



State of Ohio Environmental Protection Agency

Street Address:

Lazarus Gov. Center  
122 S. Front Street  
Columbus, OH 43215

TELE: (614) 644-3020 FAX: (614) 644-2329

Mailing Address:

Lazarus Gov. Center  
P.O. Box 1049  
Columbus, OH 43216-1049

**RE: FINAL PERMIT TO INSTALL  
PORTAGE COUNTY  
Application No: 16-02275**

**CERTIFIED MAIL**

	TOXIC REVIEW
	PSD
Y	SYNTHETIC MINOR
	CEMS
RRR	MACT
	NSPS
	NESHAPS
	NETTING
	MAJOR NON-ATTAINMENT
	MODELING SUBMITTED
	GASOLINE DISPENSING FACILITY

**DATE: 7/29/2003**

Ravenna Aluminum Industries Inc  
Glenn Johnson  
5159 S Prospect St  
Rootstown, OH 44266

Enclosed please find an Ohio EPA Permit to Install which will allow you to install the described source(s) in a manner indicated in the permit. Because this permit contains several conditions and restrictions, I urge you to read it carefully.

The Ohio EPA is urging companies to investigate pollution prevention and energy conservation. Not only will this reduce pollution and energy consumption, but it can also save you money. If you would like to learn ways you can save money while protecting the environment, please contact our Office of Pollution Prevention at (614) 644-3469.

You are hereby notified that this action by the Director is final and may be appealed to the Ohio Environmental Review Appeals Commission pursuant to Chapter 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. It must be filed within thirty (30) days after the notice of the Directors action. A copy of the appeal must be served on the Director of the Ohio Environmental Protection Agency within three (3) days of filing with the Commission. An appeal may be filed with the Environmental Review Appeals Commission at the following address:

Environmental Review Appeals Commission  
309 South Fourth Street, Room 222  
Columbus, Ohio 43215

Sincerely,

Michael W. Ahern, Supervisor  
Field Operations and Permit Section  
Division of Air Pollution Control

cc: USEPA

ARAQMD



**Permit To Install  
Terms and Conditions**

**Issue Date: 7/29/2003  
Effective Date: 7/29/2003**

**FINAL PERMIT TO INSTALL 16-02275**

Application Number: 16-02275  
APS Premise Number: 1667060122  
Permit Fee: **\$4450**  
Name of Facility: Ravenna Aluminum Industries Inc  
Person to Contact: Glenn Johnson  
Address: 5159 S Prospect St  
Rootstown, OH 44266

Location of proposed air contaminant source(s) [emissions unit(s)]:  
**706 N Walnut St  
Ravenna, Ohio**

Description of proposed emissions unit(s):  
**Re-start of Aluminum Casting Processes - Replaces PTIs 16-00860 and 16-01173 Issued 10/2/91 and 12/23/92 and Modified 10/25/95 Respectively.**

The above named entity is hereby granted a Permit to Install for the above described emissions unit(s) pursuant to Chapter 3745-31 of the Ohio Administrative Code. Issuance of this permit does not constitute expressed or implied approval or agreement that, if constructed or modified in accordance with the plans included in the application, the above described emissions unit(s) of environmental pollutants will operate in compliance with applicable State and Federal laws and regulations, and does not constitute expressed or implied assurance that if constructed or modified in accordance with those plans and specifications, the above described emissions unit(s) of pollutants will be granted the necessary permits to operate (air) or NPDES permits as applicable.

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency

Director

## Part I - GENERAL TERMS AND CONDITIONS

### A. Permit to Install General Terms and Conditions

#### 1. Compliance Requirements

The emissions unit(s) identified in this Permit to Install shall remain in full compliance with all applicable State laws and regulations and the terms and conditions of this permit.

#### 2. Reporting Requirements

The permittee shall submit required reports in the following manner:

- a. Reports of any required monitoring and/or recordkeeping information shall be submitted to the appropriate Ohio EPA District Office or local air agency.
- 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 appropriate Ohio EPA District Office or local air agency. 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.)

#### 3. Records Retention Requirements

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 for continuous monitoring instrumentation, and copies of all reports required by this permit. Such records may be maintained in computerized form.

#### 4. Inspections and Information Requests

The Director of the Ohio EPA, or an authorized representative of the Director, may, subject to the safety requirements of the permittee and without undue delay, enter upon the premises of this source at any reasonable time for purposes of making inspections, conducting tests, examining records or reports pertaining to any emission of air contaminants, and determining compliance with any applicable State air pollution laws and regulations and the terms and conditions of this permit. The permittee shall furnish to the Director of the Ohio EPA, or an authorized representative of the Director, upon receipt of a written request and within a reasonable time, any information that may

be requested to determine whether cause exists for modifying, reopening or revoking this permit or to determine compliance with this permit. Upon verbal or written request, the permittee shall also furnish to the Director of the Ohio EPA, or an authorized representative of the Director, copies of records required to be kept by this permit.

**5. Scheduled Maintenance/Malfunction Reporting**

Any scheduled maintenance of air pollution control equipment shall be performed in accordance with paragraph (A) of OAC rule 3745-15-06. The malfunction of any emissions units or any associated air pollution control system(s) shall be reported to the appropriate Ohio EPA District Office or local air agency in accordance with paragraph (B) of OAC rule 3745-15-06. Except as provided in that rule, any scheduled maintenance or malfunction necessitating the shutdown or bypassing of any air pollution control system(s) shall be accompanied by the shutdown of the emissions unit(s) that is (are) served by such control system(s).

**6. Permit Transfers**

Any transferee of this permit shall assume the responsibilities of the prior permit holder. The appropriate Ohio EPA District Office or local air agency must be notified in writing of any transfer of this permit.

**7. Air Pollution Nuisance**

The air contaminants emitted by the emissions units covered by this permit shall not cause a public nuisance, in violation of OAC rule 3745-15-07.

**8. Termination of Permit to Install**

This Permit to Install shall terminate within eighteen months of the effective date of the Permit to Install if the owner or operator has not undertaken a continuing program of installation or modification or has not entered into a binding contractual obligation to undertake and complete within a reasonable time a continuing program of installation or modification. 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.

**9. Construction of New Sources(s)**

The proposed emissions unit(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 cannot meet the requirements of this permit or cannot meet applicable standards.

If the construction of the proposed emissions unit(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 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 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 the requirements of this permit or cannot meet applicable standards.

**10. 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.

**11. Applicability**

This Permit To Install is applicable only to the emissions unit(s) identified in the Permit To Install. Separate Permit To Install for the installation or modification of any other emissions unit(s) are required for any emissions unit for which a Permit To Install is required.

**12. 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.

**13. Source Operation and Operating Permit Requirements 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, regulations, and policies. Pursuant to OAC Chapter 3745-35, the permittee shall submit a complete operating permit application within ninety (90) days after commencing operation of the emissions unit(s) covered by this permit.

**14. 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.

**15. Fees**

The permittee shall pay fees to the Director of the Ohio EPA in accordance with ORC section 3745.11 and OAC Chapter 3745-78. The permittee shall pay all applicable Permit to Install fees within 30 days after the issuance of this Permit to Install.

## B. Permit to Install Summary of Allowable Emissions

The following information summarizes the total allowable emissions, by pollutant, based on the individual allowable emissions of each air contaminant source identified in this permit.

### SUMMARY (for informational purposes only) TOTAL PERMIT TO INSTALL ALLOWABLE EMISSIONS

<u>Pollutant</u>	<u>Tons Per Year</u>
Particulate Emissions	33.8
PM-10	33.8
Sulfur Dioxide	4.4
Nitrogen Oxides	10.5
Carbon Monoxide	10.1
Volatile Organic Compounds	87.3
Hydrogen Fluoride	1.4
Cumene	0.6
Phenol	1.5
Benzene	0.04
Formaldehyde	0.04

**PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. Applicable Emissions Limitations and/or Control Requirements**

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
<p>F002 - 8.0 MMBTU/hr natural gas fired aluminum melting furnace (2.0 ton/hr capacity) with rotating pouring and cooling turntable. Uncontrolled, emitted through a 125 foot stack, estimated capture efficiency 99%, remainder of emissions fugitive.</p>	<p>OAC rule 3745-31-05(A)(3)</p>	<p>Particulate emissions (PE) shall not exceed *1.29 pounds per hour and 4.6 tons per year.</p> <p>* All PE emissions are assumed to be less than ten microns (PM-10).</p> <p>Carbon monoxide (CO) shall not exceed 1.60 pounds per hour and 5.8 tons per year.</p> <p>Volatile organic compounds (VOC) shall not exceed 5.44 pounds per hour and 19.6 tons per year.</p> <p>Sulfur dioxides (SO<sub>2</sub>) shall not exceed 0.56 pound per your and 2.0 tons per year.</p> <p>Nitrogen oxides (NO<sub>x</sub>) shall not exceed 1.67 pounds per hour and 6.0 tons/yr.</p> <p>Hydrogen Fluoride (HF) shall not exceed 0.22 pound per hour 0.8 ton per year.</p> <p>Phenol shall not exceed 0.20 pound per hour and 0.7 tons per year.</p>

	Cumene shall not exceed 0.09 pound per hour and 0.3 tons per year.
OAC rule 3745-17-07(A)(1)	Visible particulate emissions of fugitive dust shall not exceed five percent opacity, as a three-minute average from any building opening or roof vent, except as specified by rule.  The requirements of this rule also include compliance with the requirements of OAC rule 3745-35-07(B).
OAC rule 3745-17-08	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
OAC rule 3745-17-11	See 2.a below.
OAC rule 3745-35-07(B)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
40 CFR Part 63, Subpart RRR	See B.3 thru 6 below.
	See 2.f below.

**2. Additional Terms and Conditions**

- 2.a** This facility is located in an appendix A area, therefore paragraph B of OAC rule 3745-17-08 does apply. The permittee shall employ control measures that are sufficient to minimize or eliminate visible emissions of fugitive dust.
- 2.b** The permittee shall minimize or eliminate visible particulate emissions of fugitive dust by employing best available control measures. These measures shall include, but not be limited to, the following:
  - i.** The installation and use of hoods, fans and other equipment to adequately enclose, contain, capture and vent the fugitive dust.

- ii. The collection efficiency is sufficient to minimize or eliminate visible particulate emissions of fugitive dust at the point(s) of capture to the extent possible with good engineering design.

Nothing in this paragraph shall prohibit the permittee from employing other control measures to ensure compliance, as described below. Ohio EPA may require additional control measures at any or all operations described above if deemed necessary based on observed visible emissions.

- 2.c** For each operation that is not adequately enclosed, the above-identified control measure(s) shall be implemented at all times during operation. If the permittee determines, as a result of the inspection conducted pursuant to the monitoring section of this permit, that additional control measure(s) is (are) necessary to ensure compliance with the above-mentioned applicable requirements, such additional control measures shall be implemented immediately. Any required implementation of the additional control measure(s) shall continue during operation until further observation confirms that use of these additional control measure(s) is unnecessary.
- 2.d** Specific additional control measures shall be determined by the permittee. Such additional control measures may include increased water application, use of chemical dust suppressant, or shut-down of operations. The use of additional control measures shall, at all times, comply with all air, surface water, ground water, solid waste, and hazardous waste laws and regulations.
- 2.e** Implementation of the above-mentioned (A.2.b.) control measure(s) in accordance with the terms and conditions of this permit is appropriate and sufficient to satisfy the requirements of OAC rules 3745-17-08 and 3745-31-05(A)(3).
- 2.f** The equipment covered by this PTI is included in the Secondary Aluminum Production MACT, however paragraph 63.1500 of 40 CFR part 63, Subpart RRR states no facility shall be subject to this section if it melts only clean charge, internal scrap or customer returns as defined in paragraph 63.1503 of 40 CFR part 63, Subpart RRR.
- 2.g** The hourly allowable aluminum poured and emission limitations outlined are based upon the emissions unit's Potential to Emit (PTE). Therefore, no records are required to demonstrate compliance with these limitations.

## **B. Operational Restrictions**

1. The permittee shall use only clean charge, internal scrap or customer returns as defined in paragraph 63.1503 of 40 CFR part 63, Subpart RRR.
2. The permittee shall not pour more than 4,000 pounds of aluminum per hour in this emissions unit.

3. The permittee shall not operate this emissions unit more than 7,200 hours per year, based upon a rolling, 12-month summation of the operating hours.
4. The permittee shall not charged more than 14,400 tons per year of aluminum, based upon a rolling, 12-month summation of the aluminum charged.
5. To ensure enforceability during the first 12 calendar months of operation following the issuance of this permit, the permittee shall not exceed the cumulative operating and aluminum charged rates specified in the following table:

<u>Month(s)</u>	<u>Maximum Allowable Cumulative Operating Hours</u>	<u>Maximum Allowable Cumulative Aluminum Charged (Tons)</u>
1	1200	2400
1-2	2400	4800
1-3	3000	6000
1-4	3600	7200
1-5	4200	8400
1-6	4800	9600
1-7	5400	10,800
1-8	6000	12,000
1-9	6600	13,200
1-10	7200	14,400
1-11	7200	14,400
1-12	7200	14,400

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 monthly operating hours.

Also, after the first 12 calendar months of operation following the issuance of this permit, compliance with the annual aluminum charged limitation shall be based upon a rolling, 12-month summation of the monthly aluminum charged.

6. The permittee has agreed to accept limitations on annual operating hours to keep the emissions unit annual facility-wide VOC emissions below 99 tons per year, based upon a rolling, 12-month summation of the monthly emissions.

**C. Monitoring and/or Record keeping Requirements**

1. The permittee shall perform daily checks, when the emissions unit is in operation and when the weather conditions allow, for any visible fugitive particulate emissions escaping from the building containing this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:
  - a. The color of the emissions.
  - b. Whether the emissions are representative of normal operations.
  - c. If the emissions are not representative of normal operations, the cause of the abnormal emissions.
  - d. The total duration of any abnormal visible emission incident.
  - e. Any corrective actions taken to eliminate the abnormal visible emissions.
  
2. If any visible emissions in excess of 5 percent opacity are observed, corrective actions shall be employed to eliminate any visible emissions in excess of 5 percent opacity, these actions shall also be noted in the operations log.
  
3. The permittee shall maintain monthly records of the following information:
  - a. The operating hours for each month.
  - b. The aluminum charged rate for each month.
  - c. The rolling, 12-month summation of the VOC emissions.
  - d. Beginning after the first 12 calendar months of operation following issuance of this permit, the rolling, 12-month summation of the operating hours.
  - e. Beginning after the first 12 calendar months of operation following issuance of this permit, the rolling, 12-month summation of the aluminum charged.

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

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

**D. Reporting Requirements**

1. The permittee shall submit deviation (excursion) reports which identify:

- a. All days during which any abnormal visible fugitive particulate emissions were observed escaping from the building containing this emissions unit.
  - b. Visible emissions in excess of 5 percent opacity.
  - c. Describe any corrective actions taken to eliminate the abnormal visible fugitive particulate emissions, or visible emissions greater than 5 percent opacity.
2. If no visible emissions exceeded 5 percent opacity, and no unusual visible emissions were observed during the reporting period, the permittee shall submit a report which states no visible emissions exceeding 5 percent opacity, and no unusual visible emissions were observed during the reporting period.
  3. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling, 12 month operating hours restriction and, for the first 12 calendar months of operation following issuance of this permit, all exceedances of the maximum allowable cumulative operating hours, based on the terms in II.B.3 and 5.
  4. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling, 12 month aluminum charged limitation and, for the first 12 calendar months of operation following issuance of this permit, all exceedances of the maximum allowable cumulative aluminum charged, based on the terms in II.B.4 and 5.
  5. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling, 12 month emission limitation for VOC.
  6. The permittee shall also submit annual reports which specify the total VOC emissions from this emissions unit for the previous calendar year. These reports shall be submitted by January 31 of each year.
  7. These deviation (excursion) reports shall be submitted in accordance with the requirements specified in General Term and Condition A.2 of this permit.

## **E. Testing Requirements**

1. Compliance with the emission limitations in sections A.1 and A.2 of these terms and conditions shall be determined in accordance with the following methods:
  - a. Emission Limitation:  
  
1.29 pound per hour of PE  
4.6 tons per year of PE

Applicable Compliance Method:

Multiply the particulate emission factors of 0.37 when melting and 0.27 when pouring pound of particulate emissions per ton of metal melted by the maximum hourly rate of metal melted. The particulate emission factor for melting was developed from the 2001 stack test conducted at FSI's Rootstown facility; the particulate emission factor for pouring was developed from the 1998 stack test conducted at this facility.

Compliance with the tons per year particulate emission limitation shall be demonstrated by multiplying the average (three one-hour stack test runs) hourly emission rate obtained from the 40 Code of Federal Regulation (CFR), Part 60, Appendix A, Methods 1-5 test results by the number of hours the emissions unit operated during the year.

b. Emission Limitation:

0.56 pound per hour of SO<sub>2</sub>  
2.0 tons per year of SO<sub>2</sub>

Applicable Compliance Method:

Multiply the sulfur dioxide emission factor of 0.28 pound of sulfur oxides per ton of metal melted by the maximum hourly rate of metal poured. This SO<sub>x</sub> emission factors was based on air testing conducted in 1998.

Compliance with the tons per year particulate emission limitation shall be demonstrated by multiplying the average hourly emission rate obtained from the 40 CFR, Part 60, Appendix A, Methods 1-4 and 6 test results by the number of hours the emissions unit operated during the year.

c. Emission Limitation:

1.67 pounds per hour of NO<sub>x</sub>  
6.0 tons per year of NO<sub>x</sub>

Applicable Compliance Method:

Multiply the nitrogen oxide emission factor of 0.84 pound of nitrogen oxides per ton of metal melted by the maximum hourly rate of metal melted. This NO<sub>x</sub> emission factors was based on air testing at similar sources (FSI's Rootstown facility) conducted in 2001.

Compliance with the tons per year NO<sub>x</sub> emission limitation shall be demonstrated by multiplying the average hourly emission rate obtained from the 40 CFR, Part 60,

Appendix A, Methods 1-4 and 7 test results by the number hours the emissions unit operated during the year.

d. Emission Limitation:

1.60 pounds per hour of CO

5.8 tons per year of CO

Applicable Compliance Method:

Multiply the carbon monoxide emission factor of 0.80 pound of carbon monoxide per ton of aluminum melted in the furnace by the total amount of aluminum melted. This CO emission factors was based on air testing at similar sources.

Compliance with the tons per year CO emission limitation shall be demonstrated by multiplying the average hourly emission rate obtained from the 40 CFR, Part 60, Appendix A, Methods 1-4 and 10 test results by the number of hours the emissions unit operated during the year.

e. Emission Limitation:

5.44 pounds per hour of VOC

19.6 tons per year of VOC

Applicable Compliance Method:

Multiply the volatile organic compounds emission factors of 1.1 when melting, and 1.62 when pouring pounds of VOC per ton of aluminum poured by the total amount of aluminum melted/poured in the emissions unit. The VOC emission factor for melting was developed from the 2001 stack test conducted at FSI's Rootstown facility; the emission factor for pouring was developed from 1998 air testing at this facility.

Compliance with the tons per year VOC emission limitation shall be demonstrated by multiplying the average hourly emission rate obtained from the 40 CFR, Part 60, Appendix A, Methods 1-4 and 18 test results by the number of hours the emissions unit operated during the year.

f. Emission Limitation:

5% opacity as a 3-minute average

Applicable Compliance Method:

OAC rule 3745-17-03(B)(3)

g. Emission Limitation:

0.22 pound per hour of HF

0.8 ton per year of HF

Applicable Compliance Method:

Multiply the Hydrogen Fluoride emission factor of 0.11 pounds of Hydrogen Fluoride (HF) per ton of aluminum poured by the total amount of aluminum poured in the emissions unit. This HF emission factors was based on air testing in 1998. Testing may be required using USEPA test method (USEPA Method 13A or 13B),40 CFR 60, Appendix A, for fluorides. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA if necessary.

Compliance with the tons per year HF emission limitation shall be demonstrated by multiplying the average hourly emission rate obtained from the 40 CFR, Part 60, Appendix A, Methods 1-4 and 13A or 13B test results by the number of hours the emissions unit operated during the year

h. Emission Limitation:

0.20 pound per hour of Phenol

0.7 ton per year of Phenol

Applicable Compliance Method:

The phenol emission rate was based on air compliance testing conducted in 1998. Testing may be required using USEPA test method (USEPA Method 8270C),40 CFR 60, Appendix A, for Semivolatile Organics. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA if necessary.

Compliance with the tons per year Phenol emission limitation shall be demonstrated by multiplying the average hourly emission rate obtained from the 40 CFR, Part 60, Appendix A, Methods 1-4 and 8270C test results by the of number hours the emissions unit operated during the year.

i. Emission Limitation:

0.09 pound per hour of Cumene

0.3 ton per year of Cumene

**Applicable Compliance Method:**

The Cumene emission rate was based on air compliance testing conducted in 1998. Testing may be required using USEPA test method (USEPA Method 8270C), 40 CFR 60, Appendix A, for Semivolatile Organics. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA if necessary.

Compliance with the tons per year Cumene emission limitation shall be demonstrated by multiplying the average hourly emission rate obtained from the 40 CFR, Part 60, Appendix A, Methods 1-4 and 8270C test results by the number of hours the emissions unit operated during the year.

**F. Miscellaneous Requirements**

1. Modeling to demonstrate compliance with the Ohio EPA's "Air Toxic Policy" was not necessary because the emissions unit's maximum annual emissions for each toxic compound will be less than 1.0 ton. OAC Chapter 3745-31 requires permittees to apply for and obtain a new or modified permit to install prior to making a "modification" as defined by OAC rule 3745-31-01. The permittee is hereby advised that changes in the composition of the materials, or use of new materials, that would cause the emissions of any pollutant that has a listed TLV to increase to above 1.0 ton per year may require the permittee to apply for and obtain a new permit to install.

**PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. Applicable Emissions Limitations and/or Control Requirements**

- The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
<p>F003 - 7.0 MMBTU/hr natural gas fired aluminum melting furnace(1.5 ton/hr capacity) with rotating pouring and cooling turntable. Uncontrolled, emitted through a 125 foot stack, estimated capture efficiency 99%, remainder of emissions fugitive.</p>	<p>OAC rule 3745-31-05(A)(3)</p>	<p>Particulate emissions (PE) shall not exceed *0.97 pounds per and 3.5 tons per year.</p> <p>* All PE emissions are assumed PM-10</p> <p>Carbon monoxide (CO) shall not exceed 1.2 pounds per hour and 4.3 tons per year.</p> <p>Volatile Organic compounds (VOC) shall not exceed 4.08 pounds per hour and 14.7 ton per year.</p> <p>Sulfur dioxides (SOx) shall not exceed 0.42 pound per hour and 1.5 tons per year.</p> <p>Nitrogen oxides (NOx) shall not exceed 1.25 pound per hour and 4.5 tons per year.</p> <p>Hydrogen Fluoride (HF) shall not exceed 0.17 pound per hour and 0.6 ton per year.</p> <p>Phenol shall not exceed 0.02 pound per hour and 0.7 ton per year.</p>

	<p>Cumene shall not exceed 0.09 pound per hour and 0.7 ton per year.</p> <p>Visible particulate emissions of fugitive dust shall not exceed five percent opacity, as a three-minute average from any building opening or roof vent, except as specified by rule.</p> <p>The requirements of this rule also include compliance with the requirements of OAC rule 3745-35-07(B).</p>
OAC rule 3745-17-07	<p>The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).</p>
OAC rule 3745-17-08	See 2.a below.
OAC rule 3745-17-11	<p>The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).</p>
OAC rule 3745-35-07(B)	See B.3 thru 6 below.
40 CFR Part 63, Subpart RRR	See 2.f below.

**2. Additional Terms and Conditions**

- 2.a** This facility is located in an appendix A area, therefore paragraph B of OAC rule 3745-17-08 does apply. The permittee shall employ control measures that are sufficient to minimize or eliminate visible emissions of fugitive dust.
- 2.b** The permittee shall minimize or eliminate visible particulate emissions of fugitive dust by employing best available control measures. These measures shall include, but not be limited to, the following:
  - i. The installation and use of hoods, fans and other equipment to adequately enclose, contain, capture and vent the fugitive dust; and

- ii. The collection efficiency is sufficient to minimize or eliminate visible particulate emissions of fugitive dust at the point(s) of capture to the extent possible with good engineering design.

Nothing in this paragraph shall prohibit the permittee from employing other control measures to ensure compliance, as described below. Ohio EPA may require additional control measures at any or all operations described above if deemed necessary based on observed visible emissions.

- 2.c** For each operation that is not adequately enclosed, the above-identified control measure(s) shall be implemented at all times during operation. If the permittee determines, as a result of the inspection conducted pursuant to the monitoring section of this permit, that additional control measure(s) is (are) necessary to ensure compliance with the above-mentioned applicable requirements, such additional control measures shall be implemented immediately. Any required implementation of the additional control measure(s) shall continue during operation until further observation confirms that use of these additional control measure(s) is unnecessary.
- 2.d** Specific additional control measures shall be determined by the permittee. Such additional control measures may include increased water application, use of chemical dust suppressant, or shut-down of operations. The use of additional control measures shall, at all times, comply with all air, surface water, ground water, solid waste, and hazardous waste laws and regulations.
- 2.e** Implementation of the above-mentioned (A.2.b2) control measure(s) in accordance with the terms and conditions of this permit is appropriate and sufficient to satisfy the requirements of OAC rules 3745-17-08 and 3745-31-05(A)(3).
- 2.f** The equipment covered by this PTI is included in the Secondary Aluminum Production MACT, however paragraph 63.1500 of 40 CFR part 63, Subpart RRR states no facility shall be subject to this section if it melts only clean charge, internal scrap or customer returns as defined in paragraph 63.1503 of 40 CFR part 63, Subpart RRR.
- 2.g** The hourly allowable aluminum poured and emission limitations outlined are based upon the emissions unit's Potential to Emit (PTE). Therefore, no records are required to demonstrate compliance with these limitations.

## **B. Operational Restrictions**

1. The permittee shall use only clean charge, internal scrap or customer returns as defined in paragraph 63.1503 of 40 CFR part 63, Subpart RRR.
2. The permittee shall not pour more than 3,000 pounds of aluminum per hour in this emissions unit.

3. The permittee shall not operate this emissions unit more than 7,200 hours per year, based upon a rolling, 12-month summation of the operating hours.
4. The permittee shall not charged more than 10,800 tons per year of aluminum, based upon a rolling, 12-month summation of the aluminum charged
5. To ensure enforceability during the first 12 calendar months of operation following the issuance of this permit, the permittee shall not exceed the cumulative operating and aluminum charged rates specified in the following table:

<u>Month(s)</u>	<u>Maximum Allowable Cumulative Operating Hours</u>	<u>Maximum Allowable Cumulative Aluminum Charged (Tons)</u>
1	1400	2,100
1-2	2800	4,200
1-3	3500	5,250
1-4	4200	6,300
1-5	4900	7,350
1-6	5600	8,400
1-7	7200	10,800
1-8	7200	10,800
1-9	7200	10,800
1-10	7200	10,800
1-11	7200	10,800
1-12	7200	10,800

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

Also, after the first 12 calendar months of operation following the issuance of this permit, compliance with the annual aluminum charged limitation shall be based upon a rolling, 12-month summation of the monthly aluminum charged.

6. The permittee has agreed to accept limitations on annual operating hours to keep the emissions unit annual facility-wide VOC emissions below 99 tons per year, based upon a rolling, 12-month summation of the monthly emissions.

**C. Monitoring and/or record keeping Requirements**

1. The permittee shall perform daily checks, when the emissions unit is in operation and when the weather conditions allow, for any visible fugitive particulate emissions escaping from the building containing this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:
  - a. The color of the emissions.
  - b. Whether the emissions are representative of normal operations.
  - c. If the emissions are not representative of normal operations, the cause of the abnormal emissions.
  - d. The total duration of any abnormal visible emission incident.
  - e. Any corrective actions taken to eliminate the abnormal visible emissions.
2. If any visible emissions in excess of 5 percent opacity are observed, corrective actions shall be employed to eliminate any visible emissions in excess of 5 percent opacity, these actions shall also be noted in the operations log.
3. The permittee shall maintain monthly records of the following information:
  - a. The operating hours for each month.
  - b. The aluminum charged rate for each month.
  - c. The rolling, 12-month summation of the VOC emissions.
  - d. Beginning after the first 12 calendar months of operation following issuance of this permit, the rolling, 12-month summation of the operating hours.
  - e. Beginning after the first 12 calendar months of operation following issuance of this permit, the rolling, 12-month summation of the aluminum charged.

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

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

**D. Reporting Requirements**

1. The permittee shall submit deviation (excursion) reports which identify:

- a. All days during which any abnormal visible fugitive particulate emissions were observed escaping from the building containing this emissions unit.
  - b. Visible emissions in excess of 5 percent opacity.
  - c. Describe any corrective actions taken to eliminate the abnormal visible fugitive particulate emissions, or visible emissions greater than 5 percent opacity.
2. If no visible emissions exceeded 5 percent opacity, and no unusual visible emissions were observed during the reporting period, the permittee shall submit a report which states no visible emissions exceeding 5 percent opacity, and no unusual visible emissions were observed during the reporting period.
  3. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling, 12 month operating hours restriction and, for the first 12 calendar months of operation following issuance of this permit, all exceedances of the maximum allowable cumulative operating hours, based on the terms in II.B.3 and 5.
  4. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling, 12 month aluminum charged limitation and, for the first 12 calendar months of operation following issuance of this permit, all exceedances of the maximum allowable cumulative aluminum charged, based on the terms in II.B.4 and 5.
  5. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling, 12 month emission limitation for VOC.
  6. These deviation (excursion) reports shall be submitted in accordance with the requirements specified in General Term and Condition A.2 of this permit.
  7. The permittee shall also submit annual reports which specify the total VOC emissions from this emissions unit for the previous calendar year. These reports shall be submitted by January 31 of each year.

## **E. Testing Requirements**

1. Compliance with the emission limitations in sections A.1 and A.2 of these terms and conditions shall be determined in accordance with the following methods:
  - a. Emission Limitation:  
  
0.97 pound per hour of PE  
3.5 tons per year of PE

Applicable Compliance Method:

Multiply the particulate emission factors of 0.37 when melting and 0.27 when pouring pound of particulate emissions per ton of metal melted by the maximum hourly rate of metal melted. The particulate emission factor for melting was developed from the 2001 stack test conducted at FSI's Rootstown facility; the particulate emission factor for pouring was developed from the 1998 stack test conducted at this facility..

Compliance with the tons per year particulate emission limitation shall be demonstrated by multiplying the average (three one-hour stack test runs) hourly emission rate obtained from the 40 Code of Federal Regulation (CFR), Part 60, Appendix A, Methods 1-5 test results by the number of hours the emissions unit operated during the year.

b. Emission Limitation:

0.49 pound per hour of SO<sub>2</sub>  
1.76 tons per year of SO<sub>2</sub>

Applicable Compliance Method:

Multiply the sulfur dioxide emission factor of 0.28 pound of sulfur oxides per ton of metal melted by the maximum hourly rate of metal poured. This SO<sub>x</sub> emission factors was based on air testing conducted in 1998.

Compliance with the tons per year particulate emission limitation shall be demonstrated by multiplying the average hourly emission rate obtained from the 40 CFR, Part 60, Appendix A, Methods 1-4 and 6 test results by the number of hours the emissions unit operated during the year.

c. Emission Limitation:

1.25 pounds per hour of NO<sub>x</sub>  
4.5 tons per year of NO<sub>x</sub>

Applicable Compliance Method:

Multiply the nitrogen oxide emission factor of 0.84 pound of nitrogen oxides per ton of metal melted by the maximum hourly rate of metal melted. This NO<sub>x</sub> emission factors was based on air testing at similar sources (FSI's Rootstown facility) conducted in 2001.

Compliance with the tons per year NO<sub>x</sub> emission limitation shall be demonstrated by multiplying the average hourly emission rate obtained from the 40 CFR, Part 60,

Appendix A, Methods 1-4 and 7 test results by the number hours the emissions unit operated during the year.

d. Emission Limitation:

1.20 pounds per hour of CO

4.3 tons per year of CO

Applicable Compliance Method:

Multiply the carbon monoxide emission factor of 0.80 pound of carbon monoxide per ton of aluminum melted in the furnace by the total amount of aluminum melted. This CO emission factors was based on air testing at similar sources.

Compliance with the tons per year CO emission limitation shall be demonstrated by multiplying the average hourly emission rate obtained from the 40 CFR, Part 60, Appendix A, Methods 1-4 and 10 test results by the number of hours the emissions unit operated during the year.

e. Emission Limitation:

4.08 pounds per hour of VOC

14.7 tons per year of VOC

Applicable Compliance Method:

Multiply the volatile organic compounds emission factors of 1.1 when melting, and 1.62 when pouring pounds of VOC per ton of aluminum poured by the total amount of aluminum melted/poured in the emissions unit. The VOC emission factor for melting was developed from the 2001 stack test conducted at FSI's Rootstown facility; the emission factor for pouring was developed from 1998 air testing at this facility.

Compliance with the tons per year VOC emission limitation shall be demonstrated by multiplying the average hourly emission rate obtained from the 40 CFR, Part 60, Appendix A, Methods 1-4 and 18 test results by the number of hours the emissions unit operated during the year.

f. Emission Limitation:

5% opacity as a 3-minute average

Applicable Compliance Method:

OAC rule 3745-17-03(B)(3)

g. Emission Limitation:

0.17 pound per hour of HF

0.6 ton per year of HF

Applicable Compliance Method:

Multiply the Hydrogen Fluoride emission factor of 0.11 pounds of Hydrogen Fluoride (HF) per ton of aluminum poured by the total amount of aluminum poured in the emissions unit. This HF emission factors was based on air testing conducted in 1998. Testing may be required using USEPA test method (USEPA Method 13A or 13B), 40 CFR 60, Appendix A, for fluorides. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA if necessary.

Compliance with the tons per year HF emission limitation shall be demonstrated by multiplying the average hourly emission rate obtained from the 40 CFR, Part 60, Appendix A, Methods 1-4 and 13A or 13B test results by the number of hours the emissions unit operated during the year

h. Emission Limitation:

0.20 pound per hour of Phenol

0.7 ton per year of Phenol

Applicable Compliance Method:

The phenol emission rate was based on air compliance testing conducted in 1998. Testing may be required using USEPA test method (USEPA Method 8270C), 40 CFR 60, Appendix A, for Semivolatile Organics. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA if necessary.

Compliance with the tons per year Phenol emission limitation shall be demonstrated by multiplying the average hourly emission rate obtained from the 40 CFR, Part 60, Appendix A, Methods 1-4 and 8270C test results by the number of hours the emissions unit operated during the year.

i. Emission Limitation:

0.09 pound per hour of Cumene

0.7 ton per year of Cumene

**Applicable Compliance Method:**

The Cumene emission rate was based on air compliance testing conducted in 1998. Testing may be required using USEPA test method (USEPA Method 8270C), 40 CFR 60, Appendix A, for Semivolatile Organics. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA if necessary.

Compliance with the tons per year Cumene emission limitation shall be demonstrated by multiplying the average hourly emission rate obtained from the 40 CFR, Part 60, Appendix A, Methods 1-4 and 8270C test results by the number of hours the emissions unit operated during the year.

**F. Miscellaneous Requirements**

1. Modeling to demonstrate compliance with the Ohio EPA's "Air Toxic Policy" was not necessary because the emissions unit's maximum annual emissions for each toxic compound will be less than 1.0 ton. OAC Chapter 3745-31 requires permittees to apply for and obtain a new or modified permit to install prior to making a "modification" as defined by OAC rule 3745-31-01. The permittee is hereby advised that changes in the composition of the materials, or use of new materials, that would cause the emissions of any pollutant that has a listed TLV to increase to above 1.0 ton per year may require the permittee to apply for and obtain a new permit to install.

**PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. Applicable Emissions Limitations and/or Control Requirements**

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
<p>F005 - 10 Casting and knock out stations. Air hammers removing sand from castings.</p> <p>The emissions are enclosed within cabinets which have an estimated capture efficiency of 99%. The captured emissions are vented to cartridge filters which have a estimated control efficiency of 99%</p> <p>Overall control efficiency 98%</p>	<p>OAC rule 3745-31-05(A)(3)</p>	<p>Combined Stack Emissions: Volatile Organic compounds (VOC) shall not exceed 4.16 pounds per hour and 15.0 tons per year.</p> <p>Particulate emissions (PE) shall not exceed *1.73 pound per hour and 6.21 tons per year.</p> <p>* All PE emissions are assumed to be less than ten microns (PM-10).</p> <p>Fugitive Emissions: VOC shall not exceed 0.04 pound per hour and 0.15 ton per year.</p> <p>PE shall not exceed 0.03 lb/hr and 0.12 ton per year.</p> <p>Visible particulate emissions of fugitive dust shall not exceed five percent opacity, as a three-minute average, except as specified by rule.</p> <p>From the control device exhaust stack, the grain per dry standard cubic foot of exhaust gas shall not exceed 0.02 or no visible particulate emissions (whichever is less stringent).</p>

OAC rule 3745-17-07	The requirements of this rule also include compliance with the requirements of OAC rule 3745-35-07(B).
OAC rule 3745-17-08(A)	The requirements of this rule are less stringent than the requirements of OAC rule 3745-31-05(A)(3).
OAC rule 3745-17-11	See 2.a below.
OAC Rule 3745-35-07(B)	The requirements of this rule are less stringent than the requirements of OAC rule 3745-31-05(A)(3). See B.3 thru 6 below.

**2. Additional Terms and Conditions**

- 2.a** This facility is located in an appendix A area, therefore paragraph B of OAC rule 3745-17-08 does apply. The permittee shall employ control measures that are sufficient to minimize or eliminate visible emissions of fugitive dust.
- 2.b** The permittee shall minimize or eliminate visible particulate emissions of fugitive dust by employing best available control measures. These measures shall include, but not be limited to, the following:
  - i. The installation and use of hoods, fans and other equipment to adequately enclose, contain, capture and vent the fugitive dust.
  - ii. The collection efficiency is sufficient to minimize or eliminate visible particulate emissions of fugitive dust at the point(s) of capture to the extent possible with good engineering design.

Nothing in this paragraph shall prohibit the permittee from employing other control measures to ensure compliance, as described below. Ohio EPA may require additional control measures at any or all operations described above if deemed necessary based on observed visible emissions.

- 2.c** For each operation that is not adequately enclosed, the above-identified control measure(s) shall be implemented at all times during operation. If the permittee

determines, as a result of the inspection conducted pursuant to the monitoring section of this permit, that additional control measure(s) is (are) necessary to ensure compliance with the above-mentioned applicable requirements, such additional control measures shall be implemented immediately. Any required implementation of the additional control measure(s) shall continue during operation until further observation confirms that use of these additional control measure(s) is unnecessary.

- 2.d** Specific additional control measures shall be determined by the permittee. Such additional control measures may include increased water application, use of chemical dust suppressant, or shut-down of operations. The use of additional control measures shall, at all times, comply with all air, surface water, ground water, solid waste, and hazardous waste laws and regulations.
- 2.e** Implementation of the above-mentioned (A.2.b.) control measure(s) in accordance with the terms and conditions of this permit is appropriate and sufficient to satisfy the requirements of OAC rules 3745-17-08 and 3745-31-05(A)(3).
- 2.f** The hourly allowable aluminum poured and emission limitations outlined are based upon the emissions unit's Potential to Emit (PTE). Therefore, no records are required to demonstrate compliance with these limits.

**B. Operational Restrictions**

- 1. All particulate emissions captured from this emissions unit shall be vented to the cartridge filters.
- 2. The permittee shall not pour more than 7,000 pounds of aluminum per hour in this emissions unit.
- 3. The permittee shall not operate this emissions unit more than 7,200 per year, based upon a rolling 12-month summation of the operating hours.
- 4. The permittee shall not charged more than 25,200 tons per year of aluminum, based upon a rolling 12-month summation of the aluminum charged.
- 5. To ensure enforceability during the first 12 calendar months of operation following the issuance of this permit, the permittee shall not exceed the cumulative operating rates specified in the following table:

<u>Month(s)</u>	<u>Maximum Allowable Cumulative Operating Hours</u>	<u>Maximum Allowable Cumulative Aluminum Charged (Tons)</u>
1	1200	4,200
1-2	2400	8,400
1-3	3000	10,500
1-4	3600	12,600
1-5	4200	14,700
1-6	4800	16,800
1-7	5400	18,900
1-8	6000	21,000
1-9	6600	23,100
1-10	7200	25,200
1-11	7200	25,200
1-12	7200	25,200

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 monthly operating hours.

Also, after the first 12 calendar months of operation following the issuance of this permit, compliance with the annual aluminum charged limitation shall be based upon a rolling, 12-month summation of the monthly aluminum charged.

6. The permittee has agreed to accept limitations on annual operating hours to keep the emissions unit annual facility-wide VOC emissions below 99 tons per year, based upon a rolling, 12-month summation of the monthly emissions.

### **C. Monitoring and/or record keeping Requirements**

1. The permittee shall perform daily checks, when the emissions unit is in operation and when the weather conditions allow, for any visible fugitive particulate emissions escaping from the building containing this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:
  - a. The color of the emissions.
  - b. Whether the emissions are representative of normal operations.
  - c. If the emissions are not representative of normal operations, the cause of the abnormal emissions.
  - d. The total duration of any abnormal visible emission incident.
  - e. Any corrective actions taken to eliminate the abnormal visible emissions.

2. If any visible emissions in excess of 5 percent opacity are observed, corrective actions shall be employed to eliminate any visible emissions in excess of 5 percent opacity, these actions shall also be noted in the operations log.
3. The permittee shall maintain monthly records of the following information:
  - a. The operating hours for each month.
  - b. The aluminum charged rate for each month.
  - c. The rolling, 12-month summation of the VOC emissions.
  - d. Beginning after the first 12 calendar months of operation following issuance of this permit, the rolling, 12-month summation of the operating hours.
  - e. Beginning after the first 12 calendar months of operation following issuance of this permit, the rolling, 12-month summation of the aluminum charged.

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

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

#### **D. Reporting Requirements**

1. The permittee shall submit deviation (excursion) reports which identify:
  - a. All days during which any abnormal visible fugitive particulate emissions were observed escaping from the building containing this emissions unit.
  - b. Visible emissions in excess of 5 percent opacity.
  - c. Describe any corrective actions taken to eliminate the abnormal visible fugitive particulate emissions, or visible emissions greater than 5 percent opacity.
2. If no visible emissions exceeded 5 percent opacity, and no unusual visible emissions were observed during the reporting period, the permittee shall submit a report which states no visible emissions exceeding 5 percent opacity, and no unusual visible emissions were observed during the reporting period.
3. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling, 12 month operating hours limitation and, for the first 12 calendar months of operation

following issuance of this permit, all exceedances of the maximum allowable cumulative operating hours, based on the terms in II.B.3 and 5.

4. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling, 12 month aluminum charged limitation and, for the first 12 calendar months of operation following issuance of this permit, all exceedances of the maximum allowable cumulative aluminum charged, based on the terms in II.B.4 and 5.
5. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling, 12 month emission limitation for VOC.
6. These deviation (excursion) reports shall be submitted in accordance with the requirements specified in General Term and Condition A.2 of this permit.
7. The permittee shall also submit annual reports which specify the total VOC emissions from this emissions unit for the previous calendar year. These reports shall be submitted by January 31 of each year.

**E. Testing Requirements**

1. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:
  - a. The emission testing shall be conducted within 3 months after issuance of the permit.
  - b. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission rate(s) for particulates and volatile organic compounds.
  - c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s):

<b>Pollutant</b>	<b>USEPA Approved Test Method</b>
particulates	Methods 1 thru 5 of 40 <u>CFR</u> Part 60, Appendix A
volatile organic compounds	Methods 1 thru 5 and 25 or 25A of 40 <u>CFR</u> Part 60, Appendix A

If applicable. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.

- d. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the appropriate Ohio EPA District Office or local air agency.

Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. 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 District Office's or local air agency's refusal to accept the results of the emission test(s).

Personnel from the appropriate Ohio EPA District Office or local air agency 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 and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the appropriate Ohio EPA District Office or local air agency.

2. Compliance with the emission limitations in sections A.1 and A.2 of these terms and conditions shall be determined in accordance with the following methods:

- a. Emission Limitation:

1.73 pound per hour of combined stack PE  
0.02 grain per dry standard cubic foot of exhaust gas  
6.21 tons per year of combined stack PE

Applicable Compliance Method:

Compliance with hourly particulate emission limitation shall be obtained from the 40 CFR 60, Appendix A Methods 1-5 test results.

hourly PE = (i.e.,  $0.02 \text{ gr/dscf} \times 10,070 \text{ acfm} \times 60 \text{ min/hr} \times 1 \text{ lb/7000 gr}$ ).

Compliance with the tons per year particulate emission limitation shall be demonstrated by multiplying the average hourly emission rate obtained from the 40 CFR 60, Appendix A Methods 1-5 test results by the number hours the emissions unit operated during the year.

b. Emission Limitation:

0.03 pound per hour of fugitive PE

0.12 tons per year of fugitive PE

Applicable Compliance Method:

Multiply the particulate emission factors of 3.2 pounds of particulate emissions per ton of metal melted by the maximum hourly rate of metal processed, by the estimated fugitive percentage of 1% and by 1-70% the estimated capture efficiency of the building. This particulate emission factors was obtained Fire (version 6.23) SCC 3-04-003-31.

Compliance with the tons per year particulate emission limitation shall be demonstrated by multiplying the average hourly emission rate obtained above by the number hours the emissions unit operated during the year.

c. Emission Limitation:

4.2 pounds per hour of VOC

15.15 tons per year of VOC

Applicable Compliance Method:

Multiply the volatile organic compounds emission factors of 1.20 pounds of VOC per ton of aluminum processed by the total amount of aluminum melted/poured in the emissions unit. This VOC emission factors was obtained Fire (version 6.23) SCC 3-04-003-31.

Compliance with the tons per year of VOC emission limitation shall be demonstrated by multiplying the average hourly emission rate obtained from the 40 CFR 60, Appendix A Methods 1 thru 4 and 25 or 25A test results by the number hours the emissions unit operated during the year.

d. Emission Limitation:

5% opacity as a 3-minute average from fugitive opening

Applicable Compliance Method:

OAC rule 3745-17-03(B)(3)

e. Emission Limitation:

No visible particulate emissions from the control device exhaust stack

Applicable Compliance Method:

OAC rule 3745-17-03(B)(4)

**F. Miscellaneous Requirements**

1. Modeling to demonstrate compliance with the Ohio EPA's "Air Toxic Policy" was not necessary because the emissions unit's maximum annual emissions for each toxic compound will be less than 1.0 ton. OAC Chapter 3745-31 requires permittees to apply for and obtain a new or modified permit to install prior to making a "modification" as defined by OAC rule 3745-31-01. The permittee is hereby advised that changes in the composition of the materials, or use of new materials, that would cause the emissions of any pollutant that has a listed TLV to increase to above 1.0 ton per year may require the permittee to apply for and obtain a new permit to install.

**PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. Applicable Emissions Limitations and/or Control Requirements**

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
<p>F007 - core making operations, using sand and Isoset with a SO<sub>2</sub> reactant. Consisting of a day silo, heater/cooler, elevators, six hoppers, six core machines, mixers and conveyors.</p> <p>The particulate emissions are enclosed with an estimated capture efficiency of 99%. The captured emissions are vented to a bag house which has an estimated control efficiency of 99%</p> <p>Overall control efficiency 98%</p> <p>The SO<sub>2</sub> emissions are enclosed by the core machines with an estimated capture efficiency of 99%. The captured emissions are vented to one of two SO<sub>2</sub> scrubber which have an estimated control efficiency of 99.9%</p> <p>Overall control efficiency 98%</p> <p>This emissions unit produces cores for the entire facility.</p>	<p>OAC rule 3745-31-05(A)(3)</p>	<p>Combined Stack Emissions from the control device stacks for all six machines:</p> <p>Volatile Organic Compounds (VOC) emissions shall not exceed 2.55 pound per hour and 9.2 tons per year.</p> <p>Particulate emissions (PE) shall not exceed *0.09 pound per hour and 0.3 ton per year.</p> <p>Fugitive Emissions for all six core machines: *0.27 pound fugitive particulate emissions, and 0.97 ton per year.</p> <p>* All PE emissions are assumed to be less than ten microns (PM-10).</p> <p>Sulfur dioxide (SO<sub>2</sub>) emissions shall not exceed 0.24 pound per hour and 0.86 ton per year.</p> <p>No visible emissions from the baghouse exhaust stack.</p> <p>Visible particulate emissions of fugitive dust shall not exceed five</p>

	percent opacity, as a three-minute average, except as specified by rule.
OAC rule 3745-17-07	The requirements of this rule also include compliance with the requirements of OAC rule 3745-35-07(B).
OAC rule 3745-17-08(A)	Less stringent than the requirements of OAC rule 3745-31-05(A)(3).
OAC rule 3745-17-11	See A.2.a below.
OAC Rule 3745-21-07(G)	Less stringent than the requirements of OAC rule 3745-31-05(A)(3).  Except per OAC rule 3745-21-07(G)(9)(h), see the requirements of OAC rule 3745-31-05(A)(3).
OAC Rule 3745-35-07(B)	See B.7 thru 10 below.

**2. Additional Terms and Conditions**

- 2.a** The permittee shall employ best available technology that is sufficient to minimize or eliminate visible emissions of fugitive dust.
- 2.b** The hourly allowable pounds of isoset sand cores produced per hour and emission limitations outlined are based upon the emissions unit's Potential to Emit (PTE). Therefore, no records are required to demonstrate compliance with these limits

**B. Operational Restrictions**

1. The pressure drop across the scrubber shall be maintained within the range of 2-5 inches of water while the emissions unit is in operation.
2. All particulate emissions captured from the core making process of this emissions unit shall be vented to the control device.
3. The permittee shall use best engineering practices available to ensure the majority of SO<sub>2</sub> emissions are captured and vented to a SO<sub>2</sub> Scrubber with 99% control efficiency.

4. The pH of the scrubber liquor shall be maintained within the range of 7.1-14.
5. The permittee shall not produced more than 1,000 pounds of isoset sand cores per hour in this emissions unit.
6. The permittee shall not operate this emissions unit more than 7,200 hours, based upon a rolling 12-month summation of the operating hours.
7. The permittee shall not produced more than 21,600 tons per year of isoset sand cores produced facility-wide, based upon a rolling 12-month summation of the isoset sand cores produced facility-wide.
8. To ensure enforceability during the first 12 calendar months of operation following the issuance of this permit, the permittee shall not exceed the cumulative operating and isoset sand cores produced facility-wide rates specified in the following table:

<u>Month(s)</u>	<u>Maximum Allowable Cumulative Operating Hours</u>	<u>Maximum Allowable Cumulative sand cores Produced facility-wide (Tons)</u>
1	1200	3600
1-2	2400	7200
1-3	3000	9000
1-4	3600	10800
1-5	4200	12600
1-6	4800	14400
1-7	5400	16200
1-8	6000	18000
1-9	6600	19800
1-10	7200	21600
1-11	7200	21600
1-12	7200	21600

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual operating hours and isoset sand cores produced facility-wide limitations shall be based upon a rolling, 12-month summation of the monthly operating hours and isoset sand cores produced facility-wide.

9. The permittee has agreed to accept limitations on annual operating hours to keep the emissions unit annual facility-wide VOC emissions below 99 tons per year, based upon a rolling 12-month summation of the VOC emissions.

### C. Monitoring and/or Record keeping Requirements

1. The permittee shall perform daily checks, when the emissions unit is in operation and when the weather conditions allow, for any visible fugitive particulate emissions escaping from the building containing this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:
  - a. The color of the emissions.
  - b. Whether the emissions are representative of normal operations.
  - c. If the emissions are not representative of normal operations, the cause of the abnormal emissions.
  - d. The total duration of any abnormal visible emission incident.
  - e. Any corrective actions taken to eliminate the abnormal visible emissions.
2. If any visible emissions in excess of 5 percent opacity are observed, corrective actions shall be employed to eliminate any visible emissions in excess of 5 percent opacity, these actions shall also be noted in the operations log.
- 3.. The permittee shall properly install, operate, and maintain equipment to monitor the pressure drop across the baghouse while the emissions unit is 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.
4. The permittee shall properly install, operate and maintain equipment to continuously monitor and record the pH of the scrubber liquor while the emissions unit is in operation. The pH monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

The permittee shall collect and record the following information each day:

- a. The pH of the scrubber liquor, on a per shift basis.
  - b. A log or record of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.
5. The permittee shall maintain monthly records of the following information:
- a. The operating hours for each month.
  - b. The isoset sand cores produced for each month.
  - c. The rolling, 12-month summation of the VOC emissions.

- d. Beginning after the first 12 calendar months of operation following issuance of this permit, the rolling, 12-month summation of the operating hours.
- e. Beginning after the first 12 calendar months of operation following issuance of this permit, the rolling, 12-month summation of the isoset sand cores produced for this emissions unit as well as facility-wide.

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

Also, during the first 12 calendar months of operation following issuance of this permit, the permittee shall record the cumulative isoset sand cores produced facility-wide for each calendar month.

#### **D. Reporting Requirements**

- 1. The permittee shall submit pressure drop deviation (excursion) reports that identify all periods of time during which the pressure drop across the baghouse did not comply with the allowable range specified above.
- 2. The permittee shall submit pH deviation (excursion) reports that identify all periods of time during which the scrubber liquor pH did not comply with the pH requirements specified above.
- 3. The permittee shall submit deviation (excursion) reports which identify:
  - a. All days during which any abnormal visible fugitive particulate emissions were observed escaping from the building containing this emissions unit.
  - b. Visible emissions in excess of 5 percent opacity.
  - c. Describe any corrective actions taken to eliminate the abnormal visible fugitive particulate emissions, or visible emissions greater than 5 percent opacity.
- 4. If no visible emissions exceeded 5 percent opacity, and no unusual visible emissions were observed during the reporting period, the permittee shall submit a report which states no visible emissions exceeding 5 percent opacity, and no unusual visible emissions were observed during the reporting period.
- 5. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling, 12 month operating hours restriction and, for the first 12 calendar months of operation following issuance of this permit, all exceedances of the maximum allowable cumulative operating hours, based on the terms in II.B.7 and 9.

6. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling, 12 month isoset sand cores produced facility-wide limitation and, for the first 12 calendar months of operation following issuance of this permit, all exceedances of the maximum allowable cumulative isoset sand cores produced facility-wide, based on the terms in II.B.8 and 9.
7. These deviation (excursion) reports shall be submitted in accordance with the requirements specified in General Term and Condition A.2 of this permit.
8. The permittee shall also submit annual reports which specify the total VOC emissions from this emissions unit for the previous calendar year. These reports shall be submitted by January 31 of each year.

**E. Testing Requirements**

1. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:
  - a.. The emission testing shall be conducted within 3 months after issuance of the permit.
  - b. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission rate(s) for particulates, sulfur dioxides, and volatile organic compounds.
  - c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s):

<b>Pollutant</b>	<b>USEPA Approved Test Methods</b>
particulates	Methods 1 thru 5 of 40 <u>CFR</u> Part 60, Appendix A
sulfur dioxide	Methods 1 thru 4 and 6 of 40 <u>CFR</u> Part 60, Appendix A
volatile organic compounds	Methods 1 thru 4 and 25 or 25A of 40 <u>CFR</u> Part 60, Appendix A

The test method(s) which must be employed to demonstrate compliance with the capture efficiency and control efficiency limitations for particulates and sulfur dioxides are the following:

- i. The capture efficiency shall be determined using the procedure for the determination of capture efficiency in accordance with the USEPA’s “Guidelines for Determining Capture Efficiency,” dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and

validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.) .

- ii. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures (or the approved alternative test protocol) as approved by the appropriate Ohio EPA District Office or local air agency.

Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.

- d.. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the appropriate Ohio EPA District Office or local air agency.

Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. 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 District Office's or local air agency's refusal to accept the results of the emission test(s).

Personnel from the appropriate Ohio EPA District Office or local air agency 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 and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the appropriate Ohio EPA District Office or local air agency.

- 2. Compliance with the emission limitations in sections A.1 and A.2 of these terms and conditions shall be determined in accordance with the following methods:

a. Emission Limitation:

2.55 pounds per hour of combined stack PE for all six core machines.

9.2 tons per year of combined stack PE for all six core machines.

Applicable Compliance Method:

Compliance with the pound per hour emission limitation shall be obtained by stack testing in accordance with methods 1 thru 5, 40 CFR 60, Appendix A, as required by sections E.1.a through E.1.d of this permit. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA if necessary.

Compliance with the tons per year particulate emission limitation shall be demonstrated by multiplying the average hourly emission rate obtained from 40 CFR 60, Appendix A, Methods 1-5 test results and multiplying them by the number hours the emissions unit operated during the year.

b. Emission Limitation:

0.24 pound per hour of SO<sub>2</sub> for all six core machines

0.9 ton per year of SO<sub>2</sub> for all six core machines

Applicable Compliance Method:

Compliance with the pound per hour emission limitation shall be obtained by stack testing in accordance with methods 1 thru 4 and 6, 40 CFR 60, Appendix A, as required by sections E.1.a through E.1.d of this permit. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA if necessary.

Compliance with the tons per year SO<sub>2</sub> emission limitation shall be demonstrated by multiplying the average hourly emission rate obtained from the 40 CFR Part 60, Appendix A, Methods 1-4 and 6 test results and multiplying them by the number hours the emissions unit operated during the year.

c. Emission Limitation:

2.55 pound per hour of VOC for all six core machines

9.2 tons per year of VOC for all six core machines

Applicable Compliance Method:

Compliance with the pound per hour emission limitation shall be obtained by stack testing in accordance with methods 1 thru 4 and 25 or 25A, 40 CFR 60, Appendix A, as

required by sections E.1.a through E.1.d of this permit. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA if necessary.

Multiply the volatile organic compounds emission factor obtained during the emission test in pounds of VOC per ton of sand processed in the emissions unit by the total amount of sand recovered.

d. Emission Limitation:

0.27 pound per hour of fugitive particulate emissions for all six core machines  
0.97 ton per year of fugitive particulate emissions for all six core machines

Applicable Compliance Method:

Multiply the particulate emissions factor of 0.3 pound of PE per ton of sand processed by the total amount of sand processed in this emissions unit, and by the estimated capture efficiency of the building 70%. The emission factor for core mixing was obtained from the Ohio RACM, Table 2.7-1, emission factor # 11 for core sand mixing.

Multiply the fugitive PE emission factor obtained above in pounds of PE per ton of sand processed in the emissions unit by the total amount of sand processed.

e. Emission Limitation:

5 % opacity as a 3-minute average of fugitive emissions

Applicable Compliance Method:

OAC rule 3745-17-03(B)(3)

f. Emission Limitation:

No visible particulate emissions from the control device exhaust stack

Applicable Compliance Method:

OAC rule 3745-17-03(B)(4)

**F. Miscellaneous Requirements**

1. Modeling to demonstrate compliance with the Ohio EPA's "Air Toxic Policy" was not necessary because the emissions unit's maximum annual emissions for each toxic compound will be less than 1.0 ton. OAC Chapter 3745-31 requires permittees to apply for and obtain a new or modified permit to install prior to making a "modification" as defined by OAC rule 3745-31-01.

**Ravenna Aluminum Industries Inc**

**PTI Application: 16-02275**

**Issued: 7/29/2003**

**Facility ID: 1667060122**

**Emissions Unit ID: F007**

The permittee is hereby advised that changes in the composition of the materials, or use of new materials, that would cause the emissions of any pollutant that has a listed TLV to increase to above 1.0 ton per year may require the permittee to apply for and obtain a new permit to install.

**PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. Applicable Emissions Limitations and/or Control Requirements**

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
<p>F008 - core making operations, using sand and Isoaset with a SO<sub>2</sub> reactant. Consisting of a day silo, heater/cooler, elevators, six hoppers, six core machines, mixers and conveyors.</p> <p>The particulate emissions are enclosed with an estimated capture efficiency of 99%. The captured emissions are vented to a bag house which has an estimated control efficiency of 99%</p> <p>Overall control efficiency 98%</p> <p>The SO<sub>2</sub> emissions are enclosed by the core machines with an estimated capture efficiency of 99%. The captured emissions are vented to one of two SO<sub>2</sub> scrubber which have an estimated control efficiency of 99%</p> <p>Overall control efficiency 98%</p> <p>This emissions unit produces cores for the entire facility.</p>	<p>OAC rule 3745-31-05(A)(3)</p>	<p>Combined Stack Emissions from the control device stacks for all six machines:</p> <p>Volatile Organic Compounds (VOC) emissions shall not exceed 2.55 pound per hour and 9.2 tons per year.</p> <p>Particulate emissions (PE) shall not exceed *0.09 pound per hour and 0.3 ton per year.</p> <p>Fugitive Emissions for all six core machines: *0.27 pound fugitive particulate emissions, and 0.97 ton per year.</p> <p>* All PE emissions are assumed to be less than ten microns (PM-10).</p> <p>Sulfur dioxide (SO<sub>2</sub>) emissions shall not exceed 0.24 pound per hour and 0.86 ton per year.</p> <p>No Visible emissions from the baghouse exhaust stack.</p> <p>Visible particulate emissions of fugitive dust shall not exceed five</p>

	<p>percent opacity, as a three-minute average, except as specified by rule.</p> <p>The requirements of this rule also include compliance with the requirements of OAC rule 3745-35-07(B).</p>
OAC rule 3745-17-07	<p>Less stringent than the requirements of OAC rule 3745-31-05(A)(3).</p>
OAC rule 3745-17-08(A)	<p>See A.2.a below.</p>
OAC rule 3745-17-11	<p>Less stringent than the requirements of OAC rule 3745-31-05(A)(3).</p>
OAC rule 3745-21-07(G)	<p>Except per OAC rule 3745-21-07(G)(9)(h), see the requirements of OAC rule 3745-31-05(A)(3).</p>
OAC rule 3745-35-07(B)	<p>See B.7 thru 10 below.</p>

**2. Additional Terms and Conditions**

- 2.a** The permittee shall employ best available technology that is sufficient to minimize or eliminate visible emissions of fugitive dust.
- 2.b** The hourly allowable pounds of isoset sand cores produced per hour and emission limitations outlined are based upon the emissions unit's Potential to Emit (PTE). Therefore, no records are required to demonstrate compliance with these limits

**B. Operational Restrictions**

1. The pressure drop across the scrubber shall be maintained within the range of 2-5 inches of water while the emissions unit is in operation.
2. All particulate emissions captured from the core making process of this emissions unit shall be vented to the control device.
3. The permittee shall use best engineering practices available to ensure the majority of SO<sub>2</sub> emissions are captured and vented to a SO<sub>2</sub> Scrubber with 99% control efficiency.

4. The pH of the scrubber liquor shall be maintained within the range of 7.1-14.
5. The permittee shall not produced more than 1,000 pounds of isoset sand cores per hour in this emissions unit.
6. The permittee shall not operate this emissions unit more than 7,200 hours, based upon a rolling 12-month summation of the operating hours.
7. The permittee shall not produced more than 21,600 tons per year of isoset sand cores produced facility-wide, based upon a rolling 12-month summation of the isoset sand cores produced facility-wide.
8. To ensure enforceability during the first 12 calendar months of operation following the issuance of this permit, the permittee shall not exceed the cumulative operating and isoset sand cores produced facility-wide rates specified in the following table:

<u>Month(s)</u>	<u>Maximum Allowable Cumulative Operating Hours</u>	<u>Maximum Allowable Cumulative sand cores Produced facility-wide (Tons)</u>
1	1200	3600
1-2	2400	7200
1-3	3000	9000
1-4	3600	10800
1-5	4200	12600
1-6	4800	14400
1-7	5400	16200
1-8	6000	18000
1-9	6600	19800
1-10	7200	21600
1-11	7200	21600
1-12	7200	21600

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual operating hours and isoset sand cores produced facility-wide limitations shall be based upon a rolling, 12-month summation of the monthly operating hours and isoset sand cores produced facility-wide.

9. The permittee has agreed to accept limitations on annual operating hours to keep the emissions unit annual facility-wide VOC emissions below 99 tons per year, based upon a rolling 12-month summation of the VOC emissions.

### C. Monitoring and/or Record keeping Requirements

1. The permittee shall perform daily checks, when the emissions unit is in operation and when the weather conditions allow, for any visible fugitive particulate emissions escaping from the building containing this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:
  - a. The color of the emissions.
  - b. Whether the emissions are representative of normal operations.
  - c. If the emissions are not representative of normal operations, the cause of the abnormal emissions.
  - d. The total duration of any abnormal visible emission incident.
  - e. Any corrective actions taken to eliminate the abnormal visible emissions.
2. If any visible emissions in excess of 5 percent opacity are observed, corrective actions shall be employed to eliminate any visible emissions in excess of 5 percent opacity, these actions shall also be noted in the operations log.
- 3.. The permittee shall properly install, operate, and maintain equipment to monitor the pressure drop across the baghouse while the emissions unit is 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.
4. The permittee shall properly install, operate and maintain equipment to continuously monitor and record the pH of the scrubber liquor while the emissions unit is in operation. The pH monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

The permittee shall collect and record the following information each day:

- a. The pH of the scrubber liquor, on a per shift basis.
  - b. A log or record of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.
5. The permittee shall maintain monthly records of the following information:
- a. The operating hours for each month.
  - b. The isoset sand cores produced for each month.
  - c. The rolling, 12-month summation of the VOC emissions.

- d. Beginning after the first 12 calendar months of operation following issuance of this permit, the rolling, 12-month summation of the operating hours.
- e. Beginning after the first 12 calendar months of operation following issuance of this permit, the rolling, 12-month summation of the isoset sand cores produced for this emissions unit as well as facility-wide.

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

Also, during the first 12 calendar months of operation following issuance of this permit, the permittee shall record the cumulative isoset sand cores produced facility-wide for each calendar month.

#### **D. Reporting Requirements**

- 1. The permittee shall submit pressure drop deviation (excursion) reports that identify all periods of time during which the pressure drop across the baghouse did not comply with the allowable range specified above.
- 2. The permittee shall submit pH deviation (excursion) reports that identify all periods of time during which the scrubber liquor pH did not comply with the pH requirements specified above.
- 3. The permittee shall submit deviation (excursion) reports which identify:
  - a. All days during which any abnormal visible fugitive particulate emissions were observed escaping from the building containing this emissions unit.
  - b. Visible emissions in excess of 5 percent opacity.
  - c. Describe any corrective actions taken to eliminate the abnormal visible fugitive particulate emissions, or visible emissions greater than 5 percent opacity.
- 4. If no visible emissions exceeded 5 percent opacity, and no unusual visible emissions were observed during the reporting period, the permittee shall submit a report which states no visible emissions exceeding 5 percent opacity, and no unusual visible emissions were observed during the reporting period.
- 5. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling, 12 month operating hours restriction and, for the first 12 calendar months of operation following issuance of this permit, all exceedances of the maximum allowable cumulative operating hours, based on the terms in II.B.7 and 9.

6. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling, 12 month isoset sand cores produced facility-wide limitation and, for the first 12 calendar months of operation following issuance of this permit, all exceedances of the maximum allowable cumulative isoset sand cores produced facility-wide, based on the terms in II.B.8 and 9.
7. These deviation (excursion) reports shall be submitted in accordance with the requirements specified in General Term and Condition A.2 of this permit.
8. The permittee shall also submit annual reports which specify the total VOC emissions from this emissions unit for the previous calendar year. These reports shall be submitted by January 31 of each year.

**E. Testing Requirements**

1. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:
  - a.. The emission testing shall be conducted within 3 months after issuance of the permit.
  - b. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission rate(s) for particulates, sulfur dioxides, and volatile organic compounds.
  - c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s):

<b>Pollutant</b>	<b>USEPA Approved Test Methods</b>
particulates	Methods 1 thru 5 of 40 <u>CFR</u> Part 60, Appendix A
sulfur dioxide	Methods 1 thru4 and 6 of 40 <u>CFR</u> Part 60, Appendix A
volatile organic compounds	Methods 1 thru 4 and 25 or 25A of 40 <u>CFR</u> Part 60, Appendix A

The test method(s) which must be employed to demonstrate compliance with the capture efficiency and control efficiency limitations for particulates and sulfur dioxides are the following:

- i. The capture efficiency shall be determined using the procedure for the determination of capture efficiency in accordance with the USEPA’s “Guidelines for Determining Capture Efficiency,”dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and

validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.) .

- ii. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures (or the approved alternative test protocol) as approved by the appropriate Ohio EPA District Office or local air agency.

Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.

- d.. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the appropriate Ohio EPA District Office or local air agency.

Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. 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 District Office's or local air agency's refusal to accept the results of the emission test(s).

Personnel from the appropriate Ohio EPA District Office or local air agency 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 and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the appropriate Ohio EPA District Office or local air agency.

2. Compliance with the emission limitations in sections A.1 and A.2 of these terms and conditions shall be determined in accordance with the following methods:

a. Emission Limitation:

2.55 pounds per hour of combined stack PE for all six core machines.

9.2 tons per year of combined stack PE for all six core machines.

Applicable Compliance Method:

Compliance with the pound per hour emission limitation shall be obtained by stack testing in accordance with methods 1 thru 5, 40 CFR 60, Appendix A, as required by sections E.1.a through E.1.d of this permit. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA if necessary.

Compliance with the tons per year particulate emission limitation shall be demonstrated by multiplying the average hourly emission rate obtained from 40 CFR 60, Appendix A, Methods 1-5 test results and multiplying them by the number hours the emissions unit operated during the year.

b. Emission Limitation:

0.24 pound per hour of SO<sub>2</sub> for all six core machines

0.9 ton per year of SO<sub>2</sub> for all six core machines

Applicable Compliance Method:

Compliance with the pound per hour emission limitation shall be obtained by stack testing in accordance with methods 1 thru 4 and 6, 40 CFR 60, Appendix A, as required by sections E.1.a through E.1.d of this permit. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA if necessary.

Compliance with the tons per year SO<sub>2</sub> emission limitation shall be demonstrated by multiplying the average hourly emission rate obtained from the 40 CFR Part 60, Appendix A, Methods 1-4 and 6 test results and multiplying them by the number hours the emissions unit operated during the year.

c. Emission Limitation:

2.55 pound per hour of VOC for all six core machines

9.2 tons per year of VOC for all six core machines

Applicable Compliance Method:

Compliance with the pound per hour emission limitation shall be obtained by stack testing in accordance with methods 1 thru 4 and 25 or 25A, 40 CFR 60, Appendix A, as

required by sections E.1.a through E.1.d of this permit. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA if necessary.

Multiply the volatile organic compounds emission factor obtained during the emission test in pounds of VOC per ton of sand processed in the emissions unit by the total amount of sand recovered.

d. Emission Limitation:

0.27 pound per hour of fugitive particulate emissions for all six core machines  
0.97 ton per year of fugitive particulate emissions for all six core machines

Applicable Compliance Method:

Multiply the particulate emissions factor of 0.3 pound of PE per ton of sand processed by the total amount of sand processed in this emissions unit, and by the estimated capture efficiency of the building 70%. The emission factor for core mixing was obtained from the Ohio RACM, Table 2.7-1, emission factor # 11 for core sand mixing.

Multiply the fugitive PE emission factor obtained above in pounds of PE per ton of sand processed in the emissions unit by the total amount of sand processed.

e. Emission Limitation:

5 % opacity as a 3-minute average of fugitive emissions

Applicable Compliance Method:

OAC rule 3745-17-03(B)(3)

f. Emission Limitation:

No visible particulate emissions from the control device exhaust stack

Applicable Compliance Method:

OAC rule 3745-17-03(B)(4)

**F. Miscellaneous Requirements**

1. Modeling to demonstrate compliance with the Ohio EPA's "Air Toxic Policy" was not necessary because the emissions unit's maximum annual emissions for each toxic compound will be less than 1.0 ton. OAC Chapter 3745-31 requires permittees to apply for and obtain a new or modified permit to install prior to making a "modification" as defined by OAC rule 3745-31-01. The permittee is hereby advised that changes in the composition of the materials, or use of new materials, that would cause the emissions of any pollutant that has a listed TLV to increase to above 1.0 ton per year may require the permittee to apply for and obtain a new permit to install.

**PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. Applicable Emissions Limitations and/or Control Requirements**

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
<p>F009 - core making operations, using sand and Isoset with a SO<sub>2</sub> reactant. Consisting of a day silo, heater/cooler, elevators, six hoppers, six core machines, mixers and conveyors.</p> <p>The particulate emissions are enclosed with an estimated capture efficiency of 99%. The captured emissions are vented to a bag house which has an estimated control efficiency of 99%</p> <p>Overall control efficiency 98%</p> <p>The SO<sub>2</sub> emissions are enclosed by the core machines with an estimated capture efficiency of 99%. The captured emissions are vented to one of two SO<sub>2</sub> scrubber which have an estimated control efficiency of 99%</p> <p>Overall control efficiency 98%</p> <p>This emissions unit produces cores for the entire facility.</p>	<p>OAC rule 3745-31-05(A)(3)</p>	<p>Combined Stack Emissions from the control device stacks for all six machines:</p> <p>Volatile Organic Compounds (VOC) emissions shall not exceed 2.55 pound per hour and 9.2 tons per year.</p> <p>Particulate emissions (PE) shall not exceed *0.09 pound per hour and 0.3 ton per year.</p> <p>Fugitive Emissions for all six core machines: *0.27 pound fugitive particulate emissions, and 0.97 ton per year.</p> <p>* All PE emissions are assumed to be less than ten microns (PM-10).</p> <p>Sulfur dioxide (SO<sub>2</sub>) emissions shall not exceed 0.24 pound per hour and 0.86 ton per year.</p> <p>No Visible emissions from the baghouse exhaust stack.</p> <p>Visible particulate emissions of fugitive dust shall not exceed five</p>

	percent opacity, as a three-minute average, except as specified by rule.
OAC rule 3745-17-07	The requirements of this rule also include compliance with the requirements of OAC rule 3745-35-07(B).
OAC rule 3745-17-08(A)	Less stringent than the requirements of OAC rule 3745-31-05(A)(3).
OAC rule 3745-17-11	See A.2.a below.
OAC Rule 3745-21-07(G)	Less stringent than the requirements of OAC rule 3745-31-05(A)(3).
OAC Rule 3745-35-07(B)	Except per OAC rule 3745-21-07(G)(9)(h), see the requirements of OAC rule 3745-31-05(A)(3). See B.7 thru 10 below.

**2. Additional Terms and Conditions**

- 2.a** The permittee shall employ best available technology that is sufficient to minimize or eliminate visible emissions of fugitive dust.
- 2.b** The hourly allowable pounds of isoset sand cores produced per hour and emission limitations outlined are based upon the emissions unit's Potential to Emit (PTE). Therefore, no records are required to demonstrate compliance with these limits

**B. Operational Restrictions**

- 1. The pressure drop across the scrubber shall be maintained within the range of 2-5 inches of water while the emissions unit is in operation.
- 2. All particulate emissions captured from the core making process of this emissions unit shall be vented to the control device.
- 3. The permittee shall use best engineering practices available to ensure the majority of SO<sub>2</sub> emissions are captured and vented to a SO<sub>2</sub> Scrubber with 99% control efficiency.
- 4. The pH of the scrubber liquor shall be maintained within the range of 7.1-14.

5. The permittee shall not produced more than 1,000 pounds of isoset sand cores per hour in this emissions unit.
6. The permittee shall not operate this emissions unit more than 7,200 hours, based upon a rolling 12-month summation of the operating hours.
7. The permittee shall not produced more than 21,600 tons per year of isoset sand cores produced facility-wide, based upon a rolling 12-month summation of the isoset sand cores produced facility-wide.
8. To ensure enforceability during the first 12 calendar months of operation following the issuance of this permit, the permittee shall not exceed the cumulative operating and isoset sand cores produced facility-wide rates specified in the following table:

<u>Month(s)</u>	<u>Maximum Allowable Cumulative Operating Hours</u>	<u>Maximum Allowable Cumulative sand cores Produced facility-wide (Tons)</u>
1	1200	3600
1-2	2400	7200
1-3	3000	9000
1-4	3600	10800
1-5	4200	12600
1-6	4800	14400
1-7	5400	16200
1-8	6000	18000
1-9	6600	19800
1-10	7200	21600
1-11	7200	21600
1-12	7200	21600

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual operating hours and isoset sand cores produced facility-wide limitations shall be based upon a rolling, 12-month summation of the monthly operating hours and isoset sand cores produced facility-wide.

9. The permittee has agreed to accept limitations on annual operating hours to keep the emissions unit annual facility-wide VOC emissions below 99 tons per year, based upon a rolling 12-month summation of the VOC emissions.

**C. Monitoring and/or Record keeping Requirements**

1. The permittee shall perform daily checks, when the emissions unit is in operation and when the weather conditions allow, for any visible fugitive particulate emissions escaping from the building containing this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:
  - a. The color of the emissions.
  - b. Whether the emissions are representative of normal operations.
  - c. If the emissions are not representative of normal operations, the cause of the abnormal emissions.
  - d. The total duration of any abnormal visible emission incident.
  - e. Any corrective actions taken to eliminate the abnormal visible emissions.
2. If any visible emissions in excess of 5 percent opacity are observed, corrective actions shall be employed to eliminate any visible emissions in excess of 5 percent opacity, these actions shall also be noted in the operations log.
- 3.. The permittee shall properly install, operate, and maintain equipment to monitor the pressure drop across the baghouse while the emissions unit is 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.
4. The permittee shall properly install, operate and maintain equipment to continuously monitor and record the pH of the scrubber liquor while the emissions unit is in operation. The pH monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

The permittee shall collect and record the following information each day:

- a. The pH of the scrubber liquor, on a per shift basis.
  - b. A log or record of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.
5. The permittee shall maintain monthly records of the following information:
- a. The operating hours for each month.
  - b. The isoset sand cores produced for each month.

- c. The rolling, 12-month summation of the VOC emissions.
- d. Beginning after the first 12 calendar months of operation following issuance of this permit, the rolling, 12-month summation of the operating hours.
- e. Beginning after the first 12 calendar months of operation following issuance of this permit, the rolling, 12-month summation of the isoset sand cores produced for this emissions unit as well as facility-wide.

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

Also, during the first 12 calendar months of operation following issuance of this permit, the permittee shall record the cumulative isoset sand cores produced facility-wide for each calendar month.

#### **D. Reporting Requirements**

- 1. The permittee shall submit pressure drop deviation (excursion) reports that identify all periods of time during which the pressure drop across the baghouse did not comply with the allowable range specified above.
- 2. The permittee shall submit pH deviation (excursion) reports that identify all periods of time during which the scrubber liquor pH did not comply with the pH requirements specified above.
- 3. The permittee shall submit deviation (excursion) reports which identify:
  - a. All days during which any abnormal visible fugitive particulate emissions were observed escaping from the building containing this emissions unit.
  - b. Visible emissions in excess of 5 percent opacity.
  - c. Describe any corrective actions taken to eliminate the abnormal visible fugitive particulate emissions, or visible emissions greater than 5 percent opacity.
- 4. If no visible emissions exceeded 5 percent opacity, and no unusual visible emissions were observed during the reporting period, the permittee shall submit a report which states no visible emissions exceeding 5 percent opacity, and no unusual visible emissions were observed during the reporting period.
- 5. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling, 12 month operating hours restriction and, for the first 12 calendar months of operation following issuance of this permit, all exceedances of the maximum allowable cumulative operating hours, based on the terms in II.B.7 and 9.

6. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling, 12 month isoset sand cores produced facility-wide limitation and, for the first 12 calendar months of operation following issuance of this permit, all exceedances of the maximum allowable cumulative isoset sand cores produced facility-wide, based on the terms in II.B.8 and 9.
7. These deviation (excursion) reports shall be submitted in accordance with the requirements specified in General Term and Condition A.2 of this permit.
8. The permittee shall also submit annual reports which specify the total VOC emissions from this emissions unit for the previous calendar year. These reports shall be submitted by January 31 of each year.

**E. Testing Requirements**

1. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:
  - a.. The emission testing shall be conducted within 3 months after issuance of the permit.
  - b. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission rate(s) for particulates, sulfur dioxides, and volatile organic compounds.
  - c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s):

<b>Pollutant</b>	<b>USEPA Approved Test Methods</b>
particulates	Methods 1 thru 5 of 40 <u>CFR</u> Part 60, Appendix A
sulfur dioxide	Methods 1 thru 4 and 6 of 40 <u>CFR</u> Part 60, Appendix A
volatile organic compounds	Methods 1 thru 4 and 25 or 25A of 40 <u>CFR</u> Part 60, Appendix A

The test method(s) which must be employed to demonstrate compliance with the capture efficiency and control efficiency limitations for particulates and sulfur dioxides are the following:

- i. The capture efficiency shall be determined using the procedure for the determination of capture efficiency in accordance with the USEPA’s “Guidelines for Determining Capture Efficiency,” dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and

validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.) .

- ii. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures (or the approved alternative test protocol) as approved by the appropriate Ohio EPA District Office or local air agency.

Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.

- d.. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the appropriate Ohio EPA District Office or local air agency.

Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. 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 District Office's or local air agency's refusal to accept the results of the emission test(s).

Personnel from the appropriate Ohio EPA District Office or local air agency 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 and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the appropriate Ohio EPA District Office or local air agency.

2. Compliance with the emission limitations in sections A.1 and A.2 of these terms and conditions shall be determined in accordance with the following methods:

a. Emission Limitation:

2.55 pounds per hour of combined stack PE for all six core machines.

9.2 tons per year of combined stack PE for all six core machines.

Applicable Compliance Method:

Compliance with the pound per hour emission limitation shall be obtained by stack testing in accordance with methods 1 thru 5, 40 CFR 60, Appendix A, as required by sections E.1.a through E.1.d of this permit. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA if necessary.

Compliance with the tons per year particulate emission limitation shall be demonstrated by multiplying the average hourly emission rate obtained from 40 CFR 60, Appendix A, Methods 1-5 test results and multiplying them by the number hours the emissions unit operated during the year.

b. Emission Limitation:

0.24 pound per hour of SO<sub>2</sub> for all six core machines

0.9 ton per year of SO<sub>2</sub> for all six core machines

Applicable Compliance Method:

Compliance with the pound per hour emission limitation shall be obtained by stack testing in accordance with methods 1 thru 4 and 6, 40 CFR 60, Appendix A, as required by sections E.1.a through E.1.d of this permit. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA if necessary.

Compliance with the tons per year SO<sub>2</sub> emission limitation shall be demonstrated by multiplying the average hourly emission rate obtained from the 40 CFR Part 60, Appendix A, Methods 1-4 and 6 test results and multiplying them by the number hours the emissions unit operated during the year.

c. Emission Limitation:

2.55 pound per hour of VOC for all six core machines

9.2 tons per year of VOC for all six core machines

Applicable Compliance Method:

Compliance with the pound per hour emission limitation shall be obtained by stack testing in accordance with methods 1 thru 4 and 25 or 25A, 40 CFR 60, Appendix A, as

required by sections E.1.a through E.1.d of this permit. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA if necessary.

Multiply the volatile organic compounds emission factor obtained during the emission test in pounds of VOC per ton of sand processed in the emissions unit by the total amount of sand recovered.

d.. Emission Limitation:

0.27 pound per hour of fugitive particulate emissions for all six core machines  
0.97 ton per year of fugitive particulate emissions for all six core machines

Applicable Compliance Method:

Multiply the particulate emissions factor of 0.3 pound of PE per ton of sand processed by the total amount of sand processed in this emissions unit, and by the estimated capture efficiency of the building 70%. The emission factor for core mixing was obtained from the Ohio RACM, Table 2.7-1, emission factor # 11 for core sand mixing.

Multiply the fugitive PE emission factor obtained above in pounds of PE per ton of sand processed in the emissions unit by the total amount of sand processed.

e. Emission Limitation:

5 % opacity as a 3-minute average of fugitive emissions

Applicable Compliance Method:

OAC rule 3745-17-03(B)(3)

f. Emission Limitation:

No visible particulate emissions from the control device exhaust stack

Applicable Compliance Method:

OAC rule 3745-17-03(B)(4)

**F. Miscellaneous Requirements**

1. Modeling to demonstrate compliance with the Ohio EPA's "Air Toxic Policy" was not necessary because the emissions unit's maximum annual emissions for each toxic compound will be less than 1.0 ton. OAC Chapter 3745-31 requires permittees to apply for and obtain a new or modified permit to install prior to making a "modification" as defined by OAC rule 3745-31-01. The permittee is hereby advised that changes in the composition of the materials, or use of new materials, that would cause the emissions of any pollutant that has a listed TLV to increase to above 1.0 ton per year may require the permittee to apply for and obtain a new permit to install.

**PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. Applicable Emissions Limitations and/or Control Requirements**

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
<p>F010 - core making operations, using sand and Isoset with a SO<sub>2</sub> reactant. Consisting of a day silo, heater/cooler, elevators, six hoppers, six core machines, mixers and conveyors.</p> <p>The particulate emissions are enclosed with an estimated capture efficiency of 99%. The captured emissions are vented to a bag house which has an estimated control efficiency of 99%</p> <p>Overall control efficiency 99%</p> <p>The SO<sub>2</sub> emissions are enclosed by the core machines with an estimated capture efficiency of 99%. The captured emissions are vented to one of two SO<sub>2</sub> scrubber which have an estimated control efficiency of 99%</p> <p>Overall control efficiency 98%</p> <p>This emissions unit produces cores for the entire facility.</p>	<p>OAC rule 3745-31-05(A)(3)</p>	<p>Combined Stack Emissions from the control device stacks for all six machines:</p> <p>Volatile Organic Compounds (VOC) emissions shall not exceed 2.55 pound per hour and 9.2 tons per year.</p> <p>Particulate emissions (PE) shall not exceed *0.09 pound per hour and 0.3 ton per year.</p> <p>Fugitive Emissions for all six core machines: *0.27 pound fugitive particulate emissions, and 0.97 ton per year.</p> <p>* All PE emissions are assumed to be less than ten microns (PM-10).</p> <p>Sulfur dioxide (SO<sub>2</sub>) emissions shall not exceed 0.24 pound per hour and 0.86 ton per year.</p> <p>No Visible emissions from the baghouse exhaust stack.</p> <p>Visible particulate emissions of fugitive dust shall not exceed five</p>

	percent opacity, as a three-minute average, except as specified by rule.
OAC rule 3745-17-07	The requirements of this rule also include compliance with the requirements of OAC rule 3745-35-07(B).
OAC rule 3745-17-08(A)	Less stringent than the requirements of OAC rule 3745-31-05(A)(3).
OAC rule 3745-17-11	See A.2.a below.
OAC Rule 3745-21-07(G)	Less stringent than the requirements of OAC rule 3745-31-05(A)(3).
OAC Rule 3745-35-07(B)	Except per OAC rule 3745-21-07(G)(9)(h), see the requirements of OAC rule 3745-31-05(A)(3).
	See B.7 thru 10 below.

**2. Additional Terms and Conditions**

- 2.a** The permittee shall employ best available technology that is sufficient to minimize or eliminate visible emissions of fugitive dust.
- 2.b** The hourly allowable pounds of isoset sand cores produced per hour and emission limitations outlined are based upon the emissions unit's Potential to Emit (PTE). Therefore, no records are required to demonstrate compliance with these limits

**B. Operational Restrictions**

1. The pressure drop across the scrubber shall be maintained within the range of 2-5 inches of water while the emissions unit is in operation.
2. All particulate emissions captured from the core making process of this emissions unit shall be vented to the control device.
3. The permittee shall use best engineering practices available to ensure the majority of SO<sub>2</sub> emissions are captured and vented to a SO<sub>2</sub> Scrubber with 99% control efficiency.
4. The pH of the scrubber liquor shall be maintained within the range of 7.1-14.

5. The permittee shall not produced more than 1,000 pounds of isoset sand cores per hour in this emissions unit.
6. The permittee shall not operate this emissions unit more than 7,200 hours, based upon a rolling 12-month summation of the operating hours.
7. The permittee shall not produced more than 21,600 tons per year of isoset sand cores produced facility-wide, based upon a rolling 12-month summation of the isoset sand cores produced facility-wide.
8. To ensure enforceability during the first 12 calendar months of operation following the issuance of this permit, the permittee shall not exceed the cumulative operating and isoset sand cores produced facility-wide rates specified in the following table:

<u>Month(s)</u>	<u>Maximum Allowable Cumulative Operating Hours</u>	<u>Maximum Allowable Cumulative sand cores Produced facility-wide (Tons)</u>
1	1200	3600
1-2	2400	7200
1-3	3000	9000
1-4	3600	10800
1-5	4200	12600
1-6	4800	14400
1-7	5400	16200
1-8	6000	18000
1-9	6600	19800
1-10	7200	21600
1-11	7200	21600
1-12	7200	21600

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual operating hours and isoset sand cores produced facility-wide limitations shall be based upon a rolling, 12-month summation of the monthly operating hours and isoset sand cores produced facility-wide.

9. The permittee has agreed to accept limitations on annual operating hours to keep the emissions unit annual facility-wide VOC emissions below 99 tons per year, based upon a rolling 12-month summation of the VOC emissions.

**C. Monitoring and/or Record keeping Requirements**

1. The permittee shall perform daily checks, when the emissions unit is in operation and when the weather conditions allow, for any visible fugitive particulate emissions escaping from the building containing this emissions unit. The presence or absence of any visible emissions shall

be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

- a. The color of the emissions.
  - b. Whether the emissions are representative of normal operations.
  - c. If the emissions are not representative of normal operations, the cause of the abnormal emissions.
  - d. The total duration of any abnormal visible emission incident.
  - e. Any corrective actions taken to eliminate the abnormal visible emissions.
2. If any visible emissions in excess of 5 percent opacity are observed, corrective actions shall be employed to eliminate any visible emissions in excess of 5 percent opacity, these actions shall also be noted in the operations log.
  - 3.. The permittee shall properly install, operate, and maintain equipment to monitor the pressure drop across the baghouse while the emissions unit is 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.
  4. The permittee shall properly install, operate and maintain equipment to continuously monitor and record the pH of the scrubber liquor while the emissions unit is in operation. The pH monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

The permittee shall collect and record the following information each day:

- a. The pH of the scrubber liquor, on a per shift basis.
  - b. A log or record of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.
5. The permittee shall maintain monthly records of the following information:
    - a. The operating hours for each month.
    - b. The isoset sand cores produced for each month.
    - c. The rolling, 12-month summation of the VOC emissions.
    - d. Beginning after the first 12 calendar months of operation following issuance of this permit, the rolling, 12-month summation of the operating hours.

- e. Beginning after the first 12 calendar months of operation following issuance of this permit, the rolling, 12-month summation of the isoset sand cores produced for this emissions unit as well as facility-wide.

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

Also, during the first 12 calendar months of operation following issuance of this permit, the permittee shall record the cumulative isoset sand cores produced facility-wide for each calendar month.

#### **D. Reporting Requirements**

1. The permittee shall submit pressure drop deviation (excursion) reports that identify all periods of time during which the pressure drop across the baghouse did not comply with the allowable range specified above.
2. The permittee shall submit pH deviation (excursion) reports that identify all periods of time during which the scrubber liquor pH did not comply with the pH requirements specified above.
3. The permittee shall submit deviation (excursion) reports which identify:
  - a. All days during which any abnormal visible fugitive particulate emissions were observed escaping from the building containing this emissions unit.
  - b. Visible emissions in excess of 5 percent opacity.
  - c. Describe any corrective actions taken to eliminate the abnormal visible fugitive particulate emissions, or visible emissions greater than 5 percent opacity.
4. If no visible emissions exceeded 5 percent opacity, and no unusual visible emissions were observed during the reporting period, the permittee shall submit a report which states no visible emissions exceeding 5 percent opacity, and no unusual visible emissions were observed during the reporting period.
5. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling, 12 month operating hours restriction and, for the first 12 calendar months of operation following issuance of this permit, all exceedances of the maximum allowable cumulative operating hours, based on the terms in II.B.7 and 9.
6. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling, 12 month isoset sand cores produced facility-wide limitation and, for the first 12 calendar

months of operation following issuance of this permit, all exceedances of the maximum allowable cumulative isoset sand cores produced facility-wide, based on the terms in II.B.8 and 9.

7. These deviation (excursion) reports shall be submitted in accordance with the requirements specified in General Term and Condition A.2 of this permit.
8. The permittee shall also submit annual reports which specify the total VOC emissions from this emissions unit for the previous calendar year. These reports shall be submitted by January 31 of each year.

**E. Testing Requirements**

1. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:
  - a.. The emission testing shall be conducted within 3 months after issuance of the permit.
  - b. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission rate(s) for particulates, sulfur dioxides, and organic compounds.
  - c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s):

Pollutant	USEPA Approved Test Methods
particulates	Methods 1 thru 5 of 40 <u>CFR</u> Part 60, Appendix A
sulfur dioxide	Methods 1 thru4 and 6 of 40 <u>CFR</u> Part 60, Appendix A
organic compounds	Methods 1 thru 4 and 25 or 25A of 40 <u>CFR</u> Part 60, Appendix A

The test method(s) which must be employed to demonstrate compliance with the capture efficiency and control efficiency limitations for particulates and sulfur dioxides are the following:

- i. The capture efficiency shall be determined using the procedure for the determination of capture efficiency in accordance with the USEPA’s “Guidelines for Determining Capture Efficiency,” dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and

validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.) .

- ii. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures (or the approved alternative test protocol) as approved by the appropriate Ohio EPA District Office or local air agency.

Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.

- d.. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the appropriate Ohio EPA District Office or local air agency.

Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. 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 District Office's or local air agency's refusal to accept the results of the emission test(s).

Personnel from the appropriate Ohio EPA District Office or local air agency 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 and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the appropriate Ohio EPA District Office or local air agency.

- 2. Compliance with the emission limitations in sections A.1 and A.2 of these terms and conditions shall be determined in accordance with the following methods:

- a. Emission Limitation:

2.55 pounds per hour of combined stack PE for all six core machines.

9.2 tons per year of combined stack PE for all six core machines.

Applicable Compliance Method:

Compliance with the pound per hour emission limitation shall be obtained by stack testing in accordance with methods 1 thru 5, 40 CFR 60, Appendix A, as required by sections E.1.a through E.1.d of this permit. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA if necessary.

Compliance with the tons per year particulate emission limitation shall be demonstrated by multiplying the average hourly emission rate obtained from 40 CFR 60, Appendix A, Methods 1-5 test results and multiplying them by the number hours the emissions unit operated during the year.

b. Emission Limitation:

0.24 pound per hour of SO<sub>2</sub> for all six core machines

0.9 ton per year of SO<sub>2</sub> for all six core machines

Applicable Compliance Method:

Compliance with the pound per hour emission limitation shall be obtained by stack testing in accordance with methods 1 thru 4 and 6, 40 CFR 60, Appendix A, as required by sections E.1.a through E.1.d of this permit. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA if necessary.

Compliance with the tons per year SO<sub>2</sub> emission limitation shall be demonstrated by multiplying the average hourly emission rate obtained from the 40 CFR Part 60, Appendix A, Methods 1-4 and 6 test results and multiplying them by the number hours the emissions unit operated during the year.

c. Emission Limitation:

2.55 pound per hour of VOC for all six core machines

9.2 tons per year of VOC for all six core machines

Applicable Compliance Method:

Compliance with the pound per hour emission limitation shall be obtained by stack testing in accordance with methods 1 thru 4 and 25 or 25A, 40 CFR 60, Appendix A, as required by sections E.1.a through E.1.d of this permit. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA if necessary.

Multiply the volatile organic compounds emission factor obtained during the emission test in pounds of VOC per ton of sand processed in the emissions unit by the total amount of sand recovered.

d. Emission Limitation:

0.27 pound per hour of fugitive particulate emissions for all six core machines  
9.2 tons per year of fugitive particulate emissions for all six core machines

Applicable Compliance Method:

Multiply the particulate emissions factor of 0.3 pound of PE per ton of sand processed by the total amount of sand processed in this emissions unit, and by the estimated capture efficiency of the building 70%. The emission factor for core mixing was obtained from the Ohio RACM, Table 2.7-1, emission factor # 11 for core sand mixing.

Multiply the fugitive PE emission factor obtained above in pounds of PE per ton of sand processed in the emissions unit by the total amount of sand processed.

e. Emission Limitation:

5 % opacity as a 3-minute average of fugitive emissions

Applicable Compliance Method:

OAC rule 3745-17-03(B)(3)

f. Emission Limitation:

No visible particulate emissions from the control device exhaust stack

Applicable Compliance Method:

OAC rule 3745-17-03(B)(4)

**F. Miscellaneous Requirements**

1. Modeling to demonstrate compliance with the Ohio EPA's "Air Toxic Policy" was not necessary because the emissions unit's maximum annual emissions for each toxic compound will be less than 1.0 ton. OAC Chapter 3745-31 requires permittees to apply for and obtain a new or modified permit to install prior to making a "modification" as defined by OAC rule 3745-31-01. The permittee is hereby advised that changes in the composition of the materials, or use of new materials, that would cause the emissions of any pollutant that has a listed TLV to increase to above 1.0 ton per year may require the permittee to apply for and obtain a new permit to install.

**PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. Applicable Emissions Limitations and/or Control Requirements**

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
<p>F011 - core making operations, using sand and Isoset with a SO<sub>2</sub> reactant. Consisting of a day silo, heater/cooler, elevators, six hoppers, six core machines, mixers and conveyors.</p> <p>The particulate emissions are enclosed with an estimated capture efficiency of 99%. The captured emissions are vented to a bag house which has an estimated control efficiency of 99%</p> <p>Overall control efficiency 98%</p> <p>The SO<sub>2</sub> emissions are enclosed by the core machines with an estimated capture efficiency of 99%. The captured emissions are vented to one of two SO<sub>2</sub> scrubber which have an estimated control efficiency of 99%</p> <p>Overall control efficiency 98%</p> <p>This emissions unit produces cores for the entire facility.</p>	<p>OAC rule 3745-31-05(A)(3)</p>	<p>Combined Stack Emissions from the control device stacks for all six machines:</p> <p>Volatile Organic Compounds (VOC) emissions shall not exceed 2.55 pound per hour and 9.2 tons per year.</p> <p>Particulate emissions (PE) shall not exceed *0.09 pound per hour and 0.3 ton per year.</p> <p>Fugitive Emissions for all six core machines: *0.27 pound fugitive particulate emissions, and 0.97 ton per year.</p> <p>* All PE emissions are assumed to be less than ten microns (PM-10).</p> <p>Sulfur dioxide (SO<sub>2</sub>) emissions shall not exceed 0.24 pound per hour and 0.86 ton per year.</p> <p>No Visible emissions from the baghouse exhaust stack.</p> <p>Visible particulate emissions of fugitive dust shall not exceed five</p>

	percent opacity, as a three-minute average, except as specified by rule.
OAC rule 3745-17-07	The requirements of this rule also include compliance with the requirements of OAC rule 3745-35-07(B).
OAC rule 3745-17-08(A)	Less stringent than the requirements of OAC rule 3745-31-05(A)(3).
OAC rule 3745-17-11	See A.2.a below.
OAC Rule 3745-21-07(G)	Less stringent than the requirements of OAC rule 3745-31-05(A)(3).
OAC Rule 3745-35-07(B)	Except per OAC rule 3745-21-07(G)(9)(h), see the requirements of BAT and OAC rule 3745-31-05. See B.7 thru 10 below.

**2. Additional Terms and Conditions**

- 2.a** The permittee shall employ best available technology that is sufficient to minimize or eliminate visible emissions of fugitive dust.
- 2.b** The hourly allowable pounds of isoset sand cores produced per hour and emission limitations outlined are based upon the emissions unit's Potential to Emit (PTE). Therefore, no records are required to demonstrate compliance with these limits

**B. Operational Restrictions**

- 1. The pressure drop across the scrubber shall be maintained within the range of 2-5 inches of water while the emissions unit is in operation.
- 2. All particulate emissions captured from the core making process of this emissions unit shall be vented to the control device.
- 3. The permittee shall use best engineering practices available to ensure the majority of SO<sub>2</sub> emissions are captured and vented to a SO<sub>2</sub> Scrubber with 99% control efficiency.

4. The pH of the scrubber liquor shall be maintained within the range of 7.1-14.
5. The permittee shall not produced more than 1,000 pounds of isoset sand cores per hour in this emissions unit.
6. The permittee shall not operate this emissions unit more than 7,200 hours, based upon a rolling 12-month summation of the operating hours.
7. The permittee shall not produced more than 21,600 tons per year of isoset sand cores produced facility-wide, based upon a rolling 12-month summation of the isoset sand cores produced facility-wide.
8. To ensure enforceability during the first 12 calendar months of operation following the issuance of this permit, the permittee shall not exceed the cumulative operating and isoset sand cores produced facility-wide rates specified in the following table:

<u>Month(s)</u>	<u>Maximum Allowable Cumulative Operating Hours</u>	<u>Maximum Allowable Cumulative sand cores Produced facility-wide (Tons)</u>
1	1200	3600
1-2	2400	7200
1-3	3000	9000
1-4	3600	10800
1-5	4200	12600
1-6	4800	14400
1-7	5400	16200
1-8	6000	18000
1-9	6600	19800
1-10	7200	21600
1-11	7200	21600
1-12	7200	21600

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual operating hours and isoset sand cores produced facility-wide limitations shall be based upon a rolling, 12-month summation of the monthly operating hours and isoset sand cores produced facility-wide.

9. The permittee has agreed to accept limitations on annual operating hours to keep the emissions unit annual facility-wide VOC emissions below 99 tons per year, based upon a rolling 12-month summation of the VOC emissions.

### C. Monitoring and/or Record keeping Requirements

1. The permittee shall perform daily checks, when the emissions unit is in operation and when the weather conditions allow, for any visible fugitive particulate emissions escaping from the building containing this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:
  - a. The color of the emissions.
  - b. Whether the emissions are representative of normal operations.
  - c. If the emissions are not representative of normal operations, the cause of the abnormal emissions.
  - d. The total duration of any abnormal visible emission incident.
  - e. Any corrective actions taken to eliminate the abnormal visible emissions.
2. If any visible emissions in excess of 5 percent opacity are observed, corrective actions shall be employed to eliminate any visible emissions in excess of 5 percent opacity, these actions shall also be noted in the operations log.
- 3.. The permittee shall properly install, operate, and maintain equipment to monitor the pressure drop across the baghouse while the emissions unit is 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.
4. The permittee shall properly install, operate and maintain equipment to continuously monitor and record the pH of the scrubber liquor while the emissions unit is in operation. The pH monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

The permittee shall collect and record the following information each day:

- a. The pH of the scrubber liquor, on a per shift basis.
  - b. A log or record of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.
5. The permittee shall maintain monthly records of the following information:
    - a. The operating hours for each month.
    - b. The isoset sand cores produced for each month.
    - c. The rolling, 12-month summation of the VOC emissions.

- d. Beginning after the first 12 calendar months of operation following issuance of this permit, the rolling, 12-month summation of the operating hours.
- e. Beginning after the first 12 calendar months of operation following issuance of this permit, the rolling, 12-month summation of the isoset sand cores produced for this emissions unit as well as facility-wide.

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

Also, during the first 12 calendar months of operation following issuance of this permit, the permittee shall record the cumulative isoset sand cores produced facility-wide for each calendar month.

#### **D. Reporting Requirements**

- 1. The permittee shall submit pressure drop deviation (excursion) reports that identify all periods of time during which the pressure drop across the baghouse did not comply with the allowable range specified above.
- 2. The permittee shall submit pH deviation (excursion) reports that identify all periods of time during which the scrubber liquor pH did not comply with the pH requirements specified above.
- 3. The permittee shall submit deviation (excursion) reports which identify:
  - a. All days during which any abnormal visible fugitive particulate emissions were observed escaping from the building containing this emissions unit.
  - b. Visible emissions in excess of 5 percent opacity.
  - c. Describe any corrective actions taken to eliminate the abnormal visible fugitive particulate emissions, or visible emissions greater than 5 percent opacity.
- 4. If no visible emissions exceeded 5 percent opacity, and no unusual visible emissions were observed during the reporting period, the permittee shall submit a report which states no visible emissions exceeding 5 percent opacity, and no unusual visible emissions were observed during the reporting period.
- 5. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling, 12 month operating hours restriction and, for the first 12 calendar months of operation following issuance of this permit, all exceedances of the maximum allowable cumulative operating hours, based on the terms in II.B.7 and 9.

6. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling, 12 month isoset sand cores produced facility-wide limitation and, for the first 12 calendar months of operation following issuance of this permit, all exceedances of the maximum allowable cumulative isoset sand cores produced facility-wide, based on the terms in II.B.8 and 9.
7. These deviation (excursion) reports shall be submitted in accordance with the requirements specified in General Term and Condition A.2 of this permit.
8. The permittee shall also submit annual reports which specify the total VOC emissions from this emissions unit for the previous calendar year. These reports shall be submitted by January 31 of each year.

**E. Testing Requirements**

1. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:
  - a.. The emission testing shall be conducted within 3 months after issuance of the permit.
  - b. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission rate(s) for particulates, sulfur dioxides, and volatile organic compounds.
  - c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s):

<b>Pollutant</b>	<b>USEPA Approved Test Methods</b>
particulates	Methods 1 thru 5 of 40 <u>CFR</u> Part 60, Appendix A
sulfur dioxide	Methods 1 thru 4 and 6 of 40 <u>CFR</u> Part 60, Appendix A
volatile organic compounds	Methods 1 thru 4 and 25 or 25A of 40 <u>CFR</u> Part 60, Appendix A

The test method(s) which must be employed to demonstrate compliance with the capture efficiency and control efficiency limitations for particulates and sulfur dioxides are the following:

- i. The capture efficiency shall be determined using the procedure for the determination of capture efficiency in accordance with the USEPA’s “Guidelines for Determining Capture Efficiency,” dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and

validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.) .

- ii. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures (or the approved alternative test protocol) as approved by the appropriate Ohio EPA District Office or local air agency.

Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.

- d.. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the appropriate Ohio EPA District Office or local air agency.

Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. 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 District Office's or local air agency's refusal to accept the results of the emission test(s).

Personnel from the appropriate Ohio EPA District Office or local air agency 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 and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the appropriate Ohio EPA District Office or local air agency.

2. Compliance with the emission limitations in sections A.1 and A.2 of these terms and conditions shall be determined in accordance with the following methods:

- a. Emission Limitation:

2.55 pounds per hour of combined stack PE for all six core machines.

9.2 tons per year of combined stack PE for all six core machines.

Applicable Compliance Method:

Compliance with the pound per hour emission limitation shall be obtained by stack testing in accordance with methods 1 thru 5, 40 CFR 60, Appendix A, as required by sections E.1.a through E.1.d of this permit. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA if necessary.

Compliance with the tons per year particulate emission limitation shall be demonstrated by multiplying the average hourly emission rate obtained from 40 CFR 60, Appendix A, Methods 1-5 test results and multiplying them by the number hours the emissions unit operated during the year.

- b. Emission Limitation:

0.24 pound per hour of SO<sub>2</sub> for all six core machines

0.9 ton per year of SO<sub>2</sub> for all six core machines

Applicable Compliance Method:

Compliance with the pound per hour emission limitation shall be obtained by stack testing in accordance with methods 1 thru 4 and 6, 40 CFR 60, Appendix A, as required by sections E.1.a through E.1.d of this permit. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA if necessary.

Compliance with the tons per year SO<sub>2</sub> emission limitation shall be demonstrated by multiplying the average hourly emission rate obtained from the 40 CFR Part 60, Appendix A, Methods 1-4 and 6 test results and multiplying them by the number hours the emissions unit operated during the year.

- c. Emission Limitation:

2.55 pound per hour of VOC for all six core machines

9.2 tons per year of VOC for all six core machines

Applicable Compliance Method:

Compliance with the pound per hour emission limitation shall be obtained by stack testing in accordance with methods 1 thru 4 and 25 or 25A, 40 CFR 60, Appendix A, as required by sections E.1.a through E.1.d of this permit. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA if necessary.

Multiply the volatile organic compounds emission factor obtained during the emission test in pounds of VOC per ton of sand processed in the emissions unit by the total amount of sand recovered.

d. Emission Limitation:

0.27 pound per hour of fugitive particulate emissions for all six core machines  
0.97 ton per year of fugitive particulate emissions for all six core machines

Applicable Compliance Method:

Multiply the particulate emissions factor of 0.3 pound of PE per ton of sand processed by the total amount of sand processed in this emissions unit, and by the estimated capture efficiency of the building 70%. The emission factor for core mixing was obtained from the Ohio RACM, Table 2.7-1, emission factor # 11 for core sand mixing.

Multiply the fugitive PE emission factor obtained above in pounds of PE per ton of sand processed in the emissions unit by the total amount of sand processed.

e. Emission Limitation:

5 % opacity as a 3-minute average of fugitive emissions

Applicable Compliance Method:

OAC rule 3745-17-03(B)(3)

f. Emission Limitation:

No visible particulate emissions from the control device exhaust stack

Applicable Compliance Method:

OAC rule 3745-17-03(B)(4)

**F. Miscellaneous Requirements**

1. Modeling to demonstrate compliance with the Ohio EPA's "Air Toxic Policy" was not necessary because the emissions unit's maximum annual emissions for each toxic compound will be less than 1.0 ton. OAC Chapter 3745-31 requires permittees to apply for and obtain a new or modified permit to install prior to making a "modification" as defined by OAC rule 3745-31-01. The permittee is hereby advised that changes in the composition of the materials, or use of new materials, that would cause the emissions of any pollutant that has a listed TLV to increase to above 1.0 ton per year may require the permittee to apply for and obtain a new permit to install.

**PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. Applicable Emissions Limitations and/or Control Requirements**

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
<p>F012 - core making operations, using sand and Isoset with a SO<sub>2</sub> reactant. Consisting of a day silo, heater/cooler, elevators, six hoppers, six core machines, mixers and conveyors.</p> <p>The particulate emissions are enclosed with an estimated capture efficiency of 99%. The captured emissions are vented to a bag house which has an estimated control efficiency of 99%</p> <p>Overall control efficiency 98%.</p> <p>The SO<sub>2</sub> emissions are enclosed by the core machines with an estimated capture efficiency of 99%. The captured emissions are vented to one of two SO<sub>2</sub> scrubber which have an estimated control efficiency of 99%</p> <p>Overall control efficiency 98%.</p> <p>This emissions unit produces cores for the entire facility.</p>	<p>OAC rule 3745-31-05(A)(3)</p>	<p>Combined Stack Emissions from the control device stacks for all six machines:</p> <p>Volatile Organic Compounds (VOC) emissions shall not exceed 2.55 pound per hour and 9.2 tons per year.</p> <p>Particulate emissions (PE) shall not exceed *0.09 pound per hour and 0.3 ton per year.</p> <p>Fugitive Emissions for all six core machines: *0.27 pound fugitive particulate emissions, and 0.97 ton per year.</p> <p>* All PE emissions are assumed to be less than ten microns (PM-10).</p> <p>Sulfur dioxide (SO<sub>2</sub>) emissions shall not exceed 0.24 pound per hour and 0.86 ton per year.</p> <p>No Visible emissions from the baghouse exhaust stack.</p> <p>Visible particulate emissions of fugitive dust shall not exceed five</p>

OAC rule 3745-17-07	percent opacity, as a three-minute average, except as specified by rule.  The requirements of this rule also include compliance with the requirements of OAC rule 3745-35-07(B).
OAC rule 3745-17-08(A)	Less stringent than the requirements of OAC rule 3745-31-05(A)(3).  See A.2.a below.
OAC rule 3745-17-11	Less stringent than the requirements of OAC rule 3745-31-05(A)(3).
OAC Rule 3745-21-07(G)	Except per OAC rule 3745-21-07(G)(9)(h), see the requirements of OAC rule 3745-31-05(A)(3).
OAC Rule 3745-35-07(B)	See B.7 thru 10 below.

**2. Additional Terms and Conditions**

- 2.a** The permittee shall employ best available technology that is sufficient to minimize or eliminate visible emissions of fugitive dust.
- 2.b** The hourly allowable pounds of isoset sand cores produced per hour and emission limitations outlined are based upon the emissions unit's Potential to Emit (PTE). Therefore, no records are required to demonstrate compliance with these limits

**B. Operational Restrictions**

- 1. The pressure drop across the scrubber shall be maintained within the range of 2-5 inches of water while the emissions unit is in operation.
- 2. All particulate emissions captured from the core making process of this emissions unit shall be vented to the control device.
- 3. The permittee shall use best engineering practices available to ensure the majority of SO<sub>2</sub> emissions are captured and vented to a SO<sub>2</sub> Scrubber with 9% control efficiency.
- 4. The pH of the scrubber liquor shall be maintained within the range of 7.1-14.

5. The permittee shall not produced more than 1,000 pounds of isoset sand cores per hour in this emissions unit.
6. The permittee shall not operate this emissions unit more than 7,200 hours, based upon a rolling 12-month summation of the operating hours.
7. The permittee shall not produced more than 21,600 tons per year of isoset sand cores produced facility-wide, based upon a rolling 12-month summation of the isoset sand cores produced facility-wide.
8. To ensure enforceability during the first 12 calendar months of operation following the issuance of this permit, the permittee shall not exceed the cumulative operating and isoset sand cores produced facility-wide rates specified in the following table:

<u>Month(s)</u>	<u>Maximum Allowable Cumulative Operating Hours</u>	<u>Maximum Allowable Cumulative sand cores Produced facility-wide (Tons)</u>
1	1200	3600
1-2	2400	7200
1-3	3000	9000
1-4	3600	10800
1-5	4200	12600
1-6	4800	14400
1-7	5400	16200
1-8	6000	18000
1-9	6600	19800
1-10	7200	21600
1-11	7200	21600
1-12	7200	21600

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual operating hours and isoset sand cores produced facility-wide limitations shall be based upon a rolling, 12-month summation of the monthly operating hours and isoset sand cores produced facility-wide.

9. The permittee has agreed to accept limitations on annual operating hours to keep the emissions unit annual facility-wide VOC emissions below 99 tons per year, based upon a rolling 12-month summation of the VOC emissions.

**C. Monitoring and/or Record keeping Requirements**

1. The permittee shall perform daily checks, when the emissions unit is in operation and when the weather conditions allow, for any visible fugitive particulate emissions escaping from the building containing this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:
  - a. The color of the emissions.
  - b. Whether the emissions are representative of normal operations.
  - c. If the emissions are not representative of normal operations, the cause of the abnormal emissions.
  - d. The total duration of any abnormal visible emission incident.
  - e. Any corrective actions taken to eliminate the abnormal visible emissions.
2. If any visible emissions in excess of 5 percent opacity are observed, corrective actions shall be employed to eliminate any visible emissions in excess of 5 percent opacity, these actions shall also be noted in the operations log.
- 3.. The permittee shall properly install, operate, and maintain equipment to monitor the pressure drop across the baghouse while the emissions unit is 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.
4. The permittee shall properly install, operate and maintain equipment to continuously monitor and record the pH of the scrubber liquor while the emissions unit is in operation. The pH monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

The permittee shall collect and record the following information each day:

- a. The pH of the scrubber liquor, on a per shift basis.
  - b. A log or record of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.
5. The permittee shall maintain monthly records of the following information:
- a. The operating hours for each month.
  - b. The isoset sand cores produced for each month.

- c. The rolling, 12-month summation of the VOC emissions.
- d. Beginning after the first 12 calendar months of operation following issuance of this permit, the rolling, 12-month summation of the operating hours.
- e. Beginning after the first 12 calendar months of operation following issuance of this permit, the rolling, 12-month summation of the isoset sand cores produced for this emissions unit as well as facility-wide.

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

Also, during the first 12 calendar months of operation following issuance of this permit, the permittee shall record the cumulative isoset sand cores produced facility-wide for each calendar month.

#### **D. Reporting Requirements**

- 1. The permittee shall submit pressure drop deviation (excursion) reports that identify all periods of time during which the pressure drop across the baghouse did not comply with the allowable range specified above.
- 2. The permittee shall submit pH deviation (excursion) reports that identify all periods of time during which the scrubber liquor pH did not comply with the pH requirements specified above.
- 3. The permittee shall submit deviation (excursion) reports which identify:
  - a. All days during which any abnormal visible fugitive particulate emissions were observed escaping from the building containing this emissions unit.
  - b. Visible emissions in excess of 5 percent opacity.
  - c. Describe any corrective actions taken to eliminate the abnormal visible fugitive particulate emissions, or visible emissions greater than 5 percent opacity.
- 4. If no visible emissions exceeded 5 percent opacity, and no unusual visible emissions were observed during the reporting period, the permittee shall submit a report which states no visible emissions exceeding 5 percent opacity, and no unusual visible emissions were observed during the reporting period.
- 5. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling, 12 month operating hours restriction and, for the first 12 calendar months of operation following issuance of this permit, all exceedances of the maximum allowable cumulative operating hours, based on the terms in II.B.7 and 9.

6. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling, 12 month isoset sand cores produced facility-wide limitation and, for the first 12 calendar months of operation following issuance of this permit, all exceedances of the maximum allowable cumulative isoset sand cores produced facility-wide, based on the terms in II.B.8 and 9.
7. These deviation (excursion) reports shall be submitted in accordance with the requirements specified in General Term and Condition A.2 of this permit.
8. The permittee shall also submit annual reports which specify the total VOC emissions from this emissions unit for the previous calendar year. These reports shall be submitted by January 31 of each year.

**E. Testing Requirements**

1. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:
  - a.. The emission testing shall be conducted within 3 months after issuance of the permit.
  - b. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission rate(s) for particulates, sulfur dioxides, and volatile organic compounds.
  - c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s):

<b>Pollutant</b>	<b>USEPA Approved Test Methods</b>
particulates	Methods 1 thru 5 of 40 <u>CFR</u> Part 60, Appendix A
sulfur dioxide	Methods 1 thru 4 and 6 of 40 <u>CFR</u> Part 60, Appendix A
volatile organic compounds	Methods 1 thru 4 and 25 or 25A of 40 <u>CFR</u> Part 60, Appendix A

The test method(s) which must be employed to demonstrate compliance with the capture efficiency and control efficiency limitations for particulates and sulfur dioxides are the following:

- i. The capture efficiency shall be determined using the procedure for the determination of capture efficiency in accordance with the USEPA’s “Guidelines for Determining Capture Efficiency,” dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and

validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.) .

- ii. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures (or the approved alternative test protocol) as approved by the appropriate Ohio EPA District Office or local air agency.

Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.

- d.. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the appropriate Ohio EPA District Office or local air agency.

Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. 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 District Office's or local air agency's refusal to accept the results of the emission test(s).

Personnel from the appropriate Ohio EPA District Office or local air agency 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 and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the appropriate Ohio EPA District Office or local air agency.

2. Compliance with the emission limitations in sections A.1 and A.2 of these terms and conditions shall be determined in accordance with the following methods:

- a. Emission Limitation:

2.55 pounds per hour of combined stack PE for all six core machines.

9.2 tons per year of combined stack PE for all six core machines.

Applicable Compliance Method:

Compliance with the pound per hour emission limitation shall be obtained by stack testing in accordance with methods 1 thru 5, 40 CFR 60, Appendix A, as required by sections E.1.a through E.1.d of this permit. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA if necessary.

Compliance with the tons per year particulate emission limitation shall be demonstrated by multiplying the average hourly emission rate obtained from 40 CFR 60, Appendix A, Methods 1-5 test results and multiplying them by the number hours the emissions unit operated during the year.

- b. Emission Limitation:

0.24 pound per hour of SO<sub>2</sub> for all six core machines

0.9 ton per year of SO<sub>2</sub> for all six core machines

Applicable Compliance Method:

Compliance with the pound per hour emission limitation shall be obtained by stack testing in accordance with methods 1 thru 4 and 6, 40 CFR 60, Appendix A, as required by sections E.1.a through E.1.d of this permit. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA if necessary.

Compliance with the tons per year SO<sub>2</sub> emission limitation shall be demonstrated by multiplying the average hourly emission rate obtained from the 40 CFR Part 60, Appendix A, Methods 1-4 and 6 test results and multiplying them by the number hours the emissions unit operated during the year.

- c. Emission Limitation:

2.55 pound per hour of VOC for all six core machines

9.2 tons per year of VOC for all six core machines

Applicable Compliance Method:

Compliance with the pound per hour emission limitation shall be obtained by stack testing in accordance with methods 1 thru 4 and 25 or 25A, 40 CFR 60, Appendix A, as required by sections E.1.a through E.1.d of this permit. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA if necessary.

Multiply the volatile organic compounds emission factor obtained during the emission test in pounds of VOC per ton of sand processed in the emissions unit by the total amount of sand recovered.

d. Emission Limitation:

0.27 pound per hour of fugitive particulate emissions for all six core machines  
0.97 ton per year of fugitive particulate emissions for all six core machines

Applicable Compliance Method:

Multiply the particulate emissions factor of 0.3 pound of PE per ton of sand processed by the total amount of sand processed in this emissions unit, and by the estimated capture efficiency of the building 70%. The emission factor for core mixing was obtained from the Ohio RACM, Table 2.7-1, emission factor # 11 for core sand mixing.

Multiply the fugitive PE emission factor obtained above in pounds of PE per ton of sand processed in the emissions unit by the total amount of sand processed.

e. Emission Limitation:

5 % opacity as a 3-minute average of fugitive emissions

Applicable Compliance Method:

OAC rule 3745-17-03(B)(3)

f. Emission Limitation:

No visible particulate emissions from the control device exhaust stack

Applicable Compliance Method:

OAC rule 3745-17-03(B)(4)

**F. Miscellaneous Requirements**

1. Modeling to demonstrate compliance with the Ohio EPA's "Air Toxic Policy" was not necessary because the emissions unit's maximum annual emissions for each toxic compound will be less than 1.0 ton. OAC Chapter 3745-31 requires permittees to apply for and obtain a new or modified permit to install prior to making a "modification" as defined by OAC rule 3745-31-01. The permittee is hereby advised that changes in the composition of the materials, or use of new materials, that would cause the emissions of any pollutant that has a listed TLV to increase to above 1.0 ton per year may require the permittee to apply for and obtain a new permit to install.

**PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. Applicable Emissions Limitations and/or Control Requirements**

- The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
<p>P001 - sand reclaimer, therm fire 600 bed calcining unit, with baghouse</p> <p>The emissions are totally enclosed with an estimated capture efficiency of 100%. The captured emissions are vented to the south bag house which has an estimated control efficiency of 99%</p> <p>Overall control efficiency 99%</p> <p>This emissions unit receives and processes core sand for the entire facility.</p>	<p>OAC rule 3745-31-05(A)(3)</p>	<p>Particulate matter (PE) shall not exceed *2.7 pounds per hour and *9.7 tons per year.</p> <p>* All PE emissions are assumed particulate matter less than ten microns (PM-10).</p> <p>Volatile organic compounds (VOC) emissions shall not exceed 7.99 pounds per hour and 28.8 tons per year.</p> <p>From the control device stack exhaust stack, the grain per dry standard cubic foot of exhaust gas shall not exceed 0.02 or no visible particulate emissions (whichever is less stringent).</p> <p>Visible particulate emissions of fugitive dust shall not exceed five percent opacity, as a three-minute average, except as specified by rule.</p> <p>The requirements established pursuant to this rule also include compliance with the requirements of OAC 3745-35-07(B).</p>
	<p>OAC rule 3745-17-07</p>	

OAC rule 3745-17-08	Less stringent than the requirements of OAC rule 3745-31-05(A)(3).
OAC rule 3745-17-11	See 2.a below
OAC Rule 3745-21-07(G)	Less stringent than the requirements of OAC rule 3745-31-05(A)(3).
OAC Rule 3745-35-07(B)	Less stringent than the requirements of OAC rule 3745-31-05(A)(3). See B.5 thru 8 below.

**2. Additional Terms and Conditions**

- 2.a** This facility is located in an appendix A area, therefore paragraph B of OAC rule 3745-17-08 does apply. The Permittee shall employ control measures that are sufficient to minimize or eliminate visible emissions of fugitive dust.
- 2.b** The permittee shall minimize or eliminate visible particulate emissions of fugitive dust by employing best available control measures. These measures shall include, but not be limited to, the following:

  - i. The installation and use of hoods, fans and other equipment to adequately enclose, contain, capture and vent the fugitive dust.
  - ii. The collection efficiency is sufficient to minimize or eliminate visible particulate emissions of fugitive dust at the point(s) of capture to the extent possible with good engineering design.

Nothing in this paragraph shall prohibit the permittee from employing other control measures to ensure compliance, as described below. Ohio EPA may require additional control measures at any or all operations described above if deemed necessary based on observed visible emissions.
- 2.c** For each operation that is not adequately enclosed, the above-identified control measure(s) shall be implemented at all times during operation. If the permittee determines, as a result of the inspection conducted pursuant to the monitoring section of this permit, that additional control measure(s) is (are) necessary to ensure compliance with the above-mentioned applicable requirements, such additional control measures shall be implemented immediately. Any required implementation of the additional control measure(s) shall continue during operation until further observation confirms that use of these additional control measure(s) is unnecessary.

- 2.d** Specific additional control measures shall be determined by the permittee. Such additional control measures may include increased water application, use of chemical dust suppressant, or shut-down of operations. The use of additional control measures shall, at all times, comply with all air, surface water, ground water, solid waste, and hazardous waste laws and regulations.
- 2.e** Implementation of the above-mentioned(A.2.b.) control measure(s) in accordance with the terms and conditions of this permit is appropriate and sufficient to satisfy the requirements of OAC rules 3745-17-08 and 3745-31-05(A)(3).
- 2.f** The hourly allowable pounds of sand and emission limitations outlined are based upon the emissions unit's Potential to Emit (PTE). Therefore, no records are required to demonstrate compliance with these limits

**B. Operational Restrictions**

1. The permittee shall only fire natural gas as fuel in this emissions unit.
2. All particulate emissions captured from this emissions unit shall be vented to a baghouse.
3. The pressure drop across the baghouse shall be maintained within the range of 2-14 inches of water while the emissions unit is in operation.
4. The permittee shall not process more than 6,000 pounds of sand per hour in this emissions unit.
5. The permittee shall not operate this emissions unit more than 7,200 hours per year, based upon a rolling, 12-month summation of the operating hours.
6. The permittee shall not process more than 21,600 tons per year of sand, based upon a rolling, 12-month summation of the processed sand.
7. To ensure enforceability during the first 12 calendar months of operation following the issuance of this permit, the permittee shall not exceed the cumulative operating rates specified in the following table:

<u>Month(s)</u>	<u>Maximum Allowable Cumulative Operating Hours</u>	<u>Maximum Allowable Cumulative Sand Processed (Tons)</u>
1	1200	3,600
1-2	2400	6,400
1-3	3000	9,000
1-4	3600	10,800
1-5	4200	12,600
1-6	4800	14,400

1-7	5400	16,200
1-8	6000	18,000
1-9	6600	19,800
1-10	7200	21,600
1-11	7200	21,600
1-12	7200	21,600

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

Also, after the first 12 calendar months of operation following the issuance of this permit, compliance with the annual sand processed per year restriction shall be based upon a rolling, 12-month summation of the monthly processed sand.

8. The permittee has agreed to accept limitations on annual operating hours to keep the emissions unit annual facility-wide VOC emissions below 99 tons per year.

### **C. Monitoring and/or Record keeping Requirements**

1. The permittee shall perform daily checks, when the emissions unit is in operation and when the weather conditions allow, for any visible fugitive particulate emissions escaping from the building containing this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:
  - a. The color of the emissions.
  - b. Whether the emissions are representative of normal operations.
  - c. If the emissions are not representative of normal operations, the cause of the abnormal emissions.
  - d. The total duration of any abnormal visible emission incident.
  - e. Any corrective actions taken to eliminate the abnormal visible emissions.
2. If any visible emissions in excess of 5 percent opacity are observed, corrective actions shall be employed to eliminate any visible emissions in excess of 5 percent opacity, these actions shall also be noted in the operations log.
3. The permittee shall properly install, operate, and maintain equipment to monitor the pressure drop across the baghouse while the emissions unit is 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.

4. The permittee shall maintain monthly records of the following information:
  - a. The operating hours for each month.
  - b. The sand processed for each month.
  - c. The rolling, 12-month summation of the VOC emissions.
  - d. Beginning after the first 12 calendar months of operation following issuance of this permit, the rolling, 12-month summation of the operating hours.
  - e. Beginning after the first 12 calendar months of operation following issuance of this permit, the rolling, 12-month summation of the processed sand for this emissions unit.

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

Also, during the first 12 calendar months of operation following issuance of this permit, the permittee shall record the cumulative processed sand .

#### **D. Reporting Requirements**

1. The permittee shall submit pressure drop deviation (excursion) reports that identify all periods of time during which the pressure drop across the baghouse did not comply with the allowable range specified above.
2. The permittee shall submit deviation (excursion) reports which identify:
  - a. All days during which any abnormal visible fugitive particulate emissions were observed escaping from the building containing this emissions unit.
  - b. Visible emissions in excess of 5 percent opacity.
  - c. Describe any corrective actions taken to eliminate the abnormal visible fugitive particulate emissions, or visible emissions greater than 5 percent opacity.
3. If no visible emissions exceeded 5 percent opacity, and no unusual visible emissions were observed during the reporting period, the permittee shall submit a report which states no visible emissions exceeding 5 percent opacity, and no unusual visible emissions were observed during the reporting period.

4. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling, 12 month operating hours restriction and, for the first 12 calendar months of operation following issuance of this permit, all exceedances of the maximum allowable cumulative operating hours, based on terms II.B.5 and 7.
5. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling, 12 month processed sand limitation and, for the first 12 calendar months of operation following issuance of this permit, all exceedances of the maximum allowable cumulative processed sand, based on terms in II.B.6 and 7.
6. These deviation (excursion) reports shall be submitted in accordance with the requirements specified in General Term and Condition A.2 of this permit.
7. The permittee shall also submit annual reports which specify the total VOC emissions from this emissions unit for the previous calendar year. These reports shall be submitted by January 31 of each year.

**E. Testing Requirements**

1. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:
  - a.. The emission testing shall be conducted within 3 months after issuance of the permit.
  - b. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission rate(s) for particulates, sulfur dioxides, and volatile organic compounds.
  - c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s):

<b>Pollutant</b>	<b>USEPA Approved Test Methods</b>
particulates	Methods 1 thru 5 of 40 <u>CFR</u> Part 60, Appendix A
volatile organic compounds	Methods 1 thru 4 and 25 or 25A of 40 <u>CFR</u> Part 60, Appendix A

The test method(s) which must be employed to demonstrate compliance with the capture efficiency and control efficiency limitations for particulates are the following:

- i. The capture efficiency shall be determined using the procedure for the determination of capture efficiency in accordance with the USEPA’s “Guidelines

for Determining Capture Efficiency," dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.) .

- ii. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures (or the approved alternative test protocol) as approved by the appropriate Ohio EPA District Office or local air agency.

Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.

- d.. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the appropriate Ohio EPA District Office or local air agency.

Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. 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 District Office's or local air agency's refusal to accept the results of the emission test(s).

Personnel from the appropriate Ohio EPA District Office or local air agency 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 and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the appropriate Ohio EPA District Office or local air agency.

- 2. Compliance with the emission limitations in sections A.1 and A.2 of these terms and conditions shall be determined in accordance with the following methods:

a. Emission Limitation:

2.7 pound per hour of PE  
0.02 grain per dry standard cubic foot of exhaust gas  
9.7 tons per year of PE

Applicable Compliance Method:

Compliance with the pound per hour emission limitation shall be obtained by stack testing in accordance with methods 1 thru 4 and 6, 40 CFR 60, Appendix A, as required by sections E.1.a through E.1.d of this permit. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA if necessary. Compliance with the tons per year particulate emission limitation shall be demonstrated by multiplying the average hourly emission rate obtained from the methods 1 thru 5 test results by the number hours the emissions unit operated during the year.

b. Emission Limitation:

7.99 pounds per hour of VOC  
28.8 tons per year of VOC

Applicable Compliance Method:

Compliance with the pound per hour emission limitation shall be obtained by stack testing in accordance with methods 1 thru 4 and 6, 40 CFR 60, Appendix A, as required by sections E.1.a through E.1.d of this permit. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA if necessary.

Compliance with the tons per year VOC emission limitation shall be demonstrated by multiplying the average hourly emission rate obtained from the methods 1 thru 4 and 25 or 25A test results by the number hours the emissions unit operated during the year.

c. Emission Limitation:

5% opacity as a 3-minute average

Applicable Compliance Method:

OAC rule 3745-17-03(B)(1)

d. Emission Limitation:

No visible particulate emissions from the control device exhaust stack

Applicable Compliance Method:

OAC rule 3745-17-03(B)(4)

**F. Miscellaneous Requirements**

1. Modeling to demonstrate compliance with the Ohio EPA's "Air Toxic Policy" was not necessary because the emissions unit's maximum annual emissions for each toxic compound will be less than 1.0 ton. OAC Chapter 3745-31 requires permittees to apply for and obtain a new or modified permit to install prior to making a "modification" as defined by OAC rule 3745-31-01. The permittee is hereby advised that changes in the composition of the materials, or use of new materials, that would cause the emissions of any pollutant that has a listed TLV to increase to above 1.0 ton per year may require the permittee to apply for and obtain a new permit to install.

**PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. Applicable Emissions Limitations and/or Control Requirements**

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
P901 - sand handling equipment, transporters, conveyors, vibramills, elevator and 4 silos, with baghouse.	OAC rule 3745-31-05(A)(3)	Combined Stack Particulate Matter (PE) shall not exceed *0.77 pounds per hour and *2.8 tons per year.  Fugitive Particulate Emissions: 0.32 lbs/hr fugitive PE 1.13 tons/yr fugitive PE  * All PE emissions are assumed to be less than particulate matter less than ten microns (PM-10).  From the control device stack exhaust stack, the grain per dry standard cubic foot of exhaust gas shall not exceed 0.03 or no visible particulate emissions, (whichever is less stringent).  Visible particulate emissions of fugitive dust shall not exceed five percent opacity, as a three-minute average, except as specified by rule.  The requirements established pursuant to this rule also include compliance with the requirements of OAC 3745-35-07(B).

OAC rule 3745-17-07	Less stringent than the requirements of OAC rule 3745-31-05(A)(3).
OAC rule 3745-17-08	See 2.a below
OAC rule 3745-17-11	Less stringent than the requirements of OAC rule 3745-31-05(A)(3).
OAC Rule 3745-35-07(B)	See B.4 thru 7 below.

**2. Additional Terms and Conditions**

**2.a** This facility is located in an appendix A area, therefore paragraph B of OAC rule 3745-17-08 does apply. The Permittee shall employ control measures that are sufficient to minimize or eliminate visible emissions of fugitive dust.

**2.b** The permittee shall minimize or eliminate visible particulate emissions of fugitive dust by employing best available control measures. These measures shall include, but not be limited to, the following:

- i. The installation and use of hoods, fans and other equipment to adequately enclose, contain, capture and vent the fugitive dust; and
- ii. The collection efficiency is sufficient to minimize or eliminate visible particulate emissions of fugitive dust at the point(s) of capture to the extent possible with good engineering design.

Nothing in this paragraph shall prohibit the permittee from employing other control measures to ensure compliance, as described below. Ohio EPA may require additional control measures at any or all operations described above if deemed necessary based on observed visible emissions.

**2.c** For each operation that is not adequately enclosed, the above-identified control measure(s) shall be implemented at all times during operation. If the permittee determines, as a result of the inspection conducted pursuant to the monitoring section of this permit, that additional control measure(s) is (are) necessary to ensure compliance with the above-mentioned applicable requirements, such additional control measures shall be implemented immediately. Any required implementation of the additional control measure(s) shall continue during operation until further observation confirms that use of these additional control measure(s) is unnecessary.

**2.d** Specific additional control measures shall be determined by the permittee. Such additional control measures may include increased water application, use of chemical dust suppressant, or shut-down of operations. The use of additional control measures

shall, at all times, comply with all air, surface water, ground water, solid waste, and hazardous waste laws and regulations.

- 2.e** Implementation of the above-mentioned(A.2.b.) control measure(s) in accordance with the terms and conditions of this permit is appropriate and sufficient to satisfy the requirements of OAC rules 3745-17-08 and 3745-31-05(A)(3).
- 2.f** The hourly allowable pounds of sand and emission limitations are based upon the emissions unit's Potential to Emit (PTE). Therefore, no records are required to demonstrate compliance with these limits

**B. Operational Restrictions**

1. All particulate emissions captured from the sand storage process for this emissions unit shall be vented to a baghouse.
2. The pressure drop across the baghouse shall be maintained within the range of 2-14 inches of water while the emissions unit is in operation.
3. The permittee shall not process more than 7,000 pounds of sand per hour in this emissions unit.
4. The permittee shall not operate this emissions unit more than 7,200 hours per year, based upon a rolling, 12-month summation of the operating hours.
5. The permittee shall not process more than 25,200 tons per year, based upon a rolling, 12-month summation of the processed sand.
6. To ensure enforceability during the first 12 calendar months of operation following the issuance of this permit, the permittee shall not exceed the cumulative operating rates specified in the following table:

<u>Month(s)</u>	<u>Maximum Allowable Cumulative Operating Hours</u>	<u>Maximum Allowable Cumulative Sand Processed (Tons)</u>
1	1200	4,200
1-2	2400	8,400
1-3	3000	10,500
1-4	3600	12,600
1-5	4200	14,700
1-6	4800	16,800
1-7	5400	18,900
1-8	6000	21,000
1-9	6600	23,100
1-10	7200	25,200

1-11	7200	25,200
1-12	7200	25,200

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

Also, after the first 12 calendar months of operation following the issuance of this permit, compliance with the annual processed sand restriction shall be based upon a rolling, 12-month summation of the monthly processed sand.

7. The permittee has agreed to accept limitations on annual operating hours to keep the emissions unit annual facility-wide VOC emissions below 99 tons per year.

**C. Monitoring and/or record keeping Requirements**

1. The permittee shall perform **daily** checks, when the emissions unit is in operation and when the weather conditions allow, for any visible fugitive particulate emissions escaping from the building containing this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:
  - a. The color of the emissions.
  - b. Whether the emissions are representative of normal operations.
  - c. If the emissions are not representative of normal operations, the cause of the abnormal emissions.
  - d. The total duration of any abnormal visible emission incident.
  - e. Any corrective actions taken to eliminate the abnormal visible emissions.
2. If any visible emissions in excess of 5 percent opacity are observed, corrective actions shall be employed to eliminate any visible emissions in excess of 5 percent opacity, these actions shall also be noted in the operations log.
3. The permittee shall properly install, operate, and maintain equipment to monitor the pressure drop across the baghouse while the emissions unit is 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.
4. The permittee shall maintain monthly records of the following information:
  - a. The operating hours for each month.
  - b. The sand processed for each month.

- c. The rolling, 12-month summation of the VOC emissions.
- d. Beginning after the first 12 calendar months of operation following issuance of this permit, the rolling, 12-month summation of the operating hours.
- e. Beginning after the first 12 calendar months of operation following issuance of this permit, the rolling, 12-month summation of the processed sand for this emissions unit.

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

Also, during the first 12 calendar months of operation following issuance of this permit, the permittee shall record the cumulative processed sand .

#### **D. Reporting Requirements**

- 1. The permittee shall submit pressure drop deviation (excursion) reports that identify all periods of time during which the pressure drop across the baghouse did not comply with the allowable range specified above.
- 2. The permittee shall submit semiannual written reports which:
  - a. Identify all days during which any abnormal visible fugitive particulate emissions were observed escaping from the building containing this emissions unit.
  - b. Visible emissions in excess of 5 percent opacity.
  - c. Describe any corrective actions taken to eliminate the abnormal visible fugitive particulate emissions, or visible emissions greater than 5 percent opacity.
- 3. If no visible emissions exceeded 5 percent opacity, and no unusual visible emissions were observed during the reporting period, the permittee shall submit a report which states no visible emissions exceeding 5 percent opacity, and no unusual visible emissions were observed during the reporting period.
- 4. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling, 12 month operating hours restriction and, for the first 12 calendar months of operation following issuance of this permit, all exceedances of the maximum allowable cumulative operating hours, based on terms in II.B.5 and 6.
- 5. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling, 12 month processed sand limitation and, for the first 12 calendar months of operation following issuance of this permit, all exceedances of the maximum allowable cumulative processed sand, based on terms in II.B.6 and 7.

- 6. These deviation (excursion) reports shall be submitted in accordance with the requirements specified in General Term and Condition A.2 of this permit.
- 7. The permittee shall also submit annual reports which specify the total VOC emissions from this emissions unit for the previous calendar year. These reports shall be submitted by January 31 of each year.

**E. Testing Requirements**

- 1. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:
  - a.. The emission testing shall be conducted within 3 months after issuance of the permit.
  - b. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission rate(s) for particulates.
  - c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s):

<b>Pollutant</b>	<b>USEPA Approved Test Methods</b>
particulates	Methods 1 thru 5 of 40 <u>CFR</u> Part 60, Appendix A

Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.

- d.. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the appropriate Ohio EPA District Office or local air agency.

Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. 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 District Office's or local air agency's refusal to accept the results of the emission test(s).

Personnel from the appropriate Ohio EPA District Office or local air agency 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 and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s).

The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the appropriate Ohio EPA District Office or local air agency.

2.. Compliance with the emission limitations in sections A.1 and A.2 of these terms and conditions shall be determined in accordance with the following methods:

a. Emission Limitation:

0.77 pound per hour of PE

0.03 grain per dry standard cubic foot of exhaust gas

2.8 tons per year of PE

Applicable Compliance Method:

Compliance with the pound per hour emission limitation shall be obtained by stack testing in accordance with methods 1 thru 4 and 6, 40 CFR 60, Appendix A, as required by sections E.1.a through E.1.d of this permit. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA if necessary.

Compliance with the tons per year particulate emission limitation shall be demonstrated by multiplying the average hourly emission rate obtained from the methods 1 thru 5 test results by the number hours the emissions unit operated during the year.

b. Emission Limitation:

0.32 pound per hour of fugitive PE

1.13 tons per year of fugitive PE

Applicable Compliance Method:

Multiply the particulate emission factors of 0.3 grains of particulate emissions per ton of sand processed by the maximum hourly rate of sand processed, and by the estimated control efficiency of the building of 70%. This particulate emission factors was obtained from Ohio RACM Table 2.18-1, emission factor #6 for sand screening, conveying and handling. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA if necessary.

Compliance with the tons per year fugitive particulate emission limitation shall be demonstrated by multiplying the average hourly emission rate obtained above by the number hours the emissions unit operated during the year.

c. Emission Limitation:

5% opacity as a 3-minute average

Applicable Compliance Method:

OAC rule 3745-17-03(B)(1)

d. Emission Limitation:

no visible particulate emissions from the control device exhaust stack

Applicable Compliance Method:

OAC rule 3745-17-03(B)(4)

**F. Miscellaneous Requirements**

1. Modeling to demonstrate compliance with the Ohio EPA's "Air Toxic Policy" was not necessary because the emissions unit's maximum annual emissions for each toxic compound will be less than 1.0 ton. OAC Chapter 3745-31 requires permittees to apply for and obtain a new or modified permit to install prior to making a "modification" as defined by OAC rule 3745-31-01. The permittee is hereby advised that changes in the composition of the materials, or use of new materials, that would cause the emissions of any pollutant that has a listed TLV to increase to above 1.0 ton per year may require the permittee to apply for and obtain a new permit to install.