions that will be taken, when each episode level is declared, to reduce or eliminate emissions of the appropriate air pollutants.

(e) Said ERPs shall also identify the sources of air pollutants, the approximate amount of reduction of the pollutants, and a brief description of the manner in which the reduction will be achieved.

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

MALFUNCTION REPORT

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR MANAGEMENT
FAX NUMBER - 317 233-5967

This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6 and to qualify for the exemption under 326 IAC 1-6-4.

THIS FACILITY MEETS THE APPLICABILITY REQUIREMENTS BECAUSE: IT HAS POTENTIAL TO EMIT 25 LBS/HR PARTICULATES ?_____, 100 LBS/HR VOC ?_____, 100 LBS/HR SULFUR DIOXIDE ?_____ OR 2000 LBS/HR OF ANY OTHER POLLUTANT ?_____ EMISSIONS FROM MALFUNCTIONING CONTROL EQUIPMENT OR PROCESS EQUIPMENT CAUSED EMISSIONS IN EXCESS OF APPLICABLE LIMITATION _____.

THIS MALFUNCTION RESULTED IN A VIOLATION OF: 326 IAC _____ OR, PERMIT CONDITION # _____ AND/OR PERMIT LIMIT OF _____

THIS INCIDENT MEETS THE DEFINITION OF 'MALFUNCTION' AS LISTED ON REVERSE SIDE ? Y N

THIS MALFUNCTION IS OR WILL BE LONGER THAN THE ONE (1) HOUR REPORTING REQUIREMENT ? Y N

COMPANY: Noblesville Castings, Inc. PHONE NO. 317 - 773 - 3313

LOCATION: (CITY AND COUNTY) Noblesville / Hamilton

PERMIT NO. 057 - 9664 AFS PLANT ID: 057 - 00002 AFS POINT ID: _____ INSP: _____

CONTROL/PROCESS DEVICE WHICH MALFUNCTIONED AND REASON: _____

_____

DATE/TIME MALFUNCTION STARTED: _____/_____/ 19____ _____ AM / PM

ESTIMATED HOURS OF OPERATION WITH MALFUNCTION CONDITION: _____

DATE/TIME CONTROL EQUIPMENT BACK-IN SERVICE_____/_____/ 19____ _____ AM/PM

TYPE OF POLLUTANTS EMITTED: TSP, PM-10, SO2, VOC, OTHER: _____

ESTIMATED AMOUNT OF POLLUTANT EMITTED DURING MALFUNCTION: _____

_____

MEASURES TAKEN TO MINIMIZE EMISSIONS: _____

_____

REASONS WHY FACILITY CANNOT BE SHUTDOWN DURING REPAIRS:

CONTINUED OPERATION REQUIRED TO PROVIDE ESSENTIAL* SERVICES: _____

CONTINUED OPERATION NECESSARY TO PREVENT INJURY TO PERSONS: _____

CONTINUED OPERATION NECESSARY TO PREVENT SEVERE DAMAGE TO EQUIPMENT: _____

INTERIM CONTROL MEASURES: (IF APPLICABLE) _____

_____

_____

MALFUNCTION REPORTED BY: _____ TITLE: _____
(SIGNATURE IF FAXED)

MALFUNCTION RECORDED BY: _____ DATE: _____ TIME: _____

Please note - This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6 and to qualify for the exemption under 326 IAC 1-6-4.

326 IAC 1-6-1 Applicability of rule

Sec. 1. The requirements of this rule (326 IAC 1-6) shall apply to the owner or operator of any facility which has the potential to emit twenty-five (25) pounds per hour of particulates, one hundred (100) pounds per hour of volatile organic compounds or SO2, or two thousand (2,000) pounds per hour of any other pollutant; or to the owner or operator of any facility with emission control equipment which suffers a malfunction that causes emissions in excess of the applicable limitation.

326 IAC 1-2-39 "Malfunction" definition

Sec. 39. Any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner. (Air Pollution Control Board; 326 IAC 1-2-39; filed Mar 10, 1988, 1:20 p.m.: 11 IR 2373)

***Essential services** are interpreted to mean those operations, such as, the providing of electricity by power plants. Continued operation solely for the economic benefit of the owner or operator shall not be sufficient reason why a facility cannot be shutdown during a control equipment shutdown.

If this item is checked on the front, please explain rationale:

_____

_____

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

Quarterly Report

Source Name: Noblesville Castings, Inc.
Source Address: 1600 South 8th Street, Noblesville, Indiana 46060
Mailing Address: 1600 South 8th Street, Noblesville, Indiana 46060
Part 70 Permit No.: CP 057-9664-00002
Facility: Two (2) 10.2 ton per hour electric induction furnaces
Parameter: PM emissions
Limit: 11,960 tons per year of fifty percent (50%) steel scrap and fifty percent (50%) ductile iron re-melt per consecutive twelve- (12-) month period

YEAR: _____

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

9 No deviation occurred in this quarter.

9 Deviation/s occurred in this quarter.

Deviation has been reported on: _____

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

Indiana Department of Environmental Management
Office of Air Management

Technical Support Document (TSD) for New Construction and Operation

Source Background and Description

Source Name:	Noblesville Castings, Inc.
Source Location:	1600 South 8th Street, Noblesville, Indiana 46060
County:	Hamilton
Construction Permit No.:	CP 057-9664-00002
SIC Code:	3321
Permit Reviewer:	Peter E. Fountaine

The Office of Air Management (OAM) has reviewed an application from Noblesville Castings, Inc. relating to the construction and operation of two (2) 10.2 ton per hour electric induction furnaces and an additional emission control shroud on the Magnesium Treatment/Ladle Filling operation venting to one (1) reactivated Schneible medium to heavy load wet collector. Noblesville Castings, Inc., in order to avoid PSD major modification status, will accept a total melt tonnage throughput limit of 11,960 tons per year, equivalent to 996.6 tons per month, of fifty percent (50%) steel scrap and fifty percent (50%) ductile iron re-melt. This is the first of two planned construction permits for this source that will result in removing two (2) 2.5 ton per hour electric induction furnaces to be replaced by two (2) 10.2 ton per hour electric induction furnaces. The second construction permit will involve removing one (1) existing cupola, and finally restoring the previous melt capacity by increasing the limit of the two (2) 10.2 ton per hour electric induction furnaces and their associated operations. The proposed increase in emissions are a minor modification to an existing major source and therefore are not subject to PSD review. This conclusion takes into account a netting credit for that portion of the actual emissions that occurred as the result of average induction melting for the past two years. The modifications to this operation will consist of the following equipment:

(a) Two (2) 10.2 ton per hour electric induction furnaces, identified as EU-3 and EU-5, exhausted to the general area known as stack/vent 001, with a total limited throughput of 11,960 tons per year, equivalent to 996.6 tons per month of fifty percent (50%) steel scrap and fifty percent (50%) ductile iron re-melt.

(b) One (1) reactivated Schneible medium to heavy load wet collector, identified as WC-W, exhausted to stack/vent 003, rated at 98 percent collection efficiency, controlling particulate matter emissions from the Magnesium Treatment/Ladle Filling operations.

As a result of this modification, the following equipment will be taken out of service:

Two (2) 2.5 ton per hour electric induction furnaces, identified as EU-3 and EU-5, exhausted to the general area known as stack/vent 001, with a maximum throughput of 21,900 tons per year, each, of fifty percent (50%) steel scrap and fifty percent (50%) ductile iron re-melt.

Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (^{E}F)
001	General Area; Not Elsewhere Captured	60.0	N/A	N/A	100.0
003	West Wet Collector WC-W	65.0	3.19	48,000	150.0

Recommendation

The staff recommends to the Commissioner that the construction and operation be approved. This recommendation is based on the following facts and conditions:

Information, unless otherwise stated, used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on April 13, 1998, with additional information received on May 6, 1998.

Emissions Calculations

See pages 1 through 15 of 15 of Appendix A (Emissions Calculation Spreadsheets) for detailed calculations.

Total Potential and Allowable Emissions

Indiana Permit Allowable Emissions Definition (after compliance with applicable rules, based on 8,760 hours of operation per year at rated capacity):

Pollutant	Allowable Emissions (tons/yr)	Potential Emissions (tons/yr)
Particulate Matter (PM)	135	2,101
Particulate Matter (PM_{10})	135	1,172
Sulfur Dioxide (SO_2)	2.54	2.54
Volatile Organic Compounds (VOC)	189	189
Carbon Monoxide (CO)	49.9	49.9
Nitrogen Oxides (NO_x)	118	118
Single Hazardous Air Pollutant (HAP)	694	694
Combination of HAPs	1,376	1,376

(a) These emissions are representative of the two (2) 10.2 ton per hour electric induction furnaces and their associated processes.

(b) The allowable PM and PM_{10} emissions are based on the applicability of 326 IAC 6-3-2.

(c) In order to avoid 326 IAC 2-2 Prevention of Significant Deterioration (PSD), the modification will also take into account a netting emission credit from the replaced two (2) 2.5 ton per hour electric induction furnaces.

(d) Allowable emissions (as defined in the Indiana Rule) of PM are greater than 25 tons per year. Therefore, pursuant to 326 IAC 2-1, Sections 1 and 3, a construction permit is required.

County Attainment Status

(a) Volatile organic compounds (VOC) and oxides of nitrogen (NO_X) are precursors for the formation of ozone. Therefore, VOC and NO_X emissions are considered when evaluating the rule applicability relating to the ozone standards. Hamilton County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NO_X emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

(b) Hamilton County has been classified as attainment or unclassifiable for PM, PM_{10}, SO_2, and CO. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

Source Status

Existing Source PSD, Part 70 or FESOP Definition (emissions after controls, based on 8,760 hours of operation per year at rated capacity and/ or as otherwise limited):

Pollutant	**Emissions** (tons/yr)
PM	104
PM_{10}	86.0
SO_2	12.2
VOC	35.0
CO	1,972
NO_X	3.43

(a) This existing source is a major stationary source because it is in one of the 28 listed source categories and at least one regulated pollutant is emitted at a rate of 100 tons per year or more.

(b) These emissions were based on applicant supplied actual emissions after controls for 1997.

Proposed Modification

PTE from the proposed modification (based on 8,760 hours of operation per year at rated capacity including enforceable emission control and production limit, where applicable):

Pollutant	PM (tons/yr)	PM_{10} (tons/yr)	SO_2 (tons/yr)	VOC (tons/yr)	CO (tons/yr)	NO_X (tons/yr)
Proposed Modification	27.2	22.3	0.125	12.1	0.335	0.847
Past Actual	9.64	7.69	0.03	2.82	0.07	0.29
Net Emissions	17.6	14.6	0.095	9.28	0.265	0.557
PSD Significant Level	25	15	40	40	100	40

(a) This modification to an existing major stationary source is not major because the emissions increase is less than the PSD significant levels. Therefore, pursuant to 326 IAC 2-2, and 40 CFR 52.21, the PSD requirements do not apply.

(b) See pages 1 through 15 of 15 of Appendix A (Emissions Calculation Spreadsheets) for detailed calculations.

326 IAC 2-7 (Part 70 Permit Program)

This existing source has submitted their Part 70 (T-057-6487-00002) application on August 30, 1996. The equipment being reviewed under this permit shall be incorporated in the submitted Part 70 application.

Federal Rule Applicability

(a) There are no New Source Performance Standards (326 IAC 12) and 40 CFR Part 60 applicable to this facility.

(b) There are no NESHAP 40 CFR Part 63 applicable to these facilities.

State Rule Applicability

326 IAC 2-1-3.4 (New Source Toxics Control)

Since this new source has a potential emissions greater than 10 tons per year of any single HAP and 25 tons per year of any combination of HAPs, the requirements of 326 IAC 2-1-3.4 could apply. This source has agreed to limit induction melt throughput to 11,960 tons per year resulting in single HAP emissions from the two (2) 10.2 ton per hour electric induction furnace operations of 0.0148 tons per month (0.178 tons per year) and combined HAPs emissions of 0.0418 tons per month (0.502 tons per year). Therefore, 326 IAC 2-1-3.4 (New Source Toxics Control) will not apply.

326 IAC 2-6 (Emission Reporting)

This facility is subject to 326 IAC 2-6 (Emission Reporting), because the source emits more than 100 tons per year of CO. Pursuant to this rule, the owner/ operator of this facility must annually submit an emission statement of the facility. The annual statement must be received by July 1 of each year and must contain the minimum requirements as specified in 326 IAC 2-6-4.

326 IAC 6-3-2 (Process Operations)

The particulate matter (PM) emissions from the two (2) 10.2 ton per hour electric induction furnaces will be limited to 30.9 pounds per hour, equivalent to 135 tons per year when operating at a process weight rate of 20.4 tons per hour at 8760 hours. Since potential PM emissions are 18.36 pounds per hour at 8,760 hours, equivalent to 80.4 tons per year, the two (2) 10.2 ton per hour electric induction furnaces will comply with this rule without controls or limits. After limited melt throughput of 11,960 tons per year, PM emissions from this facility are 2.39 pounds per hour at 4,500 actual hours of operation, equivalent to 5.38 tons per year.

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

$E = 4.10\ (20.4\ \text{tons/hr})^{0.67} = 30.9$ pounds per hour.

326 IAC 7-1 (Sulfur Dioxide Emission Limits)

The two (2) 10.2 ton per hour electric induction furnace operations have potential emissions of 2.54 tons per year, equivalent to 0.580 tons per hour, of SO_2. This is less than the threshold values of 25 tons per year and 10.0 pounds per hour of SO_2 to be emitted. Therefore, 326 IAC 7-1 (Sulfur Dioxide Emission Limits) will not apply.

326 IAC 8-1-6 (Best Available Control Technology)

Since the electric induction furnace operations have the potential emissions of more than 25 tons per year of VOC, 326 IAC 8-1-6 could be applicable. This source has agreed to limit induction melt throughput of 11,960 tons per year resulting in VOC emissions from the two (2) 10.2 ton per hour electric induction furnace operations of 1.01 tons per month (12.12 tons per year). Therefore, this operation is not subject to 326 IAC 8-1-6.

326 IAC 9-1 (Carbon Monoxide Emission Limits)

Since the two (2) 10.2 ton per hour electric induction furnace operations have a potential capacity of more than 10.0 tons per hour of process weight, each, 326 IAC 9-1 could be applicable. This source has agreed to limit induction melt throughput of 11,960 tons per year to less than 10.0 tons per hour to the two (2) 10.2 ton per hour electric induction furnace operations. Therefore, 326 IAC 9-1 (Carbon Monoxide Emission Limits) will not apply.

Air Toxic Emissions

Indiana presently requests applicants to provide information on emissions of the 187 hazardous air pollutants set out in the Clean Air Act Amendments of 1990. These pollutants are either carcinogenic or otherwise considered toxic and are commonly used by industries. They are listed as air toxics on the Office of Air Management (OAM) Construction Permit Application Form Y.

(a) The two (2) 10.2 ton per hour electric induction furnace operations will emit levels of air toxics less than those which constitute a major source according to Section 112 of the 1990 Amendments to the Clean Air Act.

(b) See attached spreadsheets for detailed air toxic calculations.

Conclusion

The construction of the two (2) 10.2 ton per hour electric induction furnace operations will be subject to the conditions of the attached proposed **Construction Permit No. CP 057-9664-00002.**

Indiana Department of Environmental Management
Office of Air Management

Addendum to the
Technical Support Document for New Construction and Operation

Source Name:	Noblesville Castings, Inc.
Source Location:	1600 South 8th Street, Noblesville, Indiana 46060
County:	Hamilton
Construction Permit No.:	CP 057-9664-00002
SIC Code:	3321
Permit Reviewer:	Peter E. Fountaine

On July 22, 1998, the Office of Air Management (OAM) had a notice published in the Noblesville Newspapers, Inc., Noblesville, Indiana, stating that Noblesville Castings, Inc. had applied for a construction permit to construct and operate two (2) 10.2 ton per hour electric induction furnaces and an additional emission control shroud on the Magnesium Treatment/Ladle Filling operation venting to one (1) reactivated Schneible medium to heavy load wet collector. The notice also stated that OAM proposed to issue a permit for this installation and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

Upon further review, the OAM has decided to make the following changes to the proposed construction permit. The permit language is changed to read as follows (deleted language appears as ~~strikeouts~~, new language is **bolded)**:

1) Operation Condition No. 7 has changed to the following to remove testing of carbon monoxide. The limited throughput will make 326 IAC 9-1 (Carbon Monoxide Emission Limits) not applicable.

Performance Testing

7. That pursuant to 326 IAC 2-1-3 (Construction and Operating Permit Requirements) compliance stack tests shall be performed for PM, PM_{10}, **and** VOC~~, and CO~~ for the two (2) 10.2 ton per hour electric induction furnaces, identified as EU-3 and EU-5, exhausted to the general area known as stack/vent 001 within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up. These tests shall be performed according to 326 IAC 3-6 (Source Sampling Procedures) using the methods specified in the rule or as approved by the Commissioner.

   (a) A test protocol shall be submitted to the OAM, Compliance Data Section, 35 days in advance of the test.

   (b) The Compliance Data Section shall be notified of the actual test date at least two (2) weeks prior to the date.

   (c) All test reports must be received by the Compliance Data Section within 45 days of completion of the testing.

   (d) Whenever the results of the stack test performed exceed the level specified in this permit, appropriate corrective actions shall be implemented within thirty (30) days of receipt of the test results. These actions shall be implemented immediately unless notified by OAM that they are acceptable. The Permittee shall minimize emissions while the corrective actions are being implemented.

(e) Whenever the results of the stack test performed exceed the level specified in this permit, a second test to demonstrate compliance shall be performed within 120 days. Failure of the second test to demonstrate compliance may be grounds for immediate revocation of this permit to operate the affected facility.

2) Operation Condition No. 10 has changed to the following to include a short term limit (lbs/hr) and additional language.

PSD Minor Limit

10. (a) That the input of the two (2) 10.2 ton per hour electric induction furnaces **and their associated operations (scrap and charge handling, inoculation, pouring casting, casting cooling, shakeout, sand grinding and handling, tumbleblast cleaning, casting grinding and finishing, core manufacture, and core sand handling)** shall be limited to 11,960 tons per year, which consists of, **no greater than** fifty percent (50%) steel scrap and fifty percent (50%) ductile iron re-melt.

(b) This production limitation is equivalent to PM emissions of 27.2 tons per rolling 12-month period **or 6.21 pounds per hour and PM_{10} emissions of 22.3 tons per rolling 12-month period or 5.09 pounds per hour**. Therefore, the Prevention of Significant Deterioration (PSD) rules, 326 IAC 2-2 and 40 CFR 52.21, will not apply. **The PM limit of 6.21 pounds per hour also satisfies the requirements of 326 IAC 6-3-2.**

(c) ~~During the first 12 months of operation, the input raw material usage shall be limited such that the total usage divided by the accumulated months of operation shall not exceed the limit specified.~~

During the first twelve (12) months of operation, the amount of any raw material charged to both furnaces shall be limited such that the total usage divided by the accumulated months of operation shall be no greater than 11,960 total tons per year divided by twelve (12) months, which equals 996.6 tons per month, rolled on a monthly basis.

(d) Due to this limit, VOC emissions will be less than 40 tons per year **or 9.13 pounds per hour**, single HAP emissions less than 10 tons per year **or 2.28 pounds per hour**, total HAPs emissions less than 25 tons per year **or 5.71 pounds per hour**, and NO_X emissions less than 40 tons per year **or 9.13 pounds per hour**. **The limited throughput will make 326 IAC 9-1 (Carbon Monoxide Emission Limits) not applicable.**

3) Operation Condition Nos. 13, 14, and 15 have been deleted and the others renumbered accordingly.

4) Operation Condition No. 16 (now Operation Condition No. 13) has changed to the following to correct the concerned emission units:

Visible Emission Notations

16. That visible emission notations of all exhausts to the atmosphere from the ~~two (2) medium to heavy load wet collectors (WC-E and WC-W), the wet scrubber (WS-1), and the two (2) baghouses (BH-1 and BH-2)~~ **two (2) 10.2 ton per hour electric induction furnaces** shall be performed once per ~~day or~~ working shift. A trained employee will record whether emissions are normal or abnormal.

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

(b) In the case of batch or discontinuous operation, readings shall be taken during that part of the operation specified in the facility's specific condition prescribing visible emissions.

(c) 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 and abnormal visible emissions for that specific process.

(d) The Preventive Maintenance Plan for this facility shall contain troubleshooting contingency and corrective actions for when an abnormal emission is observed.

5) Note that 326 IAC 6-3-2 in the TSD should be changed as follows:

326 IAC 6-3-2 (Process Operations)

The particulate matter (PM) emissions from the two (2) 10.2 ton per hour electric induction furnace**s** ~~operations~~ will be limited to 30.9 pounds per hour, equivalent to 135 tons per year when operating at a process weight rate of 20.4 tons per hour at 8760 hours. Since **potential** PM emissions **are 18.36 pounds per hour at 8,760 hours, equivalent to 80.4 tons per year** ~~after limited melt throughput and controls are 6.21 pounds per hour, equivalent to 27.2 tons per year~~, the two (2) 10.2 ton per hour electric induction furnace**s** ~~operations~~ will comply with this rule **without controls or limits.** ~~Compliance will be demonstrated by operating the two (2) medium to heavy load wet collectors (WC-E and WC-W), the wet scrubber (WS-1), and the two (2) baghouses (BH-1 and BH-2) at all times when the electric induction furnace operations are taking place~~. **After limited melt throughput of 11,960 tons per year, PM emissions from this facility are 2.39 pounds per hour at 4,500 actual hours of operation, equivalent to 5.38 tons per year.**

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

$E = 4.10\ (20.4\ \text{tons/hr})^{0.67} = 30.9$ pounds per hour.

Mail to: Permit Administration & Development Section
Office of Air Management
100 North Senate Avenue
P.O. Box 6015
Indianapolis, Indiana 46206-6015

Noblesville Castings, Inc.
1600 South 8th Street
Noblesville, IN. 46060

Affidavit of Construction

I, _____, being duly sworn upon my oath, depose and say:
(Name of the Authorized Representative)

1. I live in _____ County, Indiana and being of sound mind and over twenty-one (21) years of age, I am competent to give this affidavit.

2. I hold the position of _____ for Noblesville Castings, Inc. .
(Title) (Company Name)

3. By virtue of my position with Noblesville Castings, Inc., I have personal knowledge of the representations contained in this affidavit and am authorized to make these representations on behalf of Noblesville Castings, Inc.

4. I hereby certify that Noblesville Castings, Inc., 1600 South 8th Street, Noblesville, Indiana 46060, has constructed the two (2) 10.2 ton per hour electric induction furnaces and an additional emission control shroud on the Magnesium Treatment/Ladle Filling operation venting to one (1) reactivated Schneible medium to heavy load wet collector in conformity with the requirements and intent of the Construction Permit application received by the Office of Air Management on April 13, 1998 and as permitted pursuant to **Construction Permit No. 057-9664, Plant ID No. 057-00002** issued on .

5. I hereby certify that Noblesville Castings, Inc., 1600 South 8th Street, Noblesville, Indiana 46060, has removed the two (2) 2.5 ton per hour electric induction furnaces, known as EU-3 and EU-5, in conformity with the requirements and intent of the Construction Permit application received by the Office of Air Management on April 13, 1998 and as permitted pursuant to **Construction Permit No. 057-9664, Plant ID No. 057-00002** issued on _____.

6. Additional TYPEOFFACILITY were constructed/substituted as described in the attachment to this document and were not made in accordance with the Construction Permit.

7. I hereby certify that Noblesville Castings, Inc. has submitted their Part 70 (T 057-6487-00002) application on August 30, 1996 for the existing source. The equipment being reviewed under this permit shall be incorporated in the submitted Part 70 application.

Further Affiant said not.

I affirm under penalties of perjury that the representations contained in this affidavit are true, to the best of my information and belief.

_____
Signature

_____
Date

STATE OF INDIANA)
)SS
COUNTY OF _____)

Subscribed and sworn to me, a notary public in and for _____ County and State of Indiana on this _____ day of _____, 19 _____.

My Commission expires: _____.

_____
Signature

_____
Name (typed or printed)

Appendix A: Emission Calculations
Grey Iron Foundry

Company Name: Noblesville Castings, Inc.
Address City IN Zip: 1600 South 8th Street, Noblesville, IN 46060
CP No.: CP 057-9664
Plt ID: 057-00002
Reviewer: Peter E. Fountaine
Date: April 13, 1998

Iron Process	Potential Throughput (tons/hr)		PM Control	Limited Throughput (tons/hr)	
Electric Induction	20.4	total	0.0%	2.657	@ 4500 hours per year

(EU-3, EU-5)	PM	PM10	Pb	Be	Allowable PM 326 IAC 6-3-2
Emission Factors lbs/ton produced	0.900	0.860	0.000689	0.00000100	
Percentage of Emissions	100.00%	100.00%	100.00%	100.00%	
Potential Emissions (lbs/hr)	18.4	17.5	0.0141	0.0000204	30.9
Potential Emissions (tons/yr)	80.4	76.8	0.0616	0.0000894	135
Limited Emissions with hourly throughput limit and controls (lbs/hr)	2.39	2.29	0.00183	0.00000266	
Limited Emissions with hourly throughput limit and controls (tons/yr)	5.38	5.14	0.00412	0.00000598	

Iron Process	Potential Throughput (tons/hr)		PM Control	Limited Throughput (tons/hr)	
Scrap & Charge Handling	20.4		0.0%	2.657	@ 4500 hours per year

(EU-2)	PM	PM10	Pb	Be	Allowable PM 326 IAC 6-3-2
Emission Factors lbs/ton produced	0.600	0.360	0.000460	0.000001	
Percentage of Emissions	100.00%	100.00%	100.00%	100.00%	
Potential Emissions (lbs/hr)	12.2	7.34	0.00938	0.0000204	30.9
Potential Emissions (tons/yr)	53.6	32.2	0.0411	0.0000894	135
Limited Emissions with hourly throughput limit and controls (lbs/hr)	1.59	0.957	0.00122	0.00000266	
Limited Emissions with hourly throughput limit and controls (tons/yr)	3.59	2.15	0.00275	0.00000598	

Methodology:

Limited Throughput = (Limited yearly throughput of 11,960 tons per year of iron)/(4500 hours per year of operation)
Potential Throughput was determined by the maximum capacity of the electric induction furnaces.
PM and PM 10 emission factors were supplied by the AIRS Facility Subsystyem Emission Factor Listing For Criteria Air Pollutants.
Pb and Be emission factors were supplied by the applicant.

Iron Process	Potential Throughput (tons/hr)		PM Control	Limited Throughput (tons/hr)	
Magnesium Treatment (Inoculation)	20.4	total	88.2%	2.657	@ 4500 hours per year

(EU-6)	PM	PM10	Pb	Be	Allowable PM 326 IAC 6-3-2
Emission Factors lbs/ton produced	1.80	1.62	0.00138	0.000002	
Percentage of Emissions	11.80%	11.80%	11.80%	11.80%	
Potential Emissions (lbs/hr)	36.7	33.0	0.0281	0.0000408	30.9
Potential Emissions (tons/yr)	161	145	0.123	0.000179	135
Limited Emissions with hourly throughput limit and controls (lbs/hr)	0.564	0.508	0.00366	0.00000531	
Limited Emissions with hourly throughput limit and controls (tons/yr)	1.27	1.14	0.00824	0.0000120	

Iron Process	Potential Throughput (tons/hr)		PM Control	Limited Throughput (tons/hr)	
Pouring Casting	20.4	total	93.1%	2.657	@ 4500 hours per year

(EU-7, EU-8, EU-9)	PM	PM10	SO2	NOx	VOC	Pb	Be	Allowable PM 326 IAC 6-3-2
Emission Factors lbs/ton produced	2.80	2.80	0.020	0.010	0.140	0.00322	0.000004	
Percentage of Emissions	6.90%	6.90%	100.00%	100.00%	100.00%	6.90%	6.90%	
Potential Emissions (lbs/hr)	57.1	57.1	0.408	0.204	2.86	0.0656	0.0000816	30.9
Potential Emissions (tons/yr)	250	250	1.79	0.894	12.5	0.287	0.000357	135
Limited Emissions with hourly throughput limit and controls (lbs/hr)	0.513	0.513	0.0531	0.0266	0.372	0.000590	0.000000733	
Limited Emissions with hourly throughput limit and controls (tons/yr)	1.15	1.15	0.120	0.0598	0.837	0.00133	0.00000165	

Methodology:

Limited Throughput = (Limited yearly throughput of 11,960 tons per year of iron)/(4500 hours per year of operation)
Potential Throughput was determined by the maximum capacity of the electric induction furnaces.
Pouring Casting PM, PM 10, SO2, NOx, and VOC emission factors were supplied by the AIRS Facility Subsystyem Emission Factor Listing For Criteria Air Pollutants.
Magnesium Treatment (Inoculation), Pb, and Be emission factors were supplied by the applicant.

Iron Process	Potential Throughput (tons/hr)		PM Control	Limited Throughput (tons/hr)	
Casting Cooling	20.4	total	49.0%	2.657	@ 4500 hours per year

(EU-7A, EU-8A, EU-9A)	PM	PM10	Pb	Be	Allowable PM 326 IAC 6-3-2
Emission Factors lbs/ton produced	1.40	1.40	0.00107	0.00000100	
Percentage of Emissions	51.00%	51.00%	51.00%	51.00%	
Potential Emissions (lbs/hr)	28.6	28.6	0.0219	0.0000204	30.9
Potential Emissions (tons/yr)	125	125	0.0958	0.0000894	135
Limited Emissions with hourly throughput limit and controls (lbs/hr)	1.90	1.90	0.00145	0.00000136	7.89
Limited Emissions with hourly throughput limit and controls (tons/yr)	4.27	4.27	0.00327	0.00000305	17.8

Iron Process	Potential Throughput (tons/hr)		PM Control	Limited Throughput tons/hr	
Shakeout	20.4	total	88.2%	2.657	@ 4500 hours per year

(EU-11, EU-12, EU-13)	PM	PM10	VOC	Pb	Be	Allowable PM 326 IAC 6-3-2
Emission Factors lbs/ton produced	3.20	2.24	1.20	0.00245	0.00000300	
Percentage of Emissions	11.80%	11.80%	100.00%	11.80%	11.80%	
Potential Emissions (lbs/hr)	65.3	45.7	24.5	0.0500	0.0000612	30.9
Potential Emissions (tons/yr)	286	200	107	0.219	0.000268	135
Limited Emissions with hourly throughput limit and controls (lbs/hr)	1.00	0.702	3.19	0.000768	0.000000941	
Limited Emissions with hourly throughput limit and controls (tons/yr)	2.26	1.58	7.17	0.00173	0.00000212	

Methodology:

Limited Throughput = (Limited yearly throughput of 11,960 tons per year of iron)/(4500 hours per year of operation)
Potential Throughput was determined by the maximum capacity of the electric induction furnaces.
PM , PM 10, and VOC emission factors were supplied by the AIRS Facility Subsystyem Emission Factor Listing For Criteria Air Pollutants.
Pb and Be emission factors were supplied by the applicant.

Iron Process	Potential Throughput (tons/hr)		PM Control	Limited Throughput (tons/hr)	
Sand Grinding and Handling	102	total	58.8%	13.3	@ 4500 hours per year

(EU-16, through EU-27)	PM	PM10
Emission Factors lbs/ton sand handled	0.650	0.540
Percentage of Emissions	41.20%	41.20%
Potential Emissions (lbs/hr)	66.3	55.1
Potential Emissions (tons/yr)	290	241
Limited Emissions with hourly throughput limit and controls (lbs/hr)	3.56	2.96
Limited Emissions with hourly throughput limit and controls (tons/yr)	8.01	6.66

Iron Process	Potential Throughput (tons/hr)		PM Control	Limited Throughput (tons/hr)	
Tumbleblast Cleaning	11.2	total	98.0%	1.46	@ 4500 hours per year

(EU-30, EU-31)	PM	PM10	Pb	Be
Emission Factors lbs/ton finished casting	17.0	1.70	0.0130	0.0000170
Percentage of Emissions	1.99%	1.99%	1.99%	1.99%
Potential Emissions (lbs/hr)	191	19.1	0.146	0.000191
Potential Emissions (tons/yr)	835	83.5	0.640	0.000835
Limited Emissions with hourly throughput limit and controls (lbs/hr)	0.494	0.0494	0.000378	0.000000494
Limited Emissions with hourly throughput limit and controls (tons/yr)	1.11	0.111	0.000851	0.00000111

Methodology:

Limited Throughput (Sand Grinding/Handling) = (Limited yearly throughput of 59,801 tons per year of sand)/(4500 hours per year of operation)
Limited Throughput (Tumbleblast Cleaning) = (Limited yearly throughput of 6,578 tons per year of finished castings)/(4500 hours per year of operation)
Potential Throughput = (Limited throughput) x ((20.4) (electric induction potential)/(2.657)(electric induction limit)) .
PM and PM 10 emission factors were supplied by the AIRS Facility Subsystyem Emission Factor Listing For Criteria Air Pollutants.
Pb and Be emission factors were supplied by the applicant.

Iron Process	Potential Throughput (tons/hr)		PM Control	Limited Throughput (tons/hr)	
Casting Grinding and Finishing	11.2	total	98.0%	1.46	@ 4500 hours per year

(EU-32, EU-33)	PM	PM10	Pb
Emission Factors lbs/ton finished casting	0.0100	0.00450	0.00000800
Percentage of Emissions	1.99%	1.99%	1.99%
Potential Emissions (lbs/hr)	0.112	0.0505	0.0000898
Potential Emissions (tons/yr)	0.491	0.221	0.000393
Limited Emissions with hourly throughput limit and controls (lbs/hr)	0.000291	0.000131	0.000000232
Limited Emissions with hourly throughput limit and controls (tons/yr)	0.000654	0.000294	0.000000523

Iron Process	Potential Throughput (tons/hr)		Limited Throughput (tons/hr)	
Core Manufacture	1.67	total	0.218	@ 4500 hours per year

(EU-28, EU-29)	VOC
Emission Factors lbs/ton cores produced	8.24
Percentage of Emissions	100.00%
Potential Emissions (lbs/hr)	13.8
Potential Emissions (tons/yr)	60.3
Limited Emissions with hourly throughput limit and controls (lbs/hr)	1.80
Limited Emissions with hourly throughput limit and controls (tons/yr)	4.04

Methodology:

Limited Throughput (Casting Grinding & Finishing) = (Limited yearly throughput of 6,578 tons per year of finished castings)/(4500 hours per year of operation)
Limited Throughput (Core Manufacture) = (Limited yearly throughput of 983 tons per year of cores manufactured)/(4500 hours per year of operation)
Potential Throughput = (Limited throughput) x ((20.4) (electric induction potential)/(2.657)(electric induction limit)) .
PM and PM 10 emission factors were supplied by the AIRS Facility Subsystyem Emission Factor Listing For Criteria Air Pollutants.
Pb, Be, and VOC emission factors were supplied by the applicant.

Iron Process	Potential Throughput (tons/hr)		PM Control	Limited Throughput (tons/hr)	
Core Sand Handling	1.67	total	93.1%	0.218	@ 4500 hours per year

	PM	PM10
Emission Factors lbs/ton sand handled	0.650	0.540
Percentage of Emissions	6.90%	6.90%
Potential Emissions (lbs/hr)	1.09	0.902
Potential Emissions (tons/yr)	4.75	3.95
Limited Emissions with hourly throughput limit and controls (lbs/hr)	0.00978	0.00812
Limited Emissions with hourly throughput limit and controls (tons/yr)	0.0220	0.0183

Iron Process
Natural Gas Usage

Potential Heat Input Capacity (MMBtu/hr)	Potential Throughput (MMCF/hr)		Limited Throughput (MMCF/hr)	
0.0325	0.285		0.00372	@ 4500 hours per year

	Pollutant					
	PM	PM10	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	11.2	11.2	0.6	94.0	7.3	40.0
Potential Emission in tons/yr	14.0	14.0	0.749	117	9.11	49.9
Limited Emission in tons/yr	0.094	0.094	0.00502	0.79	0.0611	0.335

Methodology:

MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
Limited Throughput (Core Sand Handling) = (Limited yearly throughput of 983 tons per year of cores manufactured)/(4500 hours per year of operation)
Potential Throughput = (Limited throughput) x ((20.4) (electric induction potential)/(2.657)(electric induction limit)) .
Natural Gas emission factors from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, and 1.4-3.
Core Sand Handling emission factors were supplied by the applicant.

Noblesville Castings, Inc.
Noblesville, Indiana

Grey Iron Foundry

SUMMARY OF EMISSIONS

Process Description	Before/After Control and/or Limit	PM (tpy)	PM10 (tpy)	SO2 (tpy)	NOx (tpy)	VOC (tpy)	CO (tpy)	Pb (tpy)	Be (tpy)
Electric Induction	Before	80.4	76.8	0.00	0.00	0.00	0.00	0.0616	0.0000894
	After	5.38	5.14	0.00	0.00	0.00	0.00	0.00412	0.00000598
Scrap and Charge Handling	Before	53.6	32.2	0.00	0.00	0.00	0.00	0.0411	0.0000894
	After	3.59	2.15	0.00	0.00	0.00	0.00	0.00275	0.00000598
Inoculation	Before	161	145	0.00	0.00	0.00	0.00	0.123	0.000179
	After	1.27	1.14	0.00	0.00	0.00	0.00	0.00824	0.0000120
Pouring Casting	Before	250	250	1.79	0.894	12.5	0.00	0.287	0.000357
	After	1.15	1.15	0.120	0.0598	0.837	0.00	0.00133	0.00000165
Casting Cooling	Before	125	125	0.00	0.00	0.00	0.00	0.0958	0.0000894
	After	4.27	4.27	0.00	0.00	0.00	0.00	0.00327	0.00000305
Shakeout	Before	286	200	0.00	0.00	107	0.00	0.219	0.000268
	After	2.26	1.58	0.00	0.00	7.17	0.00	0.00173	0.00000212
Sand Grinding and Handling	Before	290	241	0.00	0.00	0.00	0.00	0.00	0.00
	After	8.01	6.66	0.00	0.00	0.00	0.00	0.00	0.00
Tumbleblast Cleaning	Before	835	83.5	0.00	0.00	0.00	0.00	0.640	0.000835
	After	1.11	0.111	0.00	0.00	0.00	0.00	0.000851	0.00000111
Casting Grinding and Finishing	Before	0.491	0.221	0.00	0.00	0.00	0.00	0.000393	0.00
	After	0.000654	0.000294	0.00	0.00	0.00	0.00	0.000000523	0.00
Core Manufacture	Before	0.00	0.00	0.00	0.00	60.3	0.00	0.00	0.00
	After	0.00	0.00	0.00	0.00	4.04	0.00	0.00	0.00
Core sand Handling	Before	4.75	3.95	0.00	0.00	0.00	0.00	0.00	0.00
	After	0.0220	0.0183	0.00	0.00	0.00	0.00	0.00	0.00
Natural Gas Usage	Before	14.0	14.0	0.749	117	9.11	49.9	0.00	0.00
	After	0.094	0.094	0.00502	0.79	0.0611	0.335	0.00	0.00
TOTALS	**Before:**	**2101**	**1172**	**2.54**	**118**	**189**	**49.9**	**1.47**	**0.00191**
	Limited and Controlled:	**27.2**	**22.3**	**0.125**	**0.847**	**12.1**	**0.335**	**0.0223**	**0.0000318**

Appendix A: HAPs Emission Calculations
Grey Iron Foundry

Company Name: Noblesville Castings, Inc.
Address City IN Zip: 1600 South 8th Street, Noblesville, IN 46060
CP No.: CP 057-9664
Plt ID: 057-00002
Reviewer: Peter E. Fountaine
Date: April 13, 1998

Iron Process	Potential Throughput (tons/hr)		Limited Throughput (tons/hr)	
Electric Induction	20.4	total	2.657	@ 4500 hours per year

(EU-3, EU-5)	Lead	Arsenic	Beryllium	Cadmium	Nickel	Antimony	Cobalt	Chromium	Copper	Manganese	Selenium
Emission Factors lbs/ton produced	0.000689	0.0000180	0.00000100	0.000112	0.000615	0.0000160	0.00000100	0.000647	0.00211	0.00233	0.00000100
Potential Emissions (lbs/hr)	0.0141	0.000367	0.0000204	0.00228	0.0125	0.000326	0.0000204	0.0132	0.0430	0.0476	0.0000204
Potential Emissions (grams/sec)	0.00000000860	0.000000000225	0.0000000000125	0.00000000140	0.00000000768	0.000000000200	0.0000000000125	0.00000000808	0.0000000263	0.0000000291	0.0000000000125
Potential Emissions (tons/yr)	0.0616	0.00161	0.0000894	0.0100	0.0550	0.00143	0.0000894	0.0578	0.188	0.208	0.0000894
Limited Emissions with hourly throughput limit and controls (lbs/hr)	0.00183	0.0000478	0.00000266	0.000298	0.00163	0.0000425	0.00000266	0.00172	0.00560	0.00619	0.00000266
Limited Emissions with hourly throughput limit and controls (tons/yr)	0.00412	0.000108	0.00000598	0.000670	0.00368	0.0000957	0.00000598	0.00387	0.0126	0.0139	0.00000598

Iron Process	Potential Throughput (tons/hr)		Limited Throughput (tons/hr)	
Charge Handling	20.4		2.657	@ 4500 hours per year

(EU-2)	Lead	Arsenic	Beryllium	Cadmium	Nickel	Antimony	Cobalt	Chromium	Copper	Manganese	Selenium
Emission Factors lbs/ton produced	0.000460	0.0000120	0.00000100	0.0000740	0.000410	0.0000110	0.00000100	0.000431	0.00140	0.00155	0.00000100
Potential Emissions (lbs/hr)	0.00938	0.000245	0.0000204	0.00151	0.00836	0.000224	0.0000204	0.00879	0.0286	0.0317	0.0000204
Potential Emissions (grams/sec)	0.00000000574	0.000000000150	0.0000000000125	0.000000000924	0.00000000512	0.000000000137	0.0000000000125	0.00000000538	0.0000000175	0.0000000194	0.0000000000125
Potential Emissions (tons/yr)	0.0411	0.00107	0.0000894	0.00661	0.0366	0.000983	0.0000894	0.0385	0.125	0.139	0.0000894
Limited Emissions with hourly throughput limit and controls (lbs/hr)	0.00122	0.0000319	0.00000266	0.000197	0.00109	0.0000292	0.00000266	0.00115	0.00373	0.00413	0.00000266
Limited Emissions with hourly throughput limit and controls (tons/yr)	0.00275	0.0000717	0.00000598	0.000442	0.00245	0.0000658	0.00000598	0.00258	0.00839	0.00929	0.00000598

Methodology:

Limited Throughput = (Limited yearly throughput of 11,960 tons per year of iron)/(4500 hours per year of operation)
Potential Throughput was determined by the maximum capacity of the electric induction furnaces.
Emission factors were supplied by the applicant and dervived from sample testing.

Iron Process	Potential Throughput (tons/hr)		PM Control	Limited Throughput (tons/hr)	
Inoculation	20.4	total	88.2%	2.657	@ 4500 hours per year

(EU-6)	Lead	Arsenic	Beryllium	Cadmium	Nickel	Antimony	Cobalt	Chromium	Copper	Manganese	Selenium
Emission Factors lbs/ton produced	0.00138	0.0000360	0.00000200	0.000223	0.00123	0.0000320	0.00000200	0.00129	0.00421	0.00466	0.00000200
Potential Emissions (lbs/hr)	0.0281	0.000734	0.0000408	0.00455	0.0251	0.000653	0.0000408	0.0264	0.0859	0.0951	0.0000408
Potential Emissions (grams/sec)	0.0000000172	0.000000000449	0.0000000000250	0.00000000278	0.0000000153	0.000000000399	0.0000000000250	0.0000000162	0.0000000526	0.0000000582	0.0000000000250
Potential Emissions (tons/yr)	0.123	0.00322	0.000179	0.0199	0.110	0.00286	0.000179	0.116	0.376	0.417	0.000179
Limited Emissions with hourly throughput limit and controls (lbs/hr)	0.000432	0.0000113	0.000000627	0.0000699	0.000385	0.0000100	0.000000627	0.000406	0.00132	0.00146	0.000000627
Limited Emissions with hourly throughput limit and controls (tons/yr)	0.000973	0.0000254	0.00000141	0.000157	0.000867	0.0000226	0.00000141	0.000913	0.00297	0.00329	0.00000141

Iron Process	Potential Throughput (tons/hr)		PM Control	Limited Throughput (tons/hr)	
Pouring Casting	20.4	total	88.2%	2.657	@ 4500 hours per year

(EU-7, EU-8, EU-9)	Lead	Arsenic	Beryllium	Cadmium	Nickel	Antimony	Cobalt	Chromium	Copper	Manganese	Selenium
Emission Factors lbs/ton produced	0.00322	0.0000840	0.00000400	0.000521	0.00287	0.0000760	0.00000400	0.00302	0.00983	0.0109	0.00000400
Potential Emissions (lbs/hr)	0.0656	0.00171	0.0000816	0.0106	0.0585	0.00155	0.0000816	0.0616	0.200	0.222	0.0000816
Potential Emissions (grams/sec)	0.0000000402	0.00000000105	0.0000000000499	0.00000000650	0.0000000358	0.000000000949	0.0000000000499	0.0000000377	0.000000123	0.000000136	0.0000000000499
Potential Emissions (tons/yr)	0.287	0.00751	0.000357	0.0466	0.256	0.00679	0.000357	0.270	0.878	0.972	0.000357
Limited Emissions with hourly throughput limit and controls (lbs/hr)	0.00101	0.0000263	0.00000125	0.000163	0.000900	0.0000238	0.00000125	0.000947	0.00308	0.00341	0.00000125
Limited Emissions with hourly throughput limit and controls (tons/yr)	0.00227	0.0000593	0.00000282	0.000368	0.00202	0.0000536	0.00000282	0.00213	0.00693	0.00767	0.00000282

Methodology:

Limited Throughput = (Limited yearly throughput of 11,960 tons per year of iron)/(4500 hours per year of operation)

Potential Throughput was determined by the maximum capacity of the electric induction furnaces.

Emission factors were supplied by the applicant and dervived from sample testing.

Noblesville Castings, Inc.
Noblesville, Indiana

Iron Process	Potential Throughput (tons/hr)		PM Control	Limited Throughput (tons/hr)	
Casting Cooling	20.4	total	49.0%	2.657	@ 4500 hours per year

(EU-7A, EU-8A, EU-9A)	Lead	Arsenic	Beryllium	Cadmium	Nickel	Antimony	Cobalt	Chromium	Copper	Manganese	Selenium
Emission Factors lbs/ton produced	0.00107	0.0000280	0.00000100	0.000174	0.000956	0.0000250	0.00000100	0.00101	0.00328	0.00363	0.00000100
Potential Emissions (lbs/hr)	0.0219	0.000571	0.0000204	0.00355	0.0195	0.000510	0.0000204	0.0205	0.0668	0.0740	0.0000204
Potential Emissions (grams/sec)	0.0000000134	0.000000000349	0.0000000000125	0.00000000217	0.0000000119	0.000000000312	0.0000000000125	0.0000000126	0.0000000409	0.0000000453	0.0000000000125
Potential Emissions (tons/yr)	0.0958	0.00250	0.0000894	0.0155	0.0854	0.00223	0.0000894	0.0900	0.293	0.324	0.0000894
Limited Emissions with hourly throughput limit and controls (lbs/hr)	0.00145	0.0000379	0.00000136	0.000236	0.00130	0.0000339	0.00000136	0.00136	0.00444	0.00491	0.00000136
Limited Emissions with hourly throughput limit and controls (tons/yr)	0.00327	0.0000854	0.00000305	0.00053	0.00291	0.0000762	0.00000305	0.00307	0.0100	0.0111	0.00000305

Iron Process	Potential Throughput (tons/hr)		PM Control	Limited Throughput tons/hr	
Shakeout	20.4	total	88.2%	2.657	@ 4500 hours per year

(EU-11, EU-12, EU-13)	Lead	Arsenic	Beryllium	Cadmium	Nickel	Antimony	Cobalt	Chromium	Copper	Manganese	Selenium
Emission Factors lbs/ton produced	0.00245	0.0000640	0.00000300	0.000397	0.00219	0.0000580	0.00000300	0.00230	0.00749	0.00829	0.00000300
Potential Emissions (lbs/hr)	0.0500	0.00131	0.0000612	0.00810	0.0446	0.00118	0.0000612	0.0469	0.153	0.169	0.0000612
Potential Emissions (grams/sec)	0.0000000306	0.000000000799	0.0000000000374	0.00000000496	0.0000000273	0.000000000724	0.0000000000374	0.0000000287	0.0000000935	0.000000103	0.0000000000374
Potential Emissions (tons/yr)	0.219	0.00572	0.000268	0.0355	0.195	0.00518	0.000268	0.206	0.669	0.741	0.000268
Limited Emissions with hourly throughput limit and controls (lbs/hr)	0.000768	0.0000201	0.000000941	0.000124	0.000685	0.0000182	0.000000941	0.000721	0.00235	0.00260	0.000000941
Limited Emissions with hourly throughput limit and controls (tons/yr)	0.00173	0.0000451	0.00000212	0.000280	0.00154	0.0000409	0.00000212	0.00162	0.00528	0.00585	0.00000212

Methodology:

Limited Throughput = (Limited yearly throughput of 11,960 tons per year of iron)/(4500 hours per year of operation)

Potential Throughput was determined by the maximum capacity of the electric induction furnaces.

Emission factors were supplied by the applicant and dervived from sample testing.

Iron Process	Potential Hours (hrs/yr)		PM Control	Limited Hours (hrs/yr)
Tumbleblast Cleaning	8760	total	98.0%	4500

(EU-30, EU-31)	Lead	Arsenic	Beryllium	Cadmium	Nickel	Antimony	Cobalt	Chromium	Copper	Manganese	Selenium
Emission Factors lbs/ton produced	0.0130	0.000340	0.0000170	0.00211	0.0116	0.000306	0.000510	0.0122	0.0398	0.0440	0.0000170
Emission Rate (lbs/hr)	0.0190	0.000497	0.0000250	0.00308	0.0170	0.000447	0.000746	0.0179	0.0582	0.0644	0.0000250
Potential Emissions (grams/sec)	0.0000000116	0.000000000304	0.0000000000153	0.00000000189	0.0000000104	0.000000000273	0.000000000456	0.0000000109	0.0000000356	0.0000000394	0.0000000000153
Potential Emissions (tons/yr @ 8760 hours)	0.0834	0.00218	0.000110	0.0135	0.0743	0.00196	0.00327	0.0783	0.255	0.282	0.000110
Limited Emissions after controls (tons/yr @ 4500 hours with 98% control)	0.000852	0.0000223	0.00000112	0.000138	0.000760	0.0000200	0.0000334	0.000800	0.00260	0.00288	0.00000112

Iron Process	Potential Hours (hrs/yr)		PM Control	Limited Hours (hrs/yr)
Casting Grinding and Finishing	8760	total	98.0%	4500

(EU-32, EU-33)	Lead	Arsenic	Beryllium	Cadmium	Nickel	Antimony	Cobalt	Chromium	Copper	Manganese	Selenium
Emission Factors lbs/ton produced	0.00000800	0.00	0.00	0.00000100	0.00000700	0.00	0.00	0.00000700	0.0000230	0.0000260	0.00
Emission Rate (lbs/hr)	0.000011	0.00	0.00	0.0000020	0.000010	0.00	0.00	0.000011	0.00003	0.00004	0.00
Potential Emissions (grams/sec)	0.000000000007	0.00	0.00	0.0000000000012	0.000000000006	0.00	0.00	0.000000000007	0.000000000021	0.000000000023	0.00
Potential Emissions (tons/yr @ 8760 hours)	0.09636	0.00	0.00	0.0175	0.0876	0.00	0.00	0.0964	0.298	0.333	0.00
Limited Emissions after controls (tons/yr @ 4500 hours with 98% control)	0.000000493	0.00	0.00	0.0000000895	0.000000448	0.00	0.00	0.000000493	0.00000152	0.00000170	0.00

Methodology:

Limited Throughput = 4500 hours per year of operation

Potential Throughput was determined by the maximum hours of operation.

Emission factors were supplied by the applicant and dervived from sample testing.

Iron Process		Potential Hours (hrs/yr)		PM Control		Limited Hours (hrs/yr)
Core Manufacture		8760	total	98.0%		4500

(EU-28, EU-29)	Phenol	Naphthalene	Triethlyamine	Methylene Bis (Phenylisocyanate)
Emission Factors lbs/ton produced	0.00	0.00	0.00	0.00
Emission Rate (lbs/hr)	0.00	0.00	0.00	0.00
Potential Emissions (grams/sec)	0.00	0.00	0.00	0.00
Potential Emissions (tons/yr @ 8760 hours)	0.00	0.00	0.00	0.00
Limited Emissions after controls (tons/yr @ 4500 hours with 98% control)	0.00	0.00	0.00	0.00

Iron Process		Potential Hours (hrs/yr)				Limited Hours (hrs/yr)		
Pouring/Cooling/Shakeout (Green Sand Binder)		8760	total			4500		

	Acrolein	Benzene	Formaldehyde	Xylene	Naphthalene	Phenol	Toluene	Aldehydes
Emission Factors lbs/ton produced	0.00000200	0.000611	0.00000400	0.0000420	0.0000210	0.000131	0.0000630	0.0000630
Emission Rate (lbs/hr)	0.0000270	0.00812	0.0000530	0.000558	0.000279	0.00174	0.000837	0.000837
Potential Emissions (grams/sec)	0.0000000000165	0.00000000497	0.0000000000324	0.000000000341	0.000000000171	0.00000000107	0.000000000512	0.000000000512
Potential Emissions (tons/yr @ 8760 hours)	0.237	71.1	0.464	4.89	2.44	15.3	7.33	7.33
Limited Emissions after controls and/or limit (tons/yr @ 4500 hours)	0.0000608	0.0183	0.000119	0.00126	0.000628	0.00392	0.00188	0.00188

Methodology:

Limited Throughput = 4500 hours per year of operation

Potential Throughput was determined by the maximum hours of operation.

Emission factors were supplied by the applicant and dervived from sample testing.

Iron Process		Potential Hours (hrs/yr)		Limited Hours (hrs/yr)				
Pouring/Cooling/Shakeout (Phenolic Urethane Cold Box)		8760	total	4500				
	Acrolein	Benzene	Formaldehyde	Xylene	Naphthalene	Phenol	Toluene	Aldehydes
Emission Factors lbs/ton produced	0.00003100	0.005351	0.00002200	0.0005710	0.0000220	0.003904	0.0008330	0.0000630
Emission Rate (lbs/hr)	0.000412	0.0711	0.000292	0.00759	0.000292	0.0519	0.0111	0.000837
Potential Emissions (grams/sec)	0.000000000252	0.0000000435	0.000000000179	0.00000000464	0.000000000179	0.0000000317	0.00000000677	0.000000000512
Potential Emissions (tons/yr @ 8760 hours)	3.61	623	2.56	66.5	2.56	454	97.0	7.33
Limited Emissions after controls and/or limit (tons/yr @ 4500 hours)	0.000927	0.160	0.000657	0.0171	0.000657	0.117	0.0249	0.00188

Methodology:

Limited Throughput = 4500 hours per year of operation

Potential Throughput was determined by the maximum hours of operation.

Emission factors were supplied by the applicant and dervived from sample testing.

SUMMARY OF EMISSIONS

Process Description	Before/After Control	Lead (tpy)	Arsenic (tpy)	Beryllium (tpy)	Cadmium (tpy)	Nickel (tpy)	Antimony (tpy)	Cobalt (tpy)	Chromium (tpy)	Copper (tpy)	Manganese (tpy)
Electric Induction	Before	0.0616	0.00161	0.0000894	0.0100	0.0550	0.00143	0.0000894	0.0578	0.188	0.208
	After	0.00412	0.000108	0.00000266	0.000670	0.00368	0.0000957	0.00000598	0.00387	0.0126	0.0139
Scrap and Charge Handling	Before	0.0411	0.00107	0.0000894	0.00661	0.0366	0.000983	0.0000894	0.0385	0.125	0.139
	After	0.00275	0.0000717	0.00000598	0.000442	0.00245	0.0000658	0.00000598	0.00258	0.00839	0.00929
Inoculation	Before	0.123	0.00322	0.000179	0.0199	0.110	0.00286	0.000179	0.116	0.376	0.417
	After	0.000973	0.0000254	0.00000141	0.000157	0.000867	0.0000226	0.00000141	0.000913	0.00297	0.00329
Pouring Casting	Before	0.287	0.00751	0.000357	0.0466	0.256	0.00679	0.000357	0.270	0.878	0.972
	After	0.00227	0.0000593	0.00000282	0.000368	0.00202	0.0000536	0.00000282	0.00213	0.00693	0.00767
Casting Cooling	Before	0.0958	0.00250	0.0000894	0.0155	0.0854	0.00223	0.0000894	0.0900	0.293	0.324
	After	0.00327	0.0000854	0.00000305	0.000531	0.00291	0.0000762	0.00000305	0.00307	0.0100	0.0111
Shakeout	Before	0.219	0.00572	0.000268	0.0355	0.195	0.00518	0.000268	0.206	0.669	0.741
	After	0.00173	0.0000451	0.00000212	0.000280	0.00154	0.0000409	0.00000212	0.00162	0.00528	0.00585
Tumbleblast Cleaning	Before	0.08	0.0022	0.00011	0.013	0.07	0.0020	0.003	0.08	0.25	0.28
	After	0.000852	0.0000223	0.00000112	0.000138	0.000760	0.0000200	0.0000334	0.000800	0.00260	0.00288
Casting Grinding and Finishing	Before	0.0964	0.00	0.00	0.0175	0.0876	0.00	0.00	0.0964	0.298	0.333
	After	0.000000493	0.00	0.00	0.0000000895	0.000000448	0.00	0.00	0.000000493	0.00000152	0.00000170
Core Manufacture	Before	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	After	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pouring/Cooling/Shakeout (Green Sand Binder)	Before	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	After	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pouring/Cooling/Shakeout (Phenolic Urethane Cold Box)	Before	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	After	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Natural Gas Usage	Before	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	After	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00
SUBTOTALS	Before:	**1.01**	**0.0244**	**0.00118**	**0.165**	**0.90**	**0.0214**	**0.004**	**0.95**	**3.1**	**3.4**
	Limited and Controlled:	**0.0160**	**0.000417**	**0.0000192**	**0.00259**	**0.0142**	**0.000375**	**0.0000548**	**0.0150**	**0.0488**	**0.0540**

SUMMARY OF EMISSIONS

Process Description	Before/After Control	Selenium (tpy)	Acrolein (tpy)	Benzene (tpy)	Formaldehyde (tpy)	Xylene (tpy)	Naphthalene (tpy)	Phenol (tpy)	Toluene (tpy)	Aldehydes (tpy)
Electric Induction	Before	0.0000894	0.00	0.00	0.00	0.0000	0.0000000	0.00	0.0000	0.0000000
	After	0.00000598	0.00	0.00	0.00	0.00000	0.00000000	0.00	0.00000	0.00000000
Scrap and Charge Handling	Before	0.0000894	0.00	0.00	0.00	0.0000	0.0000000	0.00	0.0000	0.0000000
	After	0.00000598	0.00	0.00	0.00	0.00000	0.00000000	0.00	0.00000	0.00000000
Inoculation	Before	0.000179	0.00	0.00	0.00	0.000	0.000000	0.00	0.000	0.000000
	After	0.00000141	0.00	0.00	0.00	0.00000	0.0000000	0.00	0.00000	0.0000000
Pouring Casting	Before	0.000357	0.00	0.00	0.00	0.000	0.000000	0.00	0.000	0.000000
	After	0.00000282	0.00	0.00	0.00	0.00000	0.00000000	0.00	0.00000	0.00000000
Casting Cooling	Before	0.0000894	0.00	0.00	0.00	0.0000	0.0000000	0.00	0.0000	0.0000000
	After	0.00000305	0.00	0.00	0.00	0.00000	0.00000000	0.00	0.00000	0.00000000
Shakeout	Before	0.000268	0.00	0.00	0.00	0.000	0.000000	0.00	0.000	0.000000
	After	0.00000212	0.00	0.00	0.00	0.00000	0.00000000	0.00	0.00000	0.00000000
Tumbleblast Cleaning	Before	0.000110	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	After	0.00000112	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Casting Grinding and Finishing	Before	0.00	0.00	0.00	0.00	0.00	0.00000	0.00	0.00	0.00000
	After	0.00	0.00	0.00	0.00	0.00	0.00000000	0.00	0.000000	0.00000000
Core Manufacture	Before	0.00	0.00	0.00	0.00	0.00000	0.00	0.00	0.00000	0.00
	After	0.00	0.00	0.00	0.00	0.000000000	0.00	0.00	0.000000000	0.00
Pouring/Cooling/Shakeout (Green Sand Binder)	Before	0.00	0.237	71.1	0.464	4.89	2.44	15.3	7.33	7.33
	After	0.00	0.0000608	0.0183	0.000119	0.00126	0.000628	0.00392	0.00188	0.00188
Pouring/Cooling/Shakeout (Phenolic Urethane Cold Box)	Before	0.00	3.61	623	2.56	66.5	2.56	454	97.0	7.33
	After	0.00	0.000927	0.160	0.000657	0.0171	0.000657	0.117	0.0249	0.00188
Natural Gas Usage	Before	0.00	0.00	0.00	0.00	0.00	0.00	0.0	0.00	0.00
	After	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00
SUBTOTALS (tons/yr)	Before:	**0.00118**	**3.85**	**694**	**3.02**	**71.4**	**5.00**	**470**	**104**	**14.7**
	Limited and Controlled:	**0.0000225**	**0.000988**	**0.178**	**0.000776**	**0.0183**	**0.00128**	**0.121**	**0.0268**	**0.00377**

HAP TOTALS (tons/yr)	Before:	1376
	Limited and Controlled:	0.502