

1

Facility Name: **Quality Castings Company**

Application Number: **02-2565**

Date: **Draft PTI (Date will be entered upon final issuance)**

GENERAL PERMIT CONDITIONS

TERMINATION OF PERMIT TO INSTALL

Substantial construction for installation must take place within 18 months of the effective date of this permit. This deadline may be extended by up to 12 months if application is made to the Director within a reasonable time before the termination date and the party shows good cause for any such extension.

NOTICE OF INSPECTION

The Director of the Ohio Environmental Protection Agency, or his authorized representatives, may enter upon the premises of the above-named applicant during construction and operation at any reasonable time for the purpose of making inspections, conducting tests, or to examine records or reports pertaining to the construction, modification or installation of the source(s) of environmental pollutants identified within this permit.

CONSTRUCTION OF NEW SOURCES

The proposed source(s) shall be constructed in strict accordance with the plans and application submitted for this permit to the Director of the Ohio Environmental Protection Agency. There may be no deviation from the approved plans without the express, written approval of the Agency. Any deviations from the approved plans or the above conditions may lead to such sanctions and penalties as provided under Ohio law. Approval of these plans does not constitute an assurance that the proposed facilities will operate in compliance with all Ohio laws and regulations. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed sources are inadequate or cannot meet applicable standards.

If the construction of the proposed source(s) has already begun or has been completed prior to the date the Director of the Environmental Protection Agency approves the permit application and plans, the approval does not constitute expressed or implied assurance that the proposed facility has been constructed in accordance with the approved plans. The action of beginning and/or completing construction prior to obtaining the Director's approval constitutes a violation of Ohio Administrative Code (OAC) Rule 3745-31-02. Furthermore, issuance of the Permit to Install does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. Approval of the plans in any case is not to be construed as

2

Facility Name: **Quality Castings Company**

Application Number: **02-2565**

Date: **Draft PTI (Date will be entered upon final issuance)**

an approval of the facility as constructed and/or completed. Moreover, issuance of the Permit to Install is not to be construed as a waiver of any rights that the Ohio Environmental Protection Agency (or other persons) may have against the applicant for starting construction prior to the effective date of the permit. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed facilities cannot meet applicable standards.

PERMIT TO INSTALL FEE

In accordance with Ohio Revised Code 3745.11, the specified Permit to Install fee must be remitted within 30 days of the effective date of this permit to install.

PUBLIC DISCLOSURE

The facility is hereby notified that this permit, and all agency records concerning the operation of this permitted source, are subject to public disclosure in accordance with OAC Rule 3745-49-03.

APPLICABILITY

This Permit to Install is applicable only to the contaminant sources identified. Separate application must be made to the Director for the installation or modification of any other contaminant sources.

Facility Name: **Quality Castings Company**

Application Number: **02-2565**

Date: **Draft PTI (Date will be entered upon final issuance)**

BEST AVAILABLE TECHNOLOGY

As specified in OAC Rule 3745-31-05, all new sources must employ Best Available Technology (BAT). Compliance with the terms and conditions of this permit will fulfill this requirement.

PERMIT TO OPERATE APPLICATION

A Permit to Operate application must be submitted to the appropriate field office for each air contaminant source in this Permit to Install. In accordance with OAC Rule 3745-35-02, the application shall be filed no later than thirty days after commencement of operation.

SOURCE OPERATION AFTER COMPLETION OF CONSTRUCTION

This facility is permitted to operate each source described by this permit to install for a period of up to one year from the date the source commenced operation. This permission to operate is granted only if the facility complies with all requirements contained in this permit and all applicable air pollution laws and regulations.

4

Facility Name: **Quality Castings Company**

Application Number: **02-2565**

Date: **Draft PTI (Date will be entered upon final issuance)**

5

Facility Name: **Quality Castings Company**

Application Number: **02-2565**

Date: **Draft PTI (Date will be entered upon final issuance)**

<u>Ohio EPA Source Number</u>	<u>Source Identification Number</u>	<u>BAT Determination</u>	<u>Applicable Federal & OAC Rules</u>	<u>Permit Allowable Mass Emissions and/or Control/Usage Requirements</u>
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AIR EMISSION SUMMARY

The air contaminant emissions units listed below comprise the Permit to Install for **Quality Castings Company** located in **Wayne** County. The emissions units listed below shall not exceed the emission limits/control requirements contained in the table. This condition in no way limits the applicability of any other state or federal regulations. Additionally, this condition does not limit the applicability of additional special terms and conditions of this permit.

F025

P902

Ohio
EPA
Source
Number

Source
Identification
Description

F024

New Line
Mold Making

F025 cont'd

P039
(Mod)

P039
(Mod)
cont'd

Facility Name: **Quality Castings Company**

Application Number: **02-2565**

Date: **Draft PTI (Date will be entered upon final issuance)**

<u>Ohio EPA Source Number</u>	<u>Source Identification Number</u>	<u>BAT Determination</u>	<u>Applicable Federal & OAC Rules</u>	<u>Permit Allowable Mass Emissions and/or Control/Usage Requirements</u>
New line pouring & cooling w/in-mold inoculation		to 90 TPH	BAT <u>Determination</u> Compliance with the terms and conditions of the permit. Use of non-photo-chemically reactive material; production limitations; Compliance with Air Toxics Policy	ductile iron; OC: 1.4 lbs/hr, 0.57 TPY, CO: 40 lbs/hr, 16.4 TPY; production limitations Use of a fabric filter baghouse; production limitation
New line castings punchout	Modification to existing back floor sand reclaim system and muller to increase hourly throughput from 65 TPH		PM/PM ₁₀ : 9.1 lbs/hr 2.5 tons/yr; Use of in-mold inoculation process for	

Facility Name: **Quality Castings Company**

Application Number: **02-2565**

Date: **Draft PTI (Date will be entered upon final issuance)**

<u>Ohio EPA Source Number</u>	<u>Source Identification Number</u>	<u>BAT Determination</u>	<u>Applicable Federal & OAC Rules</u>	<u>Permit Allowable Mass Emissions and/or Control/Usage Requirements</u>
			3745-17-07 (B)	
				3745-17-07 (A)
	Applicable Federal & OAC Rules	3745-17-08	3745-17-11	
	3745-31-05	3745-17-07		
		3745-31-05	3745-31-05	
Use of a fabric filter baghouse; production limitation,	3745-17-08			
	3745-17-07 (B)			
	3745-21-07 (G)			
	3745-31-05		3745-17-11	
		3745-17-07 (A)		
			3745-17-08	
		3745-17-08		
			3745-17-07 (B)	

Facility Name: **Quality Castings Company**

Application Number: **02-2565**

Date: **Draft PTI (Date will be entered upon final issuance)**

<u>Ohio EPA Source Number</u>	<u>Source Identification Number</u>	<u>BAT Determination</u>	<u>Applicable Federal & OAC Rules</u>	<u>Permit Allowable Mass Emissions and/or Control/Usage Requirements</u>
Permit Allowable Mass Emissions and/or Control/Usage Requirements	08(A) (1) Exempt per OAC 3745-17-07 (B) (11) (d) Exempt per OAC rule 3745-21-07 (G) (9) PM/PM ₁₀ : 9.1 lbs/hr, 2.5 Tons/yr; visible emissions not to exceed 5% opacity as a 6 minute average. OC: 1.4 lbs/hr, 0.57 Tons/yr; CO: 40 lbs/hr, 16.4 TPY Exempt per OAC 3745-17-08 (A) (1) Exempt per OAC 3745-17-07 (B) (11) (d) PM/PM ₁₀ : 0.01 gr/dscf of	exhaust gases from fabric filter, 1.29 lbs/hr, and 2.6 tons/yr, fugitive emissions not to exceed 0.39 TPY, visible emissions limited to 5% opacity as a six minute average. OC: 12 lbs/hr, 4.92 TPY Less stringent than limits established by OAC 3745-31-05 Exempt, per 3745-17-08 (A) (1) Exempt, per 3745-17-07 (B) (11) (d) Less stringent than PM lbs/hr limit established through OAC rule 3745-31-05 PM/PM ₁₀ : 0.01 gr/dscf of exhaust gases from fabric filter, 3.49 lbs/hr, 6.99 TPY; fugitive emissions not to exceed 6.48 TPY (PM) and 0.97 TPY (PM ₁₀), visible	emission limited to 5% opacity as a 6 minute average. Less stringent than limit from 3745-31-05 Exempt per 3745-17-08 (A) (1) Exempt per 3745-17-07 (B) (11) (d) Less stringent than limit established by BAT	

Facility Name: **Quality Castings Company**

Application Number: **02-2565**

Date: **Draft PTI (Date will be entered upon final issuance)**

SUMMARY

TOTAL PERMIT TO INSTALL ALLOWABLE EMISSIONS

<u>Pollutant</u>	<u>Tons/Year</u>
PM	19 (5.5 TPY increase)
PM ₁₀	13.49 (5.5 TPY increase)
OC	16.0
CO	16.4

PERFORMANCE TEST REQUIREMENTS

The permittee shall conduct, or have conducted, performance testing on the air contaminant source(s) in accordance with procedures approved by the Agency. Two copies of the written report describing the test procedures followed and the results of such tests shall be submitted and signed by the person responsible for the test. The Director, or an Ohio EPA representative, shall be allowed to witness the test, examine testing equipment, and require the acquisition or submission of data and information necessary to assure that the source operation and testing procedures provide a valid characterization of the emissions from the source and/or the performance of the control equipment.

- A. A completed Intent to Test form shall be submitted to the appropriate Ohio EPA District Office or Local Air Pollution

Facility Name: **Quality Castings Company**

Application Number: **02-2565**

Date: **Draft PTI (Date will be entered upon final issuance)**

Control Agency where the original permit application was filed. This notice shall be made 30 days in advance and shall specify the source operating parameters, the proposed test procedures, and the time, date, place and person(s) conducting such tests.

- B. Two copies of the test results shall be submitted within 30 days after the completion of the performance test.
- C. Tests shall be performed for the following source(s) and pollutant(s):

Source

Pollutant(s)

P034, P902

PM

WASTE DISPOSAL

The owner/operator shall comply with any applicable state and federal requirements governing the storage, treatment, transport and disposal of any waste material generated by the operation of the sources.

MAINTENANCE OF EQUIPMENT

This source and its associated air pollution control system(s) shall be maintained regularly in accordance with good engineering practices and the recommendations of the respective manufacturers in order to minimize air contaminant emissions.

MALFUNCTION/ABATEMENT

In accordance with OAC RULE 3745-15-06, any malfunction of the source(s) or associated air pollution control system(s) shall be reported immediately to the **Ohio EPA, Northeast District Office, 2110 E. Aurora Road, Twinsburg, Ohio 44087.**

Except as provided by OAC Rule 3745-15-06(A)(3), scheduled maintenance of air pollution control equipment that requires the shutdown or bypassing of air pollution control system(s) must be accompanied by the shutdown of the associated air pollution sources.

AIR POLLUTION NUISANCES PROHIBITED

The air contaminant source(s) identified in this permit may not cause a public nuisance in violation of OAC Rule 3745-15-07.

Facility Name: **Quality Castings Company**

Application Number: **02-2565**

Date: **Draft PTI (Date will be entered upon final issuance)**

NINETY DAY OPERATING PERIOD

The facility will be permitted to operate during a 90-day period in accordance with OAC Rule 3745-35-02(C)(4)(b). The purpose of this period of operation is to fulfill the performance tests conditions used in the determination of compliance with the provisions of this Permit to Install or other applicable Ohio EPA rules.

CONSTRUCTION COMPLIANCE CERTIFICATION

The applicant shall provide Ohio EPA with a written certification (see enclosed form) that the facility has been constructed in accordance with the Permit to Install application and the terms and conditions of the Permit to Install. The certification shall be provided to Ohio EPA upon completion of construction but prior to startup of the source.

ADDITIONAL SPECIAL TERMS AND CONDITIONS

1. The equipment covered by this permit to install (PTI 02-12565) consists of new mold making equipment (F024), a new pouring and cooling line (F025), a new punchout machine (P039) and a modification to the back floor sand reclaim system (P902) to increase hourly sand throughput from 65 tons per hour to 90 tons per hour. P902 will now also include the existing east end 100B muller (formerly identified as P023).
2. The sand reclaim system (emissions unit P902) will be used to process used sand from existing emissions units F016 (Hunter line) and F018 (Osborn 722 line) and the new line (emissions units (F025 and P039) via the existing east end shakeout (emissions unit P017).
3. Particulate emissions from all processing equipment and material handling equipment associated with the back floor sand reclaim system (P902) and the punchout machine (P039) shall be controlled by a fabric filter baghouse. This baghouse is also used to control particulate matter emissions from the shakeout table which is part of existing emissions unit P017.

A. Allowable Emission Limitation(s)

Facility Name: **Quality Castings Company**

Application Number: **02-2565**

Date: **Draft PTI (Date will be entered upon final issuance)**

1. The emission of PM/PM₁₀ from the fabric filter's exhaust stack controlling emissions units P039 and P902 shall not exceed 0.01 grain per dry standard cubic foot of exhaust gases.
2. The stack emissions of PM/PM₁₀ from emissions unit P902 shall not exceed 3.49 pounds per hour. This is based on a grain loading limit of 0.01 gr/dscf and the anticipated exhaust gas flow rate from P902 of 40,750 SCFM.
3. The stack emissions of PM/PM₁₀ from emissions unit P039 shall not exceed 1.29 pounds per hour. This is based on a grain loading limit of 0.01 gr/dscf and the anticipated exhaust gas flow rate from P039 of 15,000 SCFM.
4. The emission of fugitive PM into the ambient air from emissions unit P902 shall not exceed 6.48 tons per year. The emission of fugitive PM₁₀ into the ambient air from emissions unit P902 shall not exceed 0.97 tons per year.

These emission limits are based on AP-42 emission factors and an estimate of the capture efficiency of the control system's hoods and enclosures.

5. The opacity of fugitive particulate matter from the building that encloses emissions units F024, F025, P039 opacity of Stack Particulate Matter also and P902 opacity of Stack Particulate Matter also shall not exceed 5% on a six minute average.

B. Operational Restrictions

1. The maximum annual production rate for the new moldmaking line, the new pouring line and the punchout machine (emissions units F024, F025, and P039) shall not exceed 8,200 tons of metal, based upon a rolling, 12-month summation of the production rates.

To ensure enforceability during the first 12 calendar

Facility Name: **Quality Castings Company**

Application Number: **02-2565**

Date: **Draft PTI (Date will be entered upon final issuance)**

months of operation following the issuance of this permit, the permittee shall not exceed the production levels specified in the following table:

<u>Month</u>	<u>Maximum Allowable Cumulative Production</u> (Tons iron produced)
1	683
1-2	1366
1-3	2049
1-4	2732
1-5	3415
1-6	4098
1-7	4781
1-8	5464
1-9	6147
1-10	6830
1-11	7513
1-12	8200

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual production rate limitation shall be based upon a rolling, 12-month summation of the production rates.

2. The maximum annual production rate for the back floor sand reclaim system (P902) shall not exceed 360,000 tons of sand, based upon a rolling, 12-month summation of the production rates.
3. The maximum annual operating hours for emissions unit P902 shall not exceed 4000, based upon a rolling, 12-month summation of the operating hours.

To ensure enforceability during the first 12 calendar months of operation following the issuance of this permit, the permittee shall not exceed the operating hours levels specified in the following table:

<u>Month(s)</u>	<u>Maximum Allowable Cumulative Operating Hours</u>
1	333
1-2	666

Facility Name: **Quality Castings Company**

Application Number: **02-2565**

Date: **Draft PTI (Date will be entered upon final issuance)**

1-3	1000
1-4	1333
1-5	1666
1-6	2000
1-7	2333
1-8	2666
1-9	3000
1-10	3333
1-11	3666
1-12	4000

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual operating hours limitation shall be based upon a rolling, 12-month summation of the operating hours.

4. Notwithstanding the operational limitations in paragraph 3, if the permittee can demonstrate that, based on the results of emissions testing on emissions unit P902, the

annual PM emission limitations of this PTI will not be exceeded, the permittee can apply in writing to the Ohio EPA to drop the annual operating hours restriction on this emissions unit.

5. The use of photochemically reactive materials, as defined in OAC rule 3745-21-01(C)(5), in emissions units F024 (new line mold making) is prohibited. Prior to employing any photochemically reactive materials, the permittee shall provide written notification to, and obtain approval from, the Ohio EPA field office. Such notification shall include information sufficient to determine that the emissions associated with the proposed change in materials will comply with the emission limits and/or control requirements as defined in OAC 3745-21-07(G)(2). This notification, at a minimum, shall include the company identification of the new material to be employed, the solvent composition of the material, and the maximum amount to be used, in pounds per hour.
6. The production of ductile iron in emissions unit F025

Facility Name: **Quality Castings Company**

Application Number: **02-2565**

Date: **Draft PTI (Date will be entered upon final issuance)**

shall be done by means of the "in-mold" method only. This condition does not prohibit the pouring of ductile iron made by means of the ladle treatment method.

7. The pressure drop across the baghouse shall be maintained within the range of 3 to 6 inches of water while the emissions units are in operation.
8. For emissions unit P902, all material handling equipment, except the final belt conveyor, shall be covered and shall be exhausted to the baghouse. This shall include: the belt conveyor from the existing shakeout, the transfer point at the cross magnetic belt conveyor, the belt conveyors to the sand cooler, and the vibrating feed conveyor. The final belt conveyor to the existing sand muller shall be enclosed at the head and tail and shall be exhausted to the baghouse.
9. All sand processing equipment, shall be fully enclosed and shall be exhausted to the baghouse. This shall include: the rotary screen, the sand cooler and cyclone, the return sand storage silo and the muller.
10. Quality Castings shall maintain all hood and enclosures in good operating condition. Additional capture hooding or enclosures shall be installed if required by the Ohio EPA.

C. Monitoring and Recordkeeping Requirements

1. The permittee shall maintain monthly records of the following information:
 - a. the metal production rate for each month; and,
 - b. beginning after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month summation of the metal production rates.

Also, during the first 12 calendar months of operation following the issuance of this permit, the permittee

Facility Name: **Quality Castings Company**

Application Number: **02-2565**

Date: **Draft PTI (Date will be entered upon final issuance)**

shall record the cumulative metal production rate for each calendar month.

2. The permittee shall maintain monthly records of the sand throughput in emissions unit P902 :
 - a. the sand throughput for each month; and,
 - b. the rolling, 12-month summation of the sand throughput.
3. The permittee shall maintain monthly records of the following information:
 - a. the operating hours for each month for emissions unit P902; and,
 - b. beginning after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month summation of the operating hours.

Also, during the first 12 calendar months of operation following the issuance of this permit, the permittee shall record the cumulative operating hours for each calendar month.

4. The permittee shall properly operate, and maintain equipment to monitor the pressure drop across the fabric filter baghouse while the emissions units are in operation. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s). The permittee shall record the pressure drop across the baghouse on a daily basis.
5. The permittee shall maintain on file information on the alloys used in the "in-mold" ductile iron operation. This information shall include the percent by weight of magnesium in the alloy, the alloy to metal ratio and air contaminant emissions. Prior to modifying the "in-mold" process whereby actual particulate matter emissions increase, in accordance with OAC Rule

Facility Name: **Quality Castings Company**

Application Number: **02-2565**

Date: **Draft PTI (Date will be entered upon final issuance)**

3745-31, Quality Castings shall apply for and obtain an Ohio EPA permit to install.

6. Each record of any monitoring data, testing data, and support information required pursuant to this permit shall be retained for a period of five years from the date the record was created. Support information shall include, but not be limited to, all calibration and maintenance records and all original strip-chart recordings, if a strip-chart recorder is employed, for continuous monitoring instrumentation, and copies of all reports required by the permit. Such records may be maintained in computerized form.

D. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports that identify all exceedances of the rolling, 12-month metal production rate limitation and, for the first 12 calendar months of operation following the issuance of this permit, all exceedances of the maximum allowable cumulative production levels.
2. The permittee shall submit deviation (excursion) reports that identify all exceedances of the rolling, 12-month sand production rate limitation.
3. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling, 12-month operating hours limitation for emissions unit P039 and, for the first 12 calendar months of operation following the issuance of this permit, all exceedances of the maximum allowable cumulative operating hours levels.
4. The permittee shall submit pressure drop deviation (excursion) reports that identify that all periods of time during which the pressure drop across the baghouse did not comply with the allowable range specified above.
5. The permittee shall submitted required reports in the following manner:

Facility Name: **Quality Castings Company**

Application Number: **02-2565**

Date: **Draft PTI (Date will be entered upon final issuance)**

- a. reports of any required monitoring and/or recordkeeping information shall be submitted to the Ohio EPA, Northeast District Office; and,
 - b. except as otherwise may be provided in the terms and conditions for a specific emissions unit, quarterly written reports of (a) any deviations (excursions) from emission limitations, operational restrictions, and control device operating parameter limitations that have been detected by the testing, monitoring, and recordkeeping requirements specified in this permit, (b) the probable cause of such deviations, and (c) any corrective actions or preventive measures which have been or will be taken, shall be submitted to the Ohio EPA, Northeast District Office. If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted quarterly, i.e., by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. (These quarterly reports shall exclude deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06.)
6. The permittee shall also submit annual reports which specify the total PM, PM10, OC and CO emissions from the emissions units contained within this permit for the previous calendar year. These reports shall be submitted by January 31 of each year.

E. Testing/Compliance Method Requirements

1. F024 new line mold making
 - a. Emission Limitation: 0.12 lbs PM per hour

Applicable Compliance Method: To determine compliance with particulate matter limit, the following equation shall be used:

$E = \text{maximum iron produced (tons per hour)} \times 0.04$

Facility Name: **Quality Castings Company**

Application Number: **02-2565**

Date: **Draft PTI (Date will be entered upon final issuance)**

$$(\text{lbs/ton}) \times (1-0.7)$$

where:

E = particulate matter emissions (lbs/hr)

0.04 = emission factor in lbs particulate matter per ton iron produced (from Ohio EPA's document "Reasonably Available Control Measures for Fugitive Dust Sources", Table 2.7-1 for mold making)

0.7 = estimated capture efficiency for building enclosure

Maximum iron production can be determined by maximum sand throughput multiplied by ratio of iron to sand.

b. Emission Limitation: 0.05 ton PM per year

Applicable Compliance Method: To determine compliance with the particulate matter limit, the following equation shall be used:

$$E = \text{iron produced (tons per year)} \times 0.04 \text{ (lbs/ton)} \\ \times (1-0.7) \times 1/2000 \text{ (ton/lbs)}$$

where:

E = particulate matter emissions (tons/year)

0.04 = emission factor in lbs particulate matter per ton iron produced (from Ohio EPA's document "Reasonably Available Control Measures for Fugitive Dust Sources", Table 2.7-1 for mold making) 0.7 = estimated capture efficiency for building enclosure

Annual iron production can be determined by annual sand throughput multiplied by ratio of iron to sand.

c. Emission Limitation: 25.5 lbs OC per hour

Applicable Compliance Method: To determine compliance with the OC limit, the following equation shall be used:

Facility Name: **Quality Castings Company**

Application Number: **02-2565**

Date: **Draft PTI (Date will be entered upon final issuance)**

$$E = \text{GAL} \times \text{VOC} / \text{hr}$$

where:

E = average organic compound emissions (lbs/hr)

GAL = number of gallons of parting spray used each day

VOC = lbs VOC per gallon of parting spray

hr = hours of operation each day

- d. Emission Limitation: 10.5 tons OC per year

Applicable Compliance Method: To determine compliance with the OC limit, the following equation shall be used:

$$E = \text{GAL} \times \text{VOC} \times 1/2000 \text{ (ton/pounds)}$$

where:

E = organic compound emissions (tons/yr)

GAL = number of gallons of parting spray used each year

VOC = lbs VOC per gallon of parting spray

- e. Emission Limitation: Visible emissions not to exceed 5% opacity on a six minute average

Applicable Compliance Method: Compliance shall be determined by using the procedures from U.S. EPA reference method 9.

2. F025 new line pouring and cooling

- a. Emission Limitation: 9.1 lbs PM per hour

Applicable Compliance Method: To determine compliance with particulate matter limit, the following equation shall be used:

Facility Name: **Quality Castings Company**

Application Number: **02-2565**

Date: **Draft PTI (Date will be entered upon final issuance)**

$$E = [\text{maximum iron poured (tons per hour)} \times 0.51 \text{ (lbs/tn)}] + [\text{maximum iron inoculated (tons per hour)} \times 4.0 \text{ (lbs/tn)} \times (1 - 0.9)]$$

where:

E = particulate matter emissions (lbs/hr)
 0.51 = emission factor in lbs particulate matter per ton iron poured (from emissions testing done at Quality Castings facility on January 18, 1996 on emissions unit P036)
 4.0 = emission factor in lbs PM per ton iron produced from AP-42, Table 12.10-7
 0.9 = control efficiency for "in-mold" inoculation

b. Emission Limitation: 2.5 tons PM per year

Applicable Compliance Method: To determine compliance with the particulate matter limit, the following equation shall be used:

$$E = [\text{iron poured (tons per year)} \times 0.51 \text{ (lbs/ton)} \times 1/2000 \text{ (ton/lbs)}] + [\text{iron inoculated (tons per year)} \times 4.0 \text{ (lbs/ton)} \times (1 - 0.9) \times 1/2000 \text{ (ton/lbs)}]$$

where:

E = particulate matter emissions (tons/year)
 0.51 = emission factor in lbs particulate matter per ton iron poured (from emissions testing done at Quality Castings facility on January 18, 1996 on emissions unit P036)
 4.0 = emission factor in lbs PM per ton iron produced from AP-42, Table 12.10-7
 0.9 = control efficiency for "in-mold" inoculation

c. Emission Limitation: 40 lbs CO per hour

Applicable Compliance Method: To determine compliance with the carbon monoxide limit, the following equation shall be used:

Facility Name: **Quality Castings Company**

Application Number: **02-2565**

Date: **Draft PTI (Date will be entered upon final issuance)**

$E = \text{maximum iron poured (tons per hour)} \times 4.0$
(lbs/tn)

where:

$E = \text{carbon monoxide emissions (lbs/hr)}$
4.0 = emission factor in lbs carbon monoxide per ton iron poured (from technical data provided in PTI application 02-12565, based on testing done at GM Saginaw facility)

d. Emission Limitation: 16.4 tons CO per year

Applicable Compliance Method: To determine compliance with the carbon monoxide limit, the following equation shall be used:

$E = \text{iron poured (tons per year)} \times 4.0 \text{ (lbs/ton)} \times$
 $1/2000 \text{ (ton/lbs)}$

where:

$E = \text{carbon monoxide emissions (tons/yr)}$
4.0 = emission factor in lbs carbon monoxide per ton iron poured (from technical data provided in PTI application 02-12565, based on testing done at GM Saginaw facility)

e. Emission Limitation: 1.4 lbs OC per hour

Applicable Compliance Method: To determine compliance with the organic compound limit, the following equation shall be used:

$E = \text{maximum iron poured (tons per hour)} \times 0.14$
(lb/ton)

where:

$E = \text{organic compound emissions (lbs/hr)}$
0.14 = emission factor in lbs organic compound per

Facility Name: **Quality Castings Company**

Application Number: **02-2565**

Date: **Draft PTI (Date will be entered upon final issuance)**

ton iron poured (from SCC emission factors
30400320)

- f. Emission Limitation: 0.57 tons OC per year

Applicable Compliance Method: To determine compliance with the organic compound limit, the following equation shall be used:

$$E = \text{iron poured (tons per year)} \times 0.14 \text{ (lb/ton)} \times \frac{1}{2000} \text{ (ton/lbs)}$$

where:

E = organic compound emissions (tns/yr)
0.14 = emission factor in lbs organic compound per
ton iron poured (from SCC emission factors
30400320)

- g. Emission Limitation: Visible emissions not to exceed 5% opacity on a six minute average

Applicable Compliance Method: Compliance shall be determined by using the procedures from U.S. EPA reference method 9.

3. New Line Castings Punchout

- a. Emission Limitations: 1.29 lbs PM per hour, 0.01 gr PM/dscf

Applicable Compliance Method: To determine compliance with particulate matter limits, U.S. EPA reference methods 1-5 shall be used.

- b. Emission Limitations: 2.6 tons PM per year (stack emissions)

Applicable Compliance Method: To determine

Facility Name: **Quality Castings Company**

Application Number: **02-2565**

Date: **Draft PTI (Date will be entered upon final issuance)**

compliance with the particulate matter limit, use the results of emissions testing and the record of annual operating hours as required in the Recordkeeping section of this permit.

- c. Emission Limitations: 0.39 ton PM per year (fugitive emissions)

Applicable Compliance Method: To determine compliance with the particulate matter limit, the following equation shall be used:

$$E = [\text{iron processed (tons per year)} \times 3.2 \text{ (lbs/ton)} \times 1/2000 \text{ (ton/lbs)}] \times (1 - 0.9) \times (1 - 0.7)$$

where:

E = particulate matter emissions (tons/year)

3.2 = emission factor in lbs particulate matter per ton iron processed (from AP-42, Table 12.10-7)

0.9 = capture efficiency for particulate matter

0.7 = estimated capture efficiency for building enclosure

- d. Emission Limitation: 12 lbs OC per hour

Applicable Compliance Method: To determine compliance with the organic compound limit, the following equation shall be used:

$$E = \text{maximum iron processed (tons per hour)} \times 1.2 \text{ (lbs/tn)}$$

where:

E = organic compound emissions (lbs/hr)

1.2 = emission factor in lbs organic compound per ton iron processed (from SCC emission factors 30400332)

- e. Emission Limitation: 4.92 tons OC per year

Facility Name: **Quality Castings Company**

Application Number: **02-2565**

Date: **Draft PTI (Date will be entered upon final issuance)**

Applicable Compliance Method: To determine compliance with the organic compound limit, the following equation shall be used:

$$E = \text{iron processed (tons per year)} \times 1.2 \text{ (lbs/ton)} \\ \times 1/2000 \text{ (ton/lbs)}$$

where:

E = organic compound emissions (tons/yr)
 1.2 = emission factor in lbs organic compound per ton iron poured (from SCC emission factors 30400332)

- f. Emission Limitation: Visible emissions not to exceed 5% opacity on a six minute average

Applicable Compliance Method: Compliance shall be determined by using the procedures from U.S. EPA reference method 9.

4. Back Floor Sand Reclaim System

- a. Emission Limitations: 3.49 lbs PM per hour, 0.01 gr PM/dscf

Applicable Compliance Method: To determine compliance with particulate matter limits, U.S. EPA reference methods 1-5 shall be used.

- b. Emission Limitations: 6.99 tons PM per year (stack emissions)

Applicable Compliance Method: To determine compliance with the particulate matter limit, use the results of emissions testing and the record of annual operating hours as required in the Recordkeeping section of this permit.

- c. Emission Limitations: 6.48 tons PM per year (fugitive emissions)

Facility Name: **Quality Castings Company**

Application Number: **02-2565**

Date: **Draft PTI (Date will be entered upon final issuance)**

Applicable Compliance Method: To determine compliance with the particulate matter limit, the following equation shall be used:

$$E = [\text{sand processed (tons per year)} \times 3.6 \text{ (lbs/ton)} \times 1/2000 \text{ (ton/lbs)}] \times (1 - 0.99)$$

where:

E = particulate matter emissions (tons/year)

3.6 = emission factor in lbs particulate matter per ton sand processed (from AP-42, Table 12.10-7)

0.99 = capture efficiency for particulate matter

- d. Emission Limitation: Visible emissions not to exceed 5% opacity on a six minute average

Applicable Compliance Method: Compliance shall be determined by using the procedures from U.S. EPA reference method 9.

5. The permittee shall conduct, or have conducted, emission testing within 90 days of start-up for emissions unit P902 and P039 in accordance with the following requirements:
- a. the emission testing shall be conducted to demonstrate compliance with the allowable emission rate (gr/dscf) for particulate matter from the fabric filter baghouse;
 - b. during the emission testing, the gas flow rate from the emissions units into the fabric filter baghouse shall also be measured;
 - c. compliance with the mass emission limit (lbs/hr) for particulate matter shall be determined by multiplying the gas flow rate from emissions unit P902 and P039 (dscf) by the measured grain loading at the baghouse's exhaust (gr/dscf);

Facility Name: **Quality Castings Company**

Application Number: **02-2565**

Date: **Draft PTI (Date will be entered upon final issuance)**

- d. the following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s): Methods 1-5 of 40 CFR Part 60, Appendix A;
- e. the test(s) shall be conducted while the emissions units are operating at or near their maximum capacity, unless otherwise specified or approved by the Ohio EPA, Northeast District Office; and,
- f. not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA, Northeast District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA, Northeast District Office's refusal to accept the results of the emission test(s).

Personnel from the Ohio EPA, Northeast District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests (i.e. stack test contractor) and submitted to the Ohio EPA, Northeast District Office within 30 days following completion of the test(s).

Facility Name: **Quality Castings Company**

Application Number: **02-2565**

Date: **Draft PTI (Date will be entered upon final issuance)**

F. Miscellaneous Requirements

1. This PTI and its requirements shall replace PTI 02-11040, issued April 23, 1997 for emissions unit P902.
2. For emissions unit F024, this permit allows the use of the parting compound material specified by the permittee in the application for PTI number 02-12565. In conjunction with the best available technology requirements of OAC rule 3745-31-05, the OC emission limitation specified in this permit was established in accordance with the Ohio EPA's "Air Toxics Policy" and is based on both the parting compound material formulation data and the design parameters of the emissions unit's exhaust system, as specified in the application. Compliance with the Ohio EPA's "Air Toxics Policy" was demonstrated for each pollutant based on the SCREEN3 model and a comparison of the predicted 1 hour maximum ground-level concentration to the MAGLC. The following summarizes the results of the modeling for each pollutant:

Pollutant: ethylbenzene

TLV (ug/m3): 434,000

Maximum Hourly Emission Rate (lbs/hr): 25.5

Predicted 1 Hour Maximum Ground-Level Concentration at the Fenceline (ug/m3): 1721

Maximum Acceptable Ground-Level Concentration (MAGLC) (ug/m3): 10,357

Any of the following changes may be deemed a "modification" to the emissions unit and, as such, prior notification to and approval from the Ohio EPA, Northeast District Office are required, including the possible issuance of modifications to PTI number 02-12565 and the operating permit:

- a. any changes in the composition of the parting

Facility Name: **Quality Castings Company**

Application Number: **02-2565**

Date: **Draft PTI (Date will be entered upon final issuance)**

compound material, or the use of new parting compound materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value specified in the above table;

- b. any change to the emissions unit or its exhaust parameters (e.g., increased emission rate, reduction of exhaust gas flow rate, and decreased stack height) that would result in an exceedance of any MAGLC specified in the above table; and,
- c. any change to the emissions unit or its method of operation that would either require an increase in the emission limitation(s) established by this permit or would otherwise be considered a "modification" as defined in OAC rule 3745-31-01.