

Synthetic Minor Determination and/or  Netting Determination

Permit To Install: **03-17353**

**STAFF DETERMINATION FOR THE APPLICATION TO CONSTRUCT  
UNDER THE PREVENTION OF SIGNIFICANT DETERIORATION REGULATIONS  
FOR THE GM POWERTRAIN GROUP - DEFIANCE FOUNDRY  
DEFIANCE COUNTY, OHIO  
PTI NUMBER 03-17353**

The Clean Air Act and regulations promulgated thereunder require that major air pollution sources undergoing construction or modification comply with all applicable Prevention of Significant Deterioration (PSD) provisions and nonattainment area New Source Review requirements. The federal PSD rules govern emission increases in attainment areas for major sources, which are sources with the potential to emit 250 tons per year or more of any pollutant regulated under the Clean Air Act, or 100 tons per year or more if the source is included in one of 28 source categories. In nonattainment areas, the definition of a major source is one having at least 100 tons per year potential emissions. A major modification is one resulting in a contemporaneous increase in emissions which exceeds the significance level of one or more pollutants. Any changes in actual emissions within a five-year period are considered to be contemporaneous. In addition, Ohio now has incorporated the PSD and NSR requirements by rule under OAC 3745-31.

Both PSD and nonattainment rules require that certain analyses be performed before a facility can obtain a permit authorizing construction of a new source or major modification to a major source. The principal requirements of the PSD regulations are as follows:

- 1) Best Available Control Technology (BACT) review - A detailed engineering review must be performed to ensure that BACT is being installed for the pollutants for which the new source is a major source.
- 2) Ambient Air Quality Review - An analysis must be completed to ensure the continued maintenance of the National Ambient Air Quality Standards (NAAQS) and that any increases in ambient air pollutant concentrations do not exceed the incremental values set pursuant to the Clean Air Act.

For nonattainment areas, the requirements are:

- 1) Lowest Achievable Emissions Rate (LAER) - New major sources must install controls that represent the lowest emission levels (highest control efficiency) that has been achieved in practice.
- 2) The emissions from the new major source must be offset by a reduction of existing emissions of the same pollutant by at least the same amount, and a demonstration must be made that the resulting air quality shows a net air quality benefit. This is more completely described in the Emission Offset Interpretative Ruling as found in Appendix S of 40 CFR Part 51.
- 3) The facility must certify that all major sources owned or operated in the state by the same entity are either in compliance with the existing State Implementation Plan (SIP) or are on an approved schedule resulting in full compliance with the SIP.

For rural ozone nonattainment areas, the requirements are:

- 1) LAER - New major sources must install controls that represent the lowest emissions levels (highest control efficiency) that has been achieved in practice.
- 2) The facility must certify that all major sources owned or operated in the state by the same entity are either in compliance with the existing SIP or are on an approved schedule resulting in full compliance with the SIP.

Finally, New Source Performance Standards (NSPS), SIP emission standards and public participation requirements must be followed in all cases.

### **Site/Facility Description**

The GMC Powertrain - Defiance County (GM Defiance) facility is a Major PSD facility for NO<sub>x</sub>, PM, PM<sub>10</sub> & VOC.

Defiance County is classified as attainment for all pollutants

GM Defiance is a manufacturer of automobile parts. GM Defiance has proposed to install and operate a new Precision Sand Aluminum Casting line at its facility in Defiance Ohio to produce a new generation V-6 engine blocks called High Feature V-6 (HFV6).

## **Project Description**

GM Defiance is proposing the following:

- 1) the shutdown and removal of two lost foam lines (lines 3 & 4);
- 2) the installation a new HFV6 precision sand aluminum casting research & development pilot process;
- 3) the installation of a new HFV6 precision sand aluminum casting production process; and
- 4) the reuse of the current lost foam aluminum reverberatory furnaces and the associated baghouses and regenerative thermal oxidizers (RTOs) for the HFV6 aluminum casting process.

## **Process Description**

The precision sand HFV6 process consists of the following activities:

Molten Aluminum - Molten aluminum is received or melted in the two Receiving furnaces [existing emissions units P424 and P427]. Molten aluminum is then pumped into another furnace (Leveling furnace) [this will be a new installation]. [The Leveling/holding furnace will be electrically heated and not ventilated to the atmosphere.] An electrically heated Launder system will move the molten metal from the Leveling furnace to the Production line and Pilot line pouring stations. [The Laundering system is completely covered during transporting of the molten metal and is not directly exhausted to the atmosphere.]

The Laundering system terminate at the Pump Well electrically-heated furnace (not directly exhausted to the atmosphere). The molten metal is then pumped from the Pump Well furnace through a nozzle into the mold by use of electro magnetic pump.

A salt of chlorine and/or fluorine is added to the molten aluminum either by injection below the metal surfaces or by distributing it on top of the molten metal. This is called fluxing and its purpose is to help extend the life of the furnace refractory and keep the furnace walls clean and remove metal impurities. The waste formed by fluxing is called dross (floats to the top) and is skimmed from the furnace in a process called Drossing.

In addition, hydrogen gas is removed from the molten metal (usually in the Laundering system and the Leveling furnace) before casting. Argon or nitrogen is injected into the molten metal for degassing purposes.

Core Room Activities - The core room activities include sand delivery and transport, coremaking, core machine maintenance, core assembly, cylinder liner cleaning, and final mold assembly.

The HFV6 Precision Sand process employs only core sand. Sand will be delivered via rail or truck and sent, initially, to a receiving station containing 2, 35-ton hoppers. The hoppers will feed a large silo and 2, 60-ton storage bins. The sand in the storage containers will be directed to a 20-ton bin. The sand from the 20-ton bin will be directed into 2, 70-ton sand bins, which will feed the sand mixers located at the core machines.

There will be 6 core machines using sand, resins, and a catalyst to manufacture cores. The Cores will be made using "Cold Box" technology, where sand is first mixed with a 2-part resin. Di-methyl iso-propyl amine (DMIPA) will be added as the catalyst (for resin hardening) for manufacturing the cores. After the cores are made, they will then be placed on a conveyor to be taken to storage racks. About 13 to 16 individual cores are used to assemble the final mold, which resembles a cube or box-shaped structure.

Cleaned cast iron cylinder liners (they provide the appropriate wear surface between the piston outside diameter and the cylinder bore inside diameter) are inserted into the partially assembled core packages. Next, a bottom steel or cast iron chill (to produce rapid cooling of aluminum) is added to the partially assembled core package. Finally,

the large cover core is applied to complete the mold.

Cast Line Operations - Molten aluminum is pumped from the Pump well into the mold. The mold is then set into a cooling conveyor to allow the molten metal to solidify. The mold then enter a shakeout enclosure, where 95% of the core sand is removed.

The castings then move into the Casting Cooling Tunnel. The castings will then be routed to new equipment called the Hershel Hammer & Swing Master. This equipment will remove additional sand using mechanical hammering followed by a rotating and shaking activity. The castings will then be moved to a shot blasting unit. Finally, the aluminum gating system associated with the castings will be removed, after which, the castings are packaged and sent-off site as a product.

Waste Sand Handling - Waste sand will be generated at several places in the process, but mainly at the shakeout. The waste sand will be conveyed to a sand crusher. The crusher will break up the large sand cores into smaller pieces. The crushed waste sand will either be taken off - site for disposal or recycling activity or it will be taken to the plant's landfill for disposal.

Makeup Air Houses - Natural gas-fired make-up air houses will be installed to supply the necessary air for the precision sand area.

## **Applicable Regulations**

There are no 40 CFR Part 60 or 61 rules that might apply to any of the emissions units that are part of this project. Also, 40 CFR Part 63, Subpart RRR, which applies to Secondary Aluminum Production, is not applicable. Pursuant to 40 CFR 63.1503, aluminum die casting, aluminum foundries, and aluminum extrusion facilities are not considered secondary aluminum production facilities if the only materials they melt are clean charge (includes molten aluminum), customer return, or internal scrap, and if they do not operate sweat furnaces, thermal chip dryers, or scrap dryers/delacquering kilns/decoating kilns. Therefore, this facility is not subject to 40 CFR Part 63, Subpart RRR. However 40 CFR Part 63, Subpart EEEEE is applicable to emissions units P264 (iron pour).

### **PSD Applicability**

GM Defiance is currently classified as a PSD "major" stationary source with potential VOC and PM10 emissions exceeding the PSD significance levels. Any "major" stationary source which is proposing emissions of a regulated pollutant in excess of PSD significance levels will be required to undergo a PSD analysis for that particular pollutant.

This project will meet the definition of major modification for PM10 and VOC emissions. However, the net emissions increase for PM10 is below the significance level of 15 tons per year, and, therefore, this project is not considered a major modification for PM10. On the other hand, the net emissions increase for VOC is above the significance level of 40 tons per year. Therefore, this project is considered a major modification for VOC.

Table I shows the Net emissions increase from the proposed project.

<u>Pollutant</u>	<u>Tons per Year Increases</u>	<u>Netting Emissions</u> Tons/year	<u>PSD Trigger</u> tons/year
VOC	<b>125.49</b>	<b>+95.58</b>	<b>40</b>
PM <sub>10</sub>	<b>32.63</b>	-27.43	15
NOx	12.30	-	40
CO	12.30	-	100
SO2	0.07	-	40

Based upon the information above, a PSD review is required for VOC only.

## **Best Available Control Technology (BACT) analysis**

## **BACT Review**

The GM Defiance facility is subject to PSD regulations which mandates a case-by-case BACT analysis be performed for each proposed new or modified emissions unit at which a net increase of VOC will occur (see Table II below). The application used a "top-down" approach to determine an appropriate level of control.

As part of the application for any emissions unit regulated under the PSD requirements, an analysis must be conducted that demonstrates that Best Available Control Technology (BACT) will be employed for every affected pollutant.

**Table II**

<b>Precision Sand Sources Requiring VOC BACT</b>	
Sand Mixing	Shakeout
Core Mixing	Cooling Tunnel
Core Machine Metal Cleaner	Hershel Hammer & Swing Master
Core Storage and Assembly	Degating
Cylinder liner Cleaning Oven	Sand Crusher
Pouring	Waste Sand Handling
Cooling	Air House

## **Summary of BACT Requirements**

BACT is defined as an emission limitation for new or modified sources to be achievable on a case-by-case basis while considering the following three factors:

- 1) Environmental Impact;
- 2) Energy Impact; and
- 3) Economic Impact.

BACT analysis includes air pollution control technologies with the potential to be applied to the emission source for the pollutant under consideration. It is pertinent to point out that BACT must be no less stringent than limitations defined by the standard of a State Implementation Plan, a National Emission Standard for Hazardous Air Pollutants, or a New Source Performance Standard.

The BACT analysis requires a "Top-Down" approach (*NSR Workshop Manual*), which evaluates the control technology with highest efficiency first, and arrives at the final controls in a 5-step process:

- 1) Identifying All Applicable Control Technologies;
- 2) Eliminating Technically Infeasible Control Technologies;
- 3) Ranking Remaining Control Technologies by Control Effectiveness;
- 4) Evaluating Cost Effectiveness of Controls and Document Results; and
- 5) Selecting BACT.

As can be seen from the list above, the final stage of the analysis is the actual selection of the most cost effective air pollution control device. The permitting authority generally sets levels for cost effectiveness. Once a cost-effective control device has been identified for a particular source, that device will be selected as BACT and will be implemented as part of the overall project for that source. If no control systems are deemed to be cost effective, BACT will be no abatement.

## **PROJECT BACT ANALYSIS/ The 5-step BACT process**

### **Step #1 -- Identify All Applicable Control Technologies**

The controls Identified for the emissions units that comprise this project are listed below, in the order of highest to

lowest control efficiency:

- 1) Thermal Oxidation (non-catalytic) (TO)
- 2) Activated Carbon Adsorption
- 3) Wet Scrubbing
- 4) Refrigeration/Condensation

These control devices have been identified as potentially applicable BACT technologies by researching RACT/BACT/LAER Clearinghouse and EPA's NEET Clean Air Technologies Databases, and in-house engineering experience. Each option was evaluated taking into account the source's physical and chemical characteristics of the gas stream to be controlled.

## **Step #2 – Eliminate Technically Infeasible Options**

**Sand mixing** - Low VOC concentration (59 ppmw) renders the use of carbon adsorption, condensation, and wet scrubbing technically infeasible. TO is technically feasible for this source.

**Core Making** - The presence of particulate matter in the exhaust gas stream would result in plugging of the carbon bed. Carbon adsorption is technically infeasible for Core mixing. Low VOC concentration (<1000 ppmw) results in unreasonably low requirement for condensation temperature, making the use of the condensation technology technically infeasible. Wet scrubbing and thermal oxidation are technically feasible.

**Core Machine Metal Cleaner** - High volume of air (>300,000 SCFM) and low concentration (~ 2 ppmw) make this source not conducive to add-on controls. **(BACT is no controls.)**

**Core Box Cleaning Tank** - Low VOC concentration (~ 1 ppmw) makes this source not conducive to add-on controls. **(BACT is no controls.)**

**Core Storage & Assembly** - High volume of air (>300,000 SCFM) and low concentration (~ 8 ppmw) make this source not conducive to add-on controls. **(BACT is no controls.)**

**Cylinder Liner Cleaning Oven** - Only source of VOC emissions is natural gas combustion. Because of the elevated temperatures of the oven exhaust gas stream, carbon adsorption, wet scrubbing, and condensation are not technically feasible. Also, thermal oxidation is not feasible as a combustion source since it will also generate VOC and NOx emissions (ozone precursor). **(BACT is the use of natural gas as fuel.)**

**Pouring** - Low VOC concentration (~ 15 ppmw) renders the use of carbon adsorption, condensation, and wet scrubbing technically infeasible. Thermal oxidation is technically feasible for this source.

**Cooling** - Thermal oxidation will be employed in this source (has the highest abatement efficiency of all technologies).

**Shakeout** - Thermal oxidation will be employed in this source (has the highest abatement efficiency of all technologies).

**Cooling Tunnel** - Low VOC concentration (~ 22 ppmw) renders the use of carbon adsorption, condensation, and wet scrubbing technically infeasible. Thermal oxidation is technically feasible for this source.

**Hershel Hammer & Swing Master** - Low VOC concentration (~ 37 ppmw) renders the use of carbon adsorption, condensation, and wet scrubbing technically infeasible. Thermal oxidation is technically feasible for this source.

**Degating** - Low VOC concentration (~ 2 ppmw) renders the use of carbon adsorption, condensation, and wet scrubbing technically infeasible. Thermal oxidation is technically feasible for this source.

**Sand Crusher** - Low VOC concentration (<30 ppmw) and elevated exhaust temperature (~ 160 F) render the use of carbon adsorption, condensation, and wet scrubbing technically infeasible. Thermal oxidation is technically feasible for this source.

**Waste Sand Handling** - High volume of air (>300,000 SCFM) and low concentration (~ 1 ppmw) make this source not conducive to add-on controls. **(BACT is no controls.)**

**Air House** - Only source of VOC emissions is natural gas combustion. Because of the elevated temperatures of the oven exhaust gas stream, carbon adsorption, wet scrubbing, and condensation are not feasible. Also, thermal oxidation is not feasible as a combustion source since it will also generate VOC and NOx (ozone precursor). (**BACT is the use of natural gas as fuel.**)

**Step #3 -- Rank Remaining Control Technologies by Control Effectiveness**

Thermal Oxidation (TO) and wet scrubbing are the only remaining technically feasible options for core making. Technically, thermal oxidation can achieve higher control efficiency for VOC than wet scrubbing. Therefore, TO is the highest ranking control technology for the following sources: core making, Sand Mixing, Pouring, Cooling Tunnel, Hershel Hammer & Swing Master, Degating, and Sand Crusher. Based on in-house data, it is estimated that low pH, sulfuric acid and water solution, wet scrubbing will achieve an 84% control efficiency for VOC, while thermal oxidation will achieve 95% control for VOC.

**Step #4 -- Evaluate Most Effective Controls and Document Results**

Thermal Oxidation - Normally, thermal oxidizers are capable of achieving up to 95% control efficiency and can recover upwards of 95% of the heat of combustion. Resin material, however, may contribute to fouling of the heat sink beds of the oxidizer, which will require capabilities to clean off the fouling material. This will increase the capital cost and reduce the thermal efficiency of the oxidizer.

Wet scrubbing - The scrubber uses a low pH, sulfuric acid and water, solution to absorb VOC from the exhaust gas steam. The efficiency of absorption for removing pollutants from a gaseous mixture is dependant on the solubility of the pollutant in the absorption solvent.

Core Making - Abatement of di-methyl iso - propyl amine (DMIPA) using oxidation results in creation of large quantities of NOx emissions (43 lbs/hr or 110 tons/year). The overall control efficiency for VOC is expected to be 95%, by weight.

The acid scrubber removes about 99% of the DMIPA from the exhaust gas stream. However, it will only remove a small amount of other VOCs present in the gas steam (30- 40%). The overall control efficiency for VOC is 84%, by weight. It is estimated that employing TO over wet scrubbing will result in a further VOC reduction of 61 tons/year.

A combination of wet scrubbing and TO will also be considered as an option.

**Step #5 -- Select BACT**

Core Making- Use of TO to control VOC emissions will generate a high amount of NOx emissions (110 tons per year). The use of Wet Scrubbing (using sulfuric acid and water as the scrubbing solution), on the other hand, will result in 61 more tons of uncontrolled VOC/year. Although TO control efficiency is slightly higher, the additional control of 61 tons VOC/year is outweighed by the creation of 110 tons NOx/year. Also, GM has employed wet scrubbing at GM's Saginaw Metal Casting Operations facility on a similar process (installed in 2004) producing V-8 aluminum blocks. Furthermore, wet scrubbing to control VOC emissions from core making is an industry standard.

Using TO and wet scrubbing (TO will be used in series with wet scrubbing and will control residual VOCs from the scrubber) was investigated and deemed not cost-effective (\$9,600/ton of VOC removed). Therefore, BACT for Core Making is Wet Scrubbing.

Other sources - The cost effectiveness for the other sources (Sand Mixing, Pouring, ...etc) for TO ranged from \$ 9,632 to \$985,859/tons of VOC removed. Table III below provides a summary of BACT for each one of the sources considered:

**Table III**

<b>Summary of VOC BACT</b>	
Sand Mixing	NO Controls

Core Making	Wet Scrubber (low pH)
Core Machine Metal Cleaner	NO Controls
Core Box Cleaning Tank	NO Controls
Core Storage and Assembly	NO Controls
Cylinder liner Cleaning Oven	Use of natural gas
Pouring	NO Controls
Cooling Tunnel	NO Controls
Shakeout	TO
Cooling	TO
Hershel Hammer & Swing Master	NO Controls
Degating	NO Controls
Sand Crusher	NO Controls
Waste Sand Handling	NO Controls
Air House	NO Controls

## **Modeling**

No modeling of VOC is required per OAC rule 3745-31-13(H)(1)(e) since the net emissions increase of VOC from this project is less than 100 tons/year.

Air dispersion modeling was performed for the Core Making operations (potential HAPs emission > 1 ton/year) using USEPA's SCREEN3 and an emissions rate of 1 gram/second. The predicted ambient concentrations of air Toxics results showed concentrations (for phenol, m, p-xylene, and naphthalene) well below the applicable pollutant specific MAGLC.

## **Conclusions**

Based upon the analysis of the permit to install application and it's supporting documentation provided by the GM Defiance, the Ohio EPA staff has determined that the proposed increase will comply with all applicable State and Federal environmental regulations and that the requirements for BACT are satisfied. Therefore, the Ohio EPA staff recommends that a permit to install be issued to the GM Defiance facility.

## **Source Emissions**

The potential emissions from the proposed installation exceed the PSD significance levels for VOC and PM10. The facility performed the required contemporaneous netting analysis, which includes a federally enforceable restriction on Mold line #3 (ML3), that include emissions units P141, P142, P149, P154, P248 and P264 (no physical modification) as part of this permit action, which shows the PSD threshold is not exceeded for PM10. The facility has also proposed federally enforceable restrictions on the sand and aluminum usage for this project which further reduce emissions.

## **Project Increase:**

<b>OEPA ID</b>	<b>Source Description</b>	<b>PM10</b>	<b>VOC</b>
F007	waste sand loadout and disposal	0.80	2.0
P464-P465	precision sand core machines #1 - #6	2.0	57.0
P470 - P471	mold fill pouring station #1 & #2(pilot)	0.55	1.34
P472	precision sand mold cooling line	3.23	3.35
P473	precision sand mold shakeout	8.26	12.72
P474	precision sand casting cooling tunnel	6.43	10.04
P475	hershel hammer and two parallel swing masters	0.69	5.09
P476	shot blast	0.32	0.0
P477	degate saw	0.27	0.05
P478	sand feeder and core breaker	6.43	6.70
P479	cast iron liners blast cabinet	0.58	0.0

P801	core storage and assembly	0.0	26.51
P906	sand receiving and handling	1.75	0.0
deminimis	cast iron liners bake oven	0.68	0.005
deminimis	core box cleaning caustic wash and high pressure water	0.41	0.5
deminimis	air makeup unit	0.23	0.18
	<b>TOTAL</b>	<b>32.63</b>	<b>125.49</b>

**Contemporaneous Increases:**

Construction Date	Startup Date	PTI#	OEPA ID	Source description	PM10	VOC
05/01/05	02/07	03-16280	F006	raw material conveyor	1.00	0
05/01/05	02/07	03-16280	P455	80 ton induction furnace	0.26	0
05/01/05	02/07	03-16280	P455-P460	5 cold box core machines	5.63	28.99
05/01/05	02/07	03-16280	P902-P904	3 malleable iron core lines	8.28	22.86
05/01/05	02/07	03-16280	P905	malleable iron finishing	1.74	0
05/01/05	02/07	03-16280	de minimis	alloy addition system	0.02	0
05/01/05	02/07	03-16280	de minimis	tumblast	5.3	0
05/01/05	02/07	03-16280	de minimis	process belt	1.3	0
	04/06	03-16320	P461	FN4 east manipulator blast cabinet	8.3	0
	04/06	03-16320	P462	FN4 west manipulator blast cabinet	8.3	0
	04/06	03-16320	P463	FN4 shaker	0.13	0
					40.26	51.85

**Contemporaneous Decreases:**

Shutdown Date	OEPA ID	Source description	PM10	VOC
04/06	P098	FN4 blast cabinet #5	1.54	0
04/06	P127	FN4 grinder NE 5 B/C	1.46	0
04/06	P161	FN4 blast cabinet #6	2.31	0
04/06	P235	FN4 shaker - N 5 B/C	1.46	0
04/06	P237	FN4 shaker - N 6 B/C	0.62	0
04/06	P360	FN4 grinder V6 block	1.95	0
08/07	P413	castline cell #3	0.78	0.32
08/07	P414	castline cell #4	0.04	0.02
08/07	P421	sand reclaim #3	0.41	0.52
08/07	P422	sand reclaim #4	0.02	0.03
08/07	P409	bead pre-expander #3	0	2.59
08/07	P410	bead pre-expander #4	0	3.23
final PTI date 03-17353	P141	ML3 mold facilities*	3.94	0
final PTI date 03-17353	P142	ML3 mold cooling*	5.95	34.50
final PTI date 03-17353	P149	ML3 sand system*	26.18	0
final PTI date 03-17353	P154	ML3 sprue handling*	36.78	0

final PTI date 03-17353	P248	ML3 shakeout and casting cooling*	15.35	35.80
final PTI date 03-17353	P264	ML3 iron pour*	2.55	5.34
			101.34	82.35

**\*Two-year average data for ML3 (Based on 1998 and 1999 data)**

OEPA ID	Source Description	PM10	VOC
P141	ML3 mold facilities	4.85	0
P142	ML3 mold cooling	7.33	42.60
P149	ML3 sand system	32.32	0
P154	ML3 sprue handling	45.41	0
P248	ML3 shakeout and casting cooling	18.95	44.20
P264	ML3 iron pour	3.15	6.59



State of Ohio Environmental Protection Agency

**RE: DRAFT PERMIT TO INSTALL  
DEFIANCE COUNTY**

**CERTIFIED MAIL**

Street Address:

Mailing Address:

Lazarus Gov. Center TELE: (614) 644-3020 FAX: (614) 644-2329

Lazarus Gov.  
Center

**Application No: 03-17353  
Fac ID: 0320010001**

**DATE: 4/10/2008**

GM Powertrain Group, Defiance Plant  
Todd Rouse  
267327 State Route 281 East  
Defiance, OH 43512-0070

You are hereby notified that the Ohio Environmental Protection Agency has made a draft action recommending that the Director issue a Permit to Install for the air contaminant source(s) [emissions unit(s)] shown on the enclosed draft permit. This draft action is not an authorization to begin construction or modification of your emissions unit(s). The purpose of this draft is to solicit public comments on the proposed installation. A public notice concerning the draft permit will appear in the Ohio EPA Weekly Review and the newspaper in the county where the facility will be located. Public comments will be accepted by the field office within 30 days of the date of publication in the newspaper. Any comments you have on the draft permit should be directed to the appropriate field office within the comment period. A copy of your comments should also be mailed to Robert Hodanbosi, Division of Air Pollution Control, Ohio EPA, P.O. Box 1049, Columbus, OH, 43216-1049.

A Permit to Install may be issued in proposed or final form based on the draft action, any written public comments received within 30 days of the public notice, or record of a public meeting if one is held. You will be notified in writing of a scheduled public meeting. Upon issuance of a final Permit to Install a fee of **\$19650** will be due. Please do not submit any payment now.

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. If you have any questions about this draft permit, please contact the field office where you submitted your application, or Mike Ahern, Field Operations & Permit Section at (614) 644-3631.

Sincerely,

Michael W. Ahern, Manager  
Permit Issuance and Data Management Section  
Division of Air Pollution Control

CC: USEPA

NWDO

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**DEFIANCE COUNTY**

**PUBLIC NOTICE  
OHIO ENVIRONMENTAL PROTECTION AGENCY  
ISSUANCE OF DRAFT PERMIT TO INSTALL  
SUBJECT TO PREVENTION OF SIGNIFICANT DETERIORATION REVIEW  
TO GM POWERTRAIN GROUP - DEFIANCE FOUNDRY**

Public Notice is hereby given that the Staff of the Ohio Environmental Protection Agency (EPA) has recommended to the Director that the Ohio EPA issue a draft action of a Permit to Install (PTI) to GM Powertrain Group - Defiance Foundry, located in Defiance County, Ohio. The draft action (permit no. 03-17353) was issued on **4/10/08**. This draft permit proposes the installation of new Precision Sand Aluminum Casting line to produce a new generation V-6 engine blocks called High Feature V-6 (HFV6).

Due to the proposed changes, air emissions of several pollutants will result. The proposed allowable criteria pollutant air emission rates which result from net increases at the facility are listed below, in tons per year.

<u>Pollutant</u>	<u>Tons/yr</u>
PM10	20.92 (2.19 fugitive)
PE	32.63 (1.38 fugitive)
VOC	125.49 (4.0 fugitive)
NOx	9.27
CO	4.17
SO2	0.11

This facility is subject to the applicable provisions of the Prevention of Significant Deterioration (PSD) regulations as promulgated by U.S. EPA (40 CFR 52.21) and the Ohio EPA permit to install requirements (OAC 3745-31). [The proposed project exceeds the PSD significant emission rate for VOC. ]

Within 30 days from the date of this notice, any interested party may submit comments or request a public hearing. Comments are to be sent to Elissa Hartfield of the Northwest District Office, Ohio Environmental Protection Agency, 347 North Dunbridge Road, Bowling Green, Ohio, 43402.

Copies of the draft permit application and technical support information may be reviewed and/or copies made by first calling to make an appointment at the Northwest District Office at the above address during normal business hours. Telephone number: (419) 352-8461.



**Permit To Install  
Terms and Conditions**

**Issue Date: To be entered upon final issuance  
Effective Date: To be entered upon final issuance**

**DRAFT PERMIT TO INSTALL 03-17353**

Application Number: 03-17353  
Facility ID: 0320010001  
Permit Fee: **To be entered upon final issuance**  
Name of Facility: GM Powertrain Group, Defiance Plant  
Person to Contact: Todd Rouse  
Address: 267327 State Route 281 East  
Defiance, OH 43512-0070

Location of proposed air contaminant source(s) [emissions unit(s)]:  
**26427 St Rte 281 E  
Defiance, Ohio**

Description of proposed emissions unit(s):  
**Installation of a precision sand aluminum production process.**

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

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Chris Korleski  
Director

GM Powertrain Group, Defiance Plant

Facility ID: 0320010001

PTI Application: 03-17353

Issued: To be entered upon final issuance

**Part I - GENERAL TERMS AND CONDITIONS**

**A. State and Federally Enforceable Permit-To-Install General Terms and Conditions**

**1. Monitoring and Related Recordkeeping and Reporting Requirements**

- a. Except as may otherwise be provided in the terms and conditions for a specific emissions unit, the permittee shall maintain records that include the following, where applicable, for any required monitoring under this permit:
  - i. The date, place (as defined in the permit), and time of sampling or measurements.
  - ii. The date(s) analyses were performed.
  - iii. The company or entity that performed the analyses.
  - iv. The analytical techniques or methods used.
  - v. The results of such analyses.
  - vi. The operating conditions existing at the time of sampling or measurement.
- b. 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.
- c. Except as may otherwise be provided in the terms and conditions for a specific emissions unit, the permittee shall submit required reports in the following manner:
  - i. Reports of any required monitoring and/or recordkeeping of federally enforceable information shall be submitted to the appropriate Ohio EPA District Office or local air agency.
  - ii. Quarterly written reports of (i) any deviations from federally enforceable emission limitations, operational restrictions, and control device operating parameter limitations, excluding deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06, that have been detected by the testing, monitoring and recordkeeping requirements specified in this permit, (ii) the probable cause of such deviations, and (iii) any corrective actions or preventive measures taken, shall be made to the appropriate Ohio EPA District Office or local air agency. The written reports shall be submitted (i.e., postmarked) quarterly, by January 31, April 30, July 31, and October 31 of each year and

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shall cover the previous calendar quarters. See B.9 below if no deviations occurred during the quarter.

- iii. Written reports, which identify any deviations from the federally enforceable monitoring, recordkeeping, and reporting requirements contained in this permit shall be submitted (i.e., postmarked) to the appropriate Ohio EPA District Office or local air agency every six months, by January 31 and July 31 of each year for the previous six calendar months. If no deviations occurred during a six-month period, the permittee shall submit a semi-annual report, which states that no deviations occurred during that period.
  - iv. If this permit is for an emissions unit located at a Title V facility, then each written report shall be signed by a responsible official certifying that, based on information and belief formed after reasonable inquiry, the statements and information in the report are true, accurate, and complete.
- d. The permittee shall report actual emissions pursuant to OAC Chapter 3745-78 for the purpose of collecting Air Pollution Control Fees.

## 2. 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, i.e., upset, 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. (The definition of an upset condition shall be the same as that used in OAC rule 3745-15-06(B)(1) for a malfunction.) The verbal and written reports shall be submitted pursuant to 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 emission unit(s) that is (are) served by such control system(s).

## 3. Risk Management Plans

If the permittee is required to develop and register a risk management plan pursuant to section 112(r) of the Clean Air Act, as amended, 42 U.S.C. 7401 et seq. ("Act"), the permittee shall comply with the requirement to register such a plan.

## 4. Title IV Provisions

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If the permittee is subject to the requirements of 40 CFR Part 72 concerning acid rain, the permittee shall ensure that any affected emissions unit complies with those requirements. Emissions exceeding any allowances that are lawfully held under Title IV of the Act, or any regulations adopted thereunder, are prohibited.

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## 5. Severability Clause

A determination that any term or condition of this permit is invalid shall not invalidate the force or effect of any other term or condition thereof, except to the extent that any other term or condition depends in whole or in part for its operation or implementation upon the term or condition declared invalid.

## 6. General Requirements

- a. The permittee must comply with all terms and conditions of this permit. Any noncompliance with the federally enforceable terms and conditions of this permit constitutes a violation of the Act, and is grounds for enforcement action or for permit revocation, revocation and re-issuance, or modification
- b. It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the federally enforceable terms and conditions of this permit.
- c. This permit may be modified, revoked, or revoked and reissued, for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or revocation, or of a notification of planned changes or anticipated noncompliance does not stay any term and condition of this permit.
- d. This permit does not convey any property rights of any sort, or any exclusive privilege.
- e. 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 or revoking this permit or to determine compliance with this permit. Upon request, the permittee shall also furnish to the Director or an authorized representative of the Director, copies of records required to be kept by this permit. For information claimed to be confidential in the submittal to the Director, if the Administrator of the U.S. EPA requests such information, the permittee may furnish such records directly to the Administrator along with a claim of confidentiality.

## 7. 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 any permit-to-install. The permittee shall pay all applicable permit-to-operate fees

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within thirty days of the issuance of the invoice.

## 8. Federal and State Enforceability

Only those terms and conditions designated in this permit as federally enforceable, that are required under the Act, or any its applicable requirements, including relevant provisions designed to limit the potential to emit of a source, are enforceable by the Administrator of the U.S. EPA and the State and by citizens (to the extent allowed by section 304 of the Act) under the Act. All other terms and conditions of this permit shall not be federally enforceable and shall be enforceable under State law only.

## 9. Compliance Requirements

- a. Any document (including reports) required to be submitted and required by a federally applicable requirement in this permit shall include a certification by a responsible official that, based on information and belief formed after reasonable inquiry, the statements in the document are true, accurate, and complete.
- b. Upon presentation of credentials and other documents as may be required by law, the permittee shall allow the Director of the Ohio EPA or an authorized representative of the Director to:
  - i. At reasonable times, enter upon the permittee's premises where a source is located or the emissions-related activity is conducted, or where records must be kept under the conditions of this permit.
  - ii. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit, subject to the protection from disclosure to the public of confidential information consistent with ORC section 3704.08.
  - iii. Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit.
  - iv. As authorized by the Act, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the permit and applicable requirements.
- c. The permittee shall submit progress reports to the appropriate Ohio EPA District Office or local air agency concerning any schedule of compliance for meeting an applicable requirement. Progress reports shall be submitted semiannually, or more frequently if specified in the applicable requirement or by the Director of the Ohio EPA. Progress reports shall contain the following:
  - i. Dates for achieving the activities, milestones, or compliance required in any schedule of compliance, and dates when such activities, milestones, or compliance were achieved.
  - ii. An explanation of why any dates in any schedule of compliance

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were not or will not be met, and any preventive or corrective measures adopted.

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## 10. Permit-To-Operate Application

- a. If the permittee is required to apply for a Title V permit pursuant to OAC Chapter 3745-77, the permittee shall submit a complete Title V permit application or a complete Title V permit modification application within twelve (12) months after commencing operation of the emissions units covered by this permit. However, if the proposed new or modified source(s) would be prohibited by the terms and conditions of an existing Title V permit, a Title V permit modification must be obtained before the operation of such new or modified source(s) pursuant to OAC rule 3745-77-04(D) and OAC rule 3745-77-08(C)(3)(d).
- b. If the permittee is required to apply for permit(s) pursuant to OAC Chapter 3745-35, the source(s) identified in this permit is (are) permitted to operate for a period of up to one year from the date the source(s) commenced operation. 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 source(s) covered by this permit.

## 11. 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.

## 12. 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.

## 13. Permit-To-Install

A permit-to-install must be obtained pursuant to OAC Chapter 3745-31 prior to "installation" of "any air contaminant source" as defined in OAC rule 3745-31-01, or "modification", as defined in OAC rule 3745-31-01, of any emissions unit included in this permit.

## B. State Only Enforceable Permit-To-Install General Terms and Conditions

### 1. Compliance Requirements

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

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## 2. Reporting Requirements

The permittee shall submit required reports in the following manner:

- a. Reports of any required monitoring and/or recordkeeping of state-only enforceable 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 state-only required 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 (i.e., postmarked) quarterly, 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. 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.

## 4. Authorization To Install or Modify

If applicable, authorization to install or modify any new or existing emissions unit included in this permit shall terminate within eighteen months of the effective date of the permit 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.

## 5. Construction of New Sources(s)

This permit does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. This permit does not constitute expressed or implied assurance that the proposed facility has

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been constructed in accordance with the application and terms and conditions of this permit. 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 this permit does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. Issuance of this permit 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.

**6. 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.

**7. Applicability**

This Permit to Install is applicable only to the emissions unit(s) identified in the Permit To Install. Separate application must be made to the Director for the installation or modification of any other emissions unit(s).

**8. Construction Compliance Certification**

If applicable, the applicant shall provide Ohio EPA with a written certification (see enclosed form if applicable) 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.

**9. Additional Reporting Requirements When There Are No Deviations of Federally Enforceable Emission Limitations, Operational Restrictions, or Control Device Operating Parameter Limitations (See Section A of This Permit)**

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., postmarked), by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters.

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**C. 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>
PE	20.92 (2.19 fugitive)
PM10	32.63 (1.38 fugitive)
VOC	125.49 (4.0 fugitive)
NOx	9.27
CO	4.17
SO2	0.11

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**Part II - FACILITY SPECIFIC TERMS AND CONDITIONS**

**A. State and Federally Enforceable Permit To Install Facility Specific Terms and Conditions**

1. Emissions unit P264 is subject to MACT Subpart EEEEE and all fugitive emissions from foundry operations. The complete MACT requirements, including the MACT General Provisions may be accessed via the Internet from the Electronic Code of Federal Regulations (e-CFR) website <http://efcf.gpoaccess.gov> or by contacting the Northwest District Office Division of Air Pollution Control (NWDO-DAPC).

**B. State Only Enforceable Permit To Install Facility Specific Terms and Conditions**

None

Emissions Unit ID: F007

**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)****A. State and Federally Enforceable Section****I. 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.

**Operations, Property, and/or Equipment - (F007) - waste sand load-out station and disposal**

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05(C) OAC rule 3745-31-10 through 20	<p>Volatile organic compound (VOC) emissions shall not exceed 2.0 tons per year (tpy), based upon a rolling, 12-month summation of the monthly emissions.</p> <p>See A.I.2.b, A.I.2.c, and A.I.2.e.</p>
OAC rule 3745-17-08(B)(3)	See A.I.2.d.
OAC rule 3745-17-07(B)	Visible particulate emissions (PE) shall not exceed 20% opacity, as a three-minute average.
OAC rule 3745-21-07(G)	None, see A.I.2.f.
OAC rule 3745-31-05(C)	<p>Particulate matter emissions less than or equal to 10 microns in size (PM10) shall not exceed 0.80 tpy based upon a rolling, 12-month summation of the monthly emissions.</p> <p>PE shall not exceed 1.61 tpy based upon a rolling, 12-month summation of the monthly emissions.</p> <p>See A.I.2.c, and A.I.2.e.</p>

**2. Additional Terms and Conditions**

- 2.a This emissions unit includes the following material handling operations:
  - i. waste sand loading from core breaker to hopper; and
  - ii. waste sand loading from hopper to truck.
- 2.b Based on the "Prevention of Significant Deterioration" (PSD) analysis conducted to ensure the application of "Best Available Control Technology" (BACT), it has been determined that no control technologies for VOC were cost effective.
- 2.c The rolling, 12-month emission limitation is a federally enforceable limitation established for the purpose of reducing emissions. The emission limitation is based on the federally enforceable restriction on the amount of sand processed (See A.II.1).
- 2.d The permittee shall utilize reasonable available control measures (RACM) that are sufficient to minimize or eliminate visible emissions of fugitive dust. In accordance with the permittee's permit application, the permittee has committed to perform the following control measure(s) to ensure compliance:

Emissions Unit ID: F007

- i. building enclosure; and
- ii. minimizing the drop height between material transfer points .

Nothing in this paragraph shall prohibit the permittee from employing other equally -effective control measures to ensure compliance.

For the other emission points associated with this emissions unit, the permittee maintains that the inherent nature of the operation and material involved is such that compliance with all applicable requirements will be obtained without additional control measures. If at any time the inherent nature of the operation and material involved is not sufficient to meet the above applicable requirements, the permittee shall employ RACM to ensure compliance.

- 2.e The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to VOC, PE and PM10 from this air contaminant source since the uncontrolled potential to emit for each is less than ten tons per year, taking into account the federally enforceable restriction on the sand throughput.
- 2.f This emissions unit is not subject to the requirements in OAC rule 3745-21-07(G) because no liquid organic material is employed in this emissions unit. "Liquid organic material" is defined in OAC rule 3745-21-01.

## II. Operational Restrictions

- 1. The maximum annual sand processed in this emissions units shall not exceed 133,875 tons, based upon a rolling, 12-month summation of the monthly sand processed.

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

<u>Month(s)</u>	<u>Maximum Allowable Cumulative Amount of Sand Processed(tons)</u>
1	13,400
1-2	26,800
1-3	40,200
1-4	53,600
1-5	67,000
1-6	80,400
1-7	93,800
1-8	107,200
1-9	120,600
1-10	125,067
1-11	129,534
1-12	133,875

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

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summation of the monthly sand processed.

**III. Monitoring and/or Recordkeeping Requirements**

1. The permittee shall collect and record the following information each information month for this emissions unit:
  - a. the quantity of sand processed, in tons;
  - b. for the first 12 months of operation following the issuance of this permit, the cumulative quantity of sand processed, in tons; and
  - c. after the first 12 months operation following the issuance of this permit, the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly sand processed.

\*The amount of sand processed through this emissions unit is equivalent to the amount of sand received in emissions unit P906. The monitoring and record keeping associated with the sand received in emissions unit P906 can be used to fulfill the requirements in this section.

2. In addition to the above information, the permittee shall also record the following information each month for this emissions units:
  - a. the calculated emission rate for VOC, in tons (A.III.1.a. x 0.030 lb of VOC/ton of sand x ton/2000 pounds );
  - b. the calculated emission rate for PE, in tons (A.III.1.a. x 0.0240 lb of PE/ton of sand x ton/2000 pounds );
  - c. the calculated emission rate for PM10, in tons (A.III.1.a. x 0.0120 lb of PM10/ton of sand x ton/2000 pounds ); and
  - d. the annual VOC, PE and PM10 emission rates, in tons, based upon the rolling, 12-month summation of the monthly emission rates.
3. The permittee shall perform weekly\* checks, when the emissions unit is in operation and when the weather conditions allow, for any visible emissions of fugitive dust from the egress points (i.e., building windows, doors, roof monitors, etc.) serving 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 date and time of the visible emission observation;
  - b. the identification of the egress observed;
  - c. the color of the emissions;
  - d. the total duration of any visible emission observation; and

Emissions Unit ID: F007

- e. the corrective actions, if any, taken to eliminate the visible emissions.

\*once during each normal calendar week

#### IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, which identify all exceedances of the following:
  - a. for the first 12 calendar months of operation following the issuance of this permit, the restriction on the maximum allowable cumulative quantity of sand processed;
  - b. after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month restriction on the quantity of sand processed; and
  - c. the rolling, 12-month emission limitations for VOC, PE and PM10.

These quarterly deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible emissions of fugitive dust were observed from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous six-month periods.

#### V. Testing Requirements

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

- a. Emission Limitation:

The maximum annual amount of sand processed shall not exceed 133,875 tons per rolling, 12-month period.

Compliance Method:

Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

- b. Emission Limitations:

VOC emissions shall not exceed 2.0 tpy, based upon a rolling, 12-month summation of the monthly emissions.

Applicable Compliance Method:

Compliance with the annual restriction shall be demonstrated by the record keeping requirements specified in section A.III.2.

The emission limitation was established based upon multiplying the company-supplied emission factor of 0.030 lb/ton of sand by the annual sand restriction of 133,875 tons and dividing by 2000 lbs/ton. If required, testing, to

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verify the accuracy of the emission factor of 0.030 lb/ton, shall be demonstrated based on the results of emission testing conducted in accordance with Methods 1-4 and 18, 25 or 25A of 40 CFR Part 60, Appendix A.

c. Emission Limitation:

PM10 emissions shall not exceed 0.80 tpy, based upon a rolling, 12-month summation of the monthly emissions.

Applicable Compliance Method:

Compliance with the annual restriction shall be demonstrated by the record keeping requirements specified in section A.III.2.

The emission limitation was established by multiplying the company-supplied emission factor of 0.0120 lb/ton (based on AP-42, Section 11.19.1-1, revised 11/95) of sand by the annual sand restriction of 133,875 tons.

d. Emission Limitation:

PE emissions shall not exceed 1.61 tpy, based upon a rolling, 12-month summation of the monthly emissions.

Applicable Compliance Method:

Compliance with the annual restriction shall be demonstrated by the record keeping requirements specified in section A.III.2.

The emission limitation was established by multiplying the company-supplied emission factor of 0.0240 lb/ton (based on AP-42, Section 11.19.1-1, revised 11/95) of sand by the annual sand restriction of 133,875 tons.

e. Emission Limitation:

Visible PE shall not exceed 20% opacity, as a three-minute average.

Applicable Compliance Method:

If required, compliance shall be demonstrated using Test Method 9 as set forth in "Appendix on Test Methods" in 40 CFR, Part 60, Appendix A (Standards of Performance for New Stationary Sources) as such Appendix existed on July 1, 2002, and the modifications listed in paragraphs (B)(3)(a) and (B)(3)(b) of OAC rule 3745-17-03.

**VI. Miscellaneous Requirements**

None

Emissions Unit ID: F007

**B. State Only Enforceable Section**

**I. 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.

**Operations, Property, and/or Equipment -(F007) - waste sand load-out**

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
None	None

**2. Additional Terms and Conditions**

2.a None

**II. Operational Restrictions**

None

**III. Monitoring and/or Recordkeeping Requirements**

None

**IV. Reporting Requirements**

None

**V. Testing Requirements**

None

**VI. Miscellaneous Requirements**

None

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**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. State and Federally Enforceable Section**

**I. 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.

**Operations, Property, and/or Equipment - (P464) - precision sand core machine no. 1**

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05(C) OAC rule 3745-31-10 through 20	<p>Volatile organic compound emissions (VOC) from emissions units P464, P465, P466, P467, P468 and P469, combined, shall not exceed 55.0 tons per year (tpy), based upon a rolling, 12-month summation of the monthly emissions.</p> <p><u>Receiving hopper and sand mixer (Stack No. 5)</u> VOC emissions shall not exceed 0.10 pound per ton of sand processed.</p> <p><u>Core making (Stack No. 4)</u> VOC emissions shall not exceed 0.60 pound per ton of sand processed.</p> <p><u>Maintenance (metal cleaning of core machine - Stack No. 4):</u> VOC emissions shall not exceed 0.119 pound per ton of sand processed.</p> <p>Fugitive VOC emissions shall not exceed 2.0 tpy, based on a rolling, 12-month summation of the monthly emissions.</p> <p>See A.I.2.a, A.I.2.b, and A.I.2.d.</p>

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OAC rule 3745-31-05(C)	<p>Particulate matter emissions less than or equal to 10 microns in size (PM10) from emissions units P464, P465, P466, P467, P468 and P469, combined, shall not exceed 2.0 tons per year (tpy), based upon a rolling, 12-month summation of the monthly emissions.</p> <p><u>Receiving hopper and sand mixer (Stack No. 5)</u> PM10 emissions shall not exceed 0.0086 lb/ton of sand processed.</p> <p><u>Core making (Stack No. 4)</u> PM10 emissions shall not exceed 0.021 lb/ton of sand processed.</p> <p>Visible PE from the stack(s) serving this emissions unit shall not exceed 5% opacity, as a six-minute average.</p> <p>See A.I.2.b, A.I.2.c, and A.I.2.e.</p>
OAC rule 3745-17-07(A) OAC rule 3745-17-11(B)	The emission limitations specified by these rules are less stringent than the emissions limitations established pursuant to OAC rule 3745-31-05(C).
OAC rule 3745-21-07(G)	Exempt, pursuant to OAC rule 3745-21-07(G)(9)(i).

**2. Additional Terms and Conditions**

- 2.a** The permittee shall employ best available control technology (BACT) on this emissions unit for VOC. BACT has been determined to be the use of the following:
- i. sand mixing - no control technologies were cost effective.
  - ii. core making - a wet scrubber. The wet scrubber shall achieve a control efficiency of 95% for the catalyst dimethyl isopropyl amine (DMIPA) and 30% for all other VOC's.
- 2.b** The rolling, 12-month emission limitations are federally enforceable limitations established for the purpose of reducing emissions. The emission limitations are based on the federally enforceable restriction on the amount of sand processed (See A.II.1).
- 2.c** All emissions of particulate emissions are PM10.
- 2.d** The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the emissions of VOC from this air contaminant source since the potential to emit is less than ten tons per year, taking into account the federally enforceable restriction on the amount of sand processed and the use of a wet scrubber.
- 2.e** The Best Available Technology (BAT) requirements under OAC rule

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3745-31-05(A)(3) do not apply to the emissions of PM10 from this air contaminant source since the potential to emit is less than ten tons per year, taking into account the federally enforceable restriction on the amount of sand processed, the use of a baghouse and cyclone.

## **II. Operational Restrictions**

1. The maximum annual sand processed in emissions units P464 through P469, combined, shall not exceed 133,875 tons, based upon a rolling, 12-month summation of sand processed.

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

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<u>Month(s)</u>	<u>Maximum Allowable Cumulative Amount of Sand Processed(tons)</u>
1	13,400
1-2	26,800
1-3	40,200
1-4	53,600
1-5	67,000
1-6	80,400
1-7	93,800
1-8	107,200
1-9	120,600
1-10	125,067
1-11	129,534
1-12	133,875

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

2. The permittee shall operate the baghouse at all times when this emissions unit is in operation.
3. To ensure proper operation of the catalyst gas scrubber during operation of this emissions unit, the permittee shall employ an "interlock system" that will shutdown the cold box core machine within 30 minutes after the catalyst gas scrubber liquor pH rises above 5.

The "interlock system" shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations with any modifications deemed necessary by the permittee.

**III. Monitoring and/or Recordkeeping Requirements**

1. The permittee shall collect and record the following information each month for emissions units P464, through P469, combined:
  - a. the quantity of sand processed, in tons;
  - b. for the first 12 months of operation following the issuance of this permit, the cumulative quantity of sand processed, in tons; and
  - c. after the first 12 months operation, the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly sand processed.

\*The amount of sand processed through this emissions unit is equivalent to the amount of sand received in emissions unit P906. The monitoring and record keeping associated with the sand received in emissions unit P906 can be used to fulfill the

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requirements in this section.

2. In addition to the above information, the permittee shall also record the following information each month for emissions units P464, P465, P466, P467, P468 and P469, combined:

- a. the calculated emission rate for VOC, in tons, determined by the following equation:

$$\text{TOCE} = (\text{A.III.1.a}) \times (\text{A} + \text{B} + \text{C}) \times \text{ton}/2000 \text{ lbs}$$

where:

TOCE = total VOC emissions, in tons

A = the VOC emission factor for the sand receiving hopper and sand mixing (0.10 lb VOC/ton of sand processed)

B = the VOC emission factor for the core machine (0.60 lb VOC/ton of sand processed)

C = the VOC emission factor for metal cleaning (0.119 lb VOC/ton of sand processed)

- b. the calculated emission rate for fugitive VOC, in tons, determined by the following equation:

$$\text{fugitive VOC} = (\text{A.III.1.a}) \times \text{the emission factor for fugitive VOC emissions (0.030 lb fugitive VOC/ton of sand)} \times \text{ton}/2000 \text{ lbs}$$

- c. the calculated emission rate for PM10, in tons, determined by the following equation:

$$\text{TPM10} = (\text{A.III.1.a}) \times (\text{D} + \text{E}) \times \text{ton}/2000 \text{ lbs}$$

where:

TPM10 = total PM10 emissions, in tons

D = the PM10 emission factor for the sand receiving hopper and sand mixing (0.0086 lb PM10/ton of sand processed)

E = the PM10 emission factor for the core machine (0.021 lb PM10/ton of sand processed)

- d. the annual VOC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates;

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- e. the annual PM10 emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates; and
  - f. the annual fugitive VOC emission rate, in tons, based upon the rolling, 12-month summation of the monthly emission rates.
3. The permittee shall maintain a log for the interlock system that identifies each time period when the pH exceeded 5, and the emissions unit was not shut down within 30 minutes thereafter.
  4. The permittee shall properly operate and maintain equipment to continuously monitor the liquor pH and the scrubber liquor flow rate while the emissions unit is in operation. The monitoring devices and any recorders shall be 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 catalyst gas scrubber liquor pH, on a once-per-shift basis;
- b. the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once-per-shift basis; and
- c. the operating times for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.

Whenever the monitored values for the catalyst gas scrubber liquor pH and catalyst gas scrubber liquor flow rate deviate from the range specified below, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation: the date and time the deviation began and the magnitude of the deviation at that time, the date(s) the investigation was conducted, the names of the personnel who conducted the investigation, and the findings and recommendations.

In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the operation of the control equipment within the acceptable ranges specified below, unless the permittee determines that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation ended. The permittee shall maintain records of the following information for each corrective action taken: a description of the corrective action, the date it was completed, the date and time the deviation ended, the total period of time (in minutes) during which there was a deviation, the catalyst gas scrubber liquor pH and catalyst gas scrubber liquor flow rate immediately after the corrective action, and the names of the personnel who performed the work. Investigation and records required by this paragraph does not eliminate the need to comply with the requirements of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.

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- d. The catalyst gas scrubber liquor pH shall be continuously maintained at a value of less than or equal to 5 at all times while the emissions unit is in operation, or as established during the most recent performance test that demonstrated the emissions unit was in compliance.
- e. The catalyst gas scrubber liquor flow rate shall be continuously maintained at a value of not less than 3 gallons per minute per 1,000 cfm if gas flow at all times while the emissions unit is in operation, or as established during the most recent performance test that demonstrated the emissions unit was in compliance.

These ranges are effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the appropriate Ohio EPA District Office or local air agency. The permittee may request revisions to the ranges based upon information obtained during future tests that demonstrate compliance with the allowable VOC emission rate for this emissions unit. In addition, approved revisions to the ranges will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of administrative modification.

- 5. The permittee shall maintain records documenting any time periods when the emissions unit was in operation and the baghouse was not operating.
- 6. The permittee shall perform weekly\* checks when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the baghouse and from the cyclone serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, 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 date and time of the visible emission observation;
  - b. the identification of the stack observed;
  - c. the color of the emissions;
  - d. the total duration of any visible emission observation; and
  - e. the corrective actions, if any, taken to eliminate the visible emissions.

\*once during each normal calendar week

**IV. Reporting Requirements**

- 1. The permittee shall submit quarterly deviation (excursion) reports, which identify all exceedances of the following:
  - a. for the first 12 calendar months of operation following the issuance of this permit, the restriction on the maximum allowable cumulative quantity of sand processed;

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- b. after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month restriction on the quantity of sand processed; and
- c. the rolling, 12-month emission limitations for PM10, VOC, and fugitive VOC;

These quarterly deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit deviation (excursion) reports that identify any time periods when the emissions unit was in operation and the baghouse(s) was(were) not operating. Each report shall be submitted within 30 days after the deviation occurs.
3. The permittee shall submit a written report to the Director identifying all time periods when the pH exceeded 5, and the emissions unit was not shut down within 30 minutes thereafter. Each report shall be submitted within 30 days after the occurrence.
4. The permittee shall submit quarterly reports that identify the following information concerning the operation of the control equipment during the operation of this emissions unit:
  - a. each period of time when the liquor pH of the catalyst gas scrubber was outside of the acceptable range;
  - b. each period of time when the catalyst gas scrubber liquor flow rate was outside of the acceptable range;
  - c. an identification of each incident of deviation described in (a) and (b) above where a prompt investigation was not conducted;
  - d. an identification of each incident of deviation described in (a) and (b) where prompt corrective action, that would bring the liquor pH and/or the catalyst gas scrubber liquor flow rate into compliance with the acceptable range, was determined to be necessary and was not taken;
  - e. an identification of each incident of deviation described in (a) and (b) where proper records were not maintained for the investigation and/or the corrective action.

These quarterly reports shall be submitted (i.e., postmarked) by January 31, April 30, July 31, and October 31 of each year; and each report shall cover the previous calendar quarter.

5. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the baghouse and from the cyclone serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) by January 31 and July 31 of each year and shall cover the previous 6-month period.

## V. Testing Requirements

1. The permittee shall conduct, or have conducted, emission testing for emissions units

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P464, P465, P466, P467, P468 and P469 in accordance with the following requirements:

- a. The emission testing shall be conducted within 180 days after achieving the maximum production rate at which emissions units P464, P465, P466, P467, P468 and P469 will be operated, but no later than June 30, 2010.
- b. The emission testing shall be conducted to demonstrate compliance with the following:
  - i. for the receiving hopper and sand mixer: 0.10 lb/ton of sand for VOC;
  - ii. for core making: 0.60 lb/ton of sand & control efficiencies for VOC; and
  - iii. for metal cleaning: 0.119 lb VOC/ton of sand.
- c. The following test methods shall be employed to demonstrate compliance with the above emission limitations:
  - i. for total VOC, Methods 1-4 and 18, 25 or 25A of 40 CFR Part 60, Appendix A. Appropriate methods shall be used in conjunction with the test methods and procedures specified in Methods 18, 25, or 25A of 40 CFR Part 60, Appendix A for determining total VOC mass emissions.

Alternative U.S. EPA-approved test methods may be used with prior approval from the Ohio EPA, NWDO. The test method(s) which must be employed to demonstrate compliance with the control efficiencies are specified below.

- d. 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 specified in Methods 18, 25, or 25A of 40 CFR Part 60, Appendix A for VOC emissions .
- e. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases."
- f. The test(s) shall be conducted while emissions units P464, P465, P466, P467, P468 and P469 are operating at their maximum capacities, unless otherwise specified or approved by the Ohio EPA, NWDO.
- g. During emission testing, the permittee shall also record the following information:
  - i. the pH range for the scrubbing liquid; and
  - ii. the scrubber water flow rate, in gallons/minute.
- h. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA, NWDO. 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, NWDO's refusal to accept the results of the emission test(s).

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Personnel from the Ohio EPA, NWDO 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 of the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA, NWDO 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 Ohio EPA, NWDO.

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

a. Emission Limitation:

The maximum annual amount of sand processed shall not exceed 133,875 tons per rolling, 12-month period.

Compliance Method:

Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

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- b. Emission Limitations:  
0.10 lb of VOC per ton of sand (hopper and mixing)  
0.60 lb of VOC per ton of sand (core making)  
0.119 lb of VOC per ton of sand (metal cleaning)
- Applicable Compliance Method:  
Compliance shall be demonstrated based on the results of emission testing conducted in accordance with Methods 1-4 and 18, 25 or 25A of 40 CFR Part 60, Appendix A.
- c. Emission Limitations:  
PM10 emissions shall not exceed 0.0086 lb/ton of sand (hopper and mixing)  
PM10 emissions shall not exceed 0.021 lb/ton of sand (core making)
- Applicable Compliance Method:  
If required, compliance with the company-established emission factors shall be demonstrated based on the results of emission testing conducted in accordance with Methods 201 and 202 of 40 CFR Part 51, Appendix M.
- d. Emission Limitation:  
VOC emissions shall not exceed 55.0 tpy, based on a rolling, 12-month summation of the monthly emissions.
- fugitive VOC emissions shall not exceed 2.0 tpy, based on a rolling, 12-month summation of the monthly emissions.
- PM10 emissions shall not exceed 2.0 tpy, based on a rolling, 12-month summation of the monthly emissions.
- Applicable Compliance Method:  
Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.
- e. Emission Limitation:  
Visible PE from the stack(s) serving this emissions unit shall not exceed 5% opacity, as a six-minute average.
- Applicable Compliance Method:  
If required, compliance shall be determined according to test Method 9 as set forth in the "Appendix on Test Methods" in 40 CFR Part 60 "Standards of Performance for New Stationary Sources."

**VI. Miscellaneous Requirements**

None

**B. State Only Enforceable Section****I. 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.

**Operations, Property, and/or Equipment -(P464) - precision sand core machine no. 1**

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-114-01 ORC 3704.03(F)	See B.III and B.IV.

**2. Additional Terms and Conditions**

- 2.a None

**II. Operational Restrictions**

None

**III. Monitoring and/or Recordkeeping Requirements**

1. The permit to install for these emissions units P464, P465, P466, P467 and P468 were evaluated based on the actual materials and the design parameters of the emissions units' exhaust system, as specified by the permittee in the permit application. The Ohio EPA's "Toxic Air Contaminant Statute", ORC 3704.03(F), was applied to this/these emissions unit(s) for each toxic air contaminant listed in OAC rule 3745-114-01, using data from the permit application; and modeling was performed for each toxic air contaminant(s) emitted at over one ton per year using an air dispersion model such as SCREEN 3.0, AERMOD, or ISCST3, or other Ohio EPA approved model. The predicted 1-hour maximum ground-level concentration result(s) from the approved air dispersion model, was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC), calculated as described in the Ohio EPA guidance document entitled "Review of New Sources of Air Toxic Emissions, Option A", as follows:
  - a. the exposure limit, expressed as a time-weighted average concentration for a conventional 8-hour workday and a 40-hour workweek, for each toxic compound(s) emitted from the emissions unit(s), (as determined from the raw materials processed and/or coatings or other materials applied) has been documented from one of the following sources and in the following order of preference (TLV was and shall be used, if the chemical is listed):
    - i. threshold limit value (TLV) from the American Conference of Governmental Industrial Hygienists' (ACGIH) "Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices"; or
    - ii. STEL (short term exposure limit) or the ceiling value from the American Conference of Governmental Industrial Hygienists' (ACGIH) "Threshold

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Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices"; the STEL or ceiling value is multiplied by 0.737 to convert the 15-minute exposure limit to an equivalent 8-hour TLV.

- b. The TLV is divided by ten to adjust the standard from the working population to the general public (TLV/10).
- c. This standard is/was then adjusted to account for the duration of the exposure or the operating hours of the emissions unit(s), i.e., "X" hours per day and "Y" days per week, from that of 8 hours per day and 5 days per week. The resulting calculation was (and shall be) used to determine the Maximum Acceptable Ground-Level Concentration (MAGLC).
- d. The following summarizes the results of dispersion modeling for the significant toxic contaminants (emitted at 1 or more tons/year) or "worst case" toxic contaminant(s):

**Toxic contaminant:** phenol

TLV (mg/m<sup>3</sup>): 19.25

Maximum Hourly Emission Rate (lbs/hr): 1.80 (permit total)

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m<sup>3</sup>): 4.77

MAGLC (ug/m<sup>3</sup>): 458

**Toxic contaminant:** m,p-xylene

TLV (mg/m<sup>3</sup>): 434

Maximum Hourly Emission Rate (lbs/hr): 1.15 (permit total)

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m<sup>3</sup>): 6.33

MAGLC (ug/m<sup>3</sup>): 10,338

**Toxic contaminant:** naphthalene

TLV (mg/m<sup>3</sup>): 54

Maximum Hourly Emission Rate (lbs/hr): 0.67 (permit total)

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m<sup>3</sup>): 2.93

MAGLC (ug/m<sup>3</sup>): 1296

The permittee, has demonstrated that emissions of phenol, m,p-xylene and naphthalene, from emissions units P464, P465, P466, P467, P468 and P469, are calculated to be less than eighty per cent of the maximum acceptable ground level concentration (MAGLC); any new raw material or processing agent shall not be applied without evaluating each component toxic contaminant in accordance with ORC 3704.03(F).

[ORC 3704.03(F)(3)(c) and F(4)], [OAC rule 3745-114-01], Options A, Engineering Guide #70

- 2. Prior to making any physical changes to or changes in the method of operation of the emissions unit(s), that could impact the parameters or values that were used in the predicted 1-hour maximum ground-level concentration", the permittee shall re-model

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the change(s) to demonstrate that the MAGLC has not been exceeded. Changes that can affect the parameters/values used in determining the 1-hour maximum ground-level concentration include, but are not limited to, the following:

- a. changes in the composition of the materials used or the use of new materials, that would result in the emission of a new toxic air contaminant with a lower Threshold Limit Value (TLV) than the lowest TLV previously modeled;
- b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any toxic air contaminant listed in OAC rule 3745-114-01, that was modeled from the initial (or last) application; and
- c. physical changes to the emissions unit(s) or its/their exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Toxic Air Contaminant Statute" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01 solely due to a non-restrictive change to a parameter or process operation, where compliance with the ORC 3704.03(F), the statute, has been documented. If the change(s) meet(s) the definition of a "modification" or if a new toxic is emitted, or the modeled toxic(s) is/are expected to exceed the previous modeled level(s), then the permittee shall apply for and obtain a final permit-to-install prior to the change. The Director may consider any significant departure from the operations of the emissions unit, described in the permit-to-install application, as a modification that results in greater emissions than the emissions rate modeled to determine the ground level concentration; and may require the permittee to submit a permit-to-install application for the increased emissions.

[ORC 3704.03(F)(3)(c) and F(4)], [OAC rule 3745-114-01], Options A, Engineering Guide #70

3. The permittee shall collect, record, and retain the following information for each toxic evaluation conducted to determine compliance with the "Toxic Air Contaminant Statute":
  - a. a description of the parameters/values used in each compliance demonstration and the parameters or values changed for any re-evaluation of the toxic(s) modeled (the composition of materials, new toxic contaminants emitted, change in stack/exhaust parameters, etc.);
  - b. the Maximum Acceptable Ground-Level Concentration (MAGLC) for each significant toxic contaminant or worst-case contaminant, calculated in accordance with ORC 3704.03(F);
  - c. a copy of the computer model run(s), that established the predicted 1-hour maximum ground-level concentration that demonstrated the emissions unit(s) to be in compliance with ORC 3704.03(F), initially and for each change that requires re-evaluation of the toxic air contaminant emissions; and
  - d. the documentation of the initial evaluation of compliance with ORC 3704.03(F) and documentation of any determination that was conducted to re-evaluate

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compliance due to a change made to the emissions unit(s) or the materials applied.

[ORC 3704.03(F)(3)(c) and F(4)], [OAC rule 3745-114-01], Options A, Engineering Guide #70

4. The permittee shall maintain a record of any change made to a parameter or value used in the dispersion model, used to demonstrate compliance with ORC 3704.03(F) through the predicted 1-hour maximum ground-level concentration. The record shall include the date and reason(s) for the change and if the change would increase the ground-level concentration.

[ORC 3704.03(F)(3)(c) and F(4)], [OAC rule 3745-114-01], Options A, Engineering Guide #70

#### **IV. Reporting Requirements**

1. The permittee shall submit annual reports to the appropriate Ohio EPA District Office or local air agency, documenting any changes made to a parameter or value used in the dispersion model, that was used to demonstrate compliance with ORC 3704.03(F) through the predicted 1-hour maximum ground-level concentration. If no changes to the emissions unit(s) or the exhaust stack have been made, then the report shall include a statement to this effect. This report shall be postmarked or delivered no later than January 31 following the end of each calendar year.

[ORC 3704.03(F)(3)(c) and F(4)], [OAC rule 3745-114-01], Options A, Engineering Guide #70

#### **V. Testing Requirements**

None

#### **VI. Miscellaneous Requirements**

None

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**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. State and Federally Enforceable Section**

**I. 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.

**Operations, Property, and/or Equipment -(P465) - precision sand core machine no. 2**

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05(C) OAC rule 3745-31-10 through 20	<p>Volatile organic compound emissions (VOC) from emissions units P464, P465, P466, P467, P468 and P469, combined, shall not exceed 55.0 tons per year (tpy), based upon a rolling, 12-month summation of the monthly emissions.</p> <p><u>Receiving hopper and sand mixer (Stack No. 5)</u> VOC emissions shall not exceed 0.10 pound per ton of sand processed.</p> <p><u>Core making (Stack No. 4)</u> VOC emissions shall not exceed 0.60 pound per ton of sand processed.</p> <p><u>Maintenance (metal cleaning of core machine - Stack No. 4):</u> VOC emissions shall not exceed 0.119 pound per ton of sand processed.</p> <p>Fugitive VOC emissions shall not exceed 2.0 tpy, based on a rolling, 12-month summation of the monthly emissions.</p> <p>See A.I.2.a, A.I.2.b., and A.I.2.d.</p>

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OAC rule 3745-31-05(C)	<p>Particulate matter emissions less than or equal to 10 microns in size (PM10) from emissions units P464, P465, P466, P467, P468 and P469, combined, shall not exceed 2.0 tons per year (tpy), based upon a rolling, 12-month summation of the monthly emissions.</p> <p><u>Receiving hopper and sand mixer (Stack No. 5)</u> PM10 emissions shall not exceed 0.0086 lb/ton of sand processed.</p> <p><u>Core making (Stack No. 4)</u> PM10 emissions shall not exceed 0.021 lb/ton of sand processed.</p> <p>Visible PE from the stack(s) serving this emissions unit shall not exceed 5% opacity, as a six-minute average.</p> <p>See A.I.2.b, A.I.2.c, and A.I.2.e.</p>
OAC rule 3745-17-07(A) OAC rule 3745-17-11(B)	The emission limitations specified by these rules are less stringent than the emissions limitations established pursuant to OAC rule 3745-31-05(C).
OAC rule 3745-21-07(G)	Exempt, pursuant to OAC rule 3745-21-07(G)(9)(i).

**2. Additional Terms and Conditions**

- 2.a** The permittee shall employ best available control technology (BACT) on this emissions unit for VOC. BACT has been determined to be the use of the following:
- i. sand mixing - no control technologies were cost effective.
  - ii. core making - a wet scrubber. The wet scrubber shall achieve a control efficiency of 95% for the catalyst dimethyl isopropyl amine (DMIPA) and 30% for all other VOC's.
- 2.b** The rolling, 12-month emission limitations are federally enforceable limitations established for the purpose of reducing emissions. The emission limitations are based on the federally enforceable restriction on the amount of sand processed (See A.II.1).
- 2.c** All emissions of particulate emissions are PM10.
- 2.d** The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the emissions of VOC from this air contaminant source since the potential to emit is less than ten tons per year, taking into account the federally enforceable restriction on the amount of sand processed and the use of a wet scrubber.
- 2.e** The Best Available Technology (BAT) requirements under OAC rule

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3745-31-05(A)(3) do not apply to the emissions of PM10 from this air contaminant source since the potential to emit is less than ten tons per year, taking into account the federally enforceable restriction on the amount of sand processed, the use of a baghouse and cyclone.

## **II. Operational Restrictions**

1. The maximum annual sand processed in emissions units P464 through P469, combined, shall not exceed 133,875 tons, based upon a rolling, 12-month summation of sand processed.

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

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<u>Month(s)</u>	<u>Maximum Allowable Cumulative Amount of Sand Processed(tons)</u>
1	13,400
1-2	26,800
1-3	40,200
1-4	53,600
1-5	67,000
1-6	80,400
1-7	93,800
1-8	107,200
1-9	120,600
1-10	125,067
1-11	129,534
1-12	133,875

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

2. The permittee shall operate the baghouse at all times when this emissions unit is in operation.
3. To ensure proper operation of the catalyst gas scrubber during operation of this emissions unit, the permittee shall employ an "interlock system" that will shutdown the cold box core machine within 30 minutes after the catalyst gas scrubber liquor pH rises above 5.

The "interlock system" shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations with any modifications deemed necessary by the permittee.

**III. Monitoring and/or Recordkeeping Requirements**

1. The permittee shall collect and record the following information each month for emissions units P464, through P469, combined:
  - a. the quantity of sand processed, in tons;
  - b. for the first 12 months of operation following the issuance of this permit, the cumulative quantity of sand processed, in tons; and
  - c. after the first 12 months operation, the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly sand processed.

\*The amount of sand processed through this emissions unit is equivalent to the amount of sand received in emissions unit P906. The monitoring and record keeping associated with the sand received in emissions unit P906 can be used to fulfill the

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requirements in this section.

2. In addition to the above information, the permittee shall also record the following information each month for emissions units P464, P465, P466, P467, P468 and P469, combined:

- a. the calculated emission rate for VOC, in tons, determined by the following equation:

$$\text{TOCE} = (\text{A.III.1.a}) \times (\text{A} + \text{B} + \text{C}) \times \text{ton}/2000 \text{ lbs}$$

where:

TOCE = total VOC emissions, in tons

A = the VOC emission factor for the sand receiving hopper and sand mixing (0.10 lb VOC/ton of sand processed)

B = the VOC emission factor for the core machine (0.60 lb VOC/ton of sand processed)

C = the VOC emission factor for metal cleaning (0.119 lb VOC/ton of sand processed)

- b. the calculated emission rate for fugitive VOC, in tons, determined by the following equation:

$$\text{fugitive VOC} = (\text{A.III.1.a}) \times \text{the emission factor for fugitive VOC emissions (0.030 lb fugitive VOC/ton of sand)} \times \text{ton}/2000 \text{ lbs}$$

- c. the calculated emission rate for PM10, in tons, determined by the following equation:

$$\text{TPM10} = (\text{A.III.1.a}) \times (\text{D} + \text{E}) \times \text{ton}/2000 \text{ lbs}$$

where:

TPM10 = total PM10 emissions, in tons

D = the PM10 emission factor for the sand receiving hopper and sand mixing (0.0086 lb PM10/ton of sand processed)

E = the PM10 emission factor for the core machine (0.021 lb PM10/ton of sand processed)

- d. the annual VOC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates;

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- e. the annual PM10 emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates; and
  - f. the annual fugitive VOC emission rate, in tons, based upon the rolling, 12-month summation of the monthly emission rates.
3. The permittee shall maintain a log for the interlock system that identifies each time period when the pH exceeded 5, and the emissions unit was not shut down within 30 minutes thereafter.
  4. The permittee shall properly operate and maintain equipment to continuously monitor the liquor pH and the scrubber liquor flow rate while the emissions unit is in operation. The monitoring devices and any recorders shall be 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 catalyst gas scrubber liquor pH, on a once-per-shift basis;
- b. the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once-per-shift basis; and
- c. the operating times for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.

Whenever the monitored values for the catalyst gas scrubber liquor pH and catalyst gas scrubber liquor flow rate deviate from the range specified below, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation: the date and time the deviation began and the magnitude of the deviation at that time, the date(s) the investigation was conducted, the names of the personnel who conducted the investigation, and the findings and recommendations.

In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the operation of the control equipment within the acceptable ranges specified below, unless the permittee determines that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation ended. The permittee shall maintain records of the following information for each corrective action taken: a description of the corrective action, the date it was completed, the date and time the deviation ended, the total period of time (in minutes) during which there was a deviation, the catalyst gas scrubber liquor pH and catalyst gas scrubber liquor flow rate immediately after the corrective action, and the names of the personnel who performed the work. Investigation and records required by this paragraph does not eliminate the need to comply with the requirements of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.

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- d. The catalyst gas scrubber liquor pH shall be continuously maintained at a value of less than or equal to 5 at all times while the emissions unit is in operation, or as established during the most recent performance test that demonstrated the emissions unit was in compliance.
- e. The catalyst gas scrubber liquor flow rate shall be continuously maintained at a value of not less than 3 gallons per minute per 1,000 cfm if gas flow at all times while the emissions unit is in operation, or as established during the most recent performance test that demonstrated the emissions unit was in compliance.

These ranges are effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the appropriate Ohio EPA District Office or local air agency. The permittee may request revisions to the ranges based upon information obtained during future tests that demonstrate compliance with the allowable VOC emission rate for this emissions unit. In addition, approved revisions to the ranges will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of administrative modification.

- 5. The permittee shall maintain records documenting any time periods when the emissions unit was in operation and the baghouse was not operating.
- 6. The permittee shall perform weekly\* checks when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the baghouse and from the cyclone serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, 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 date and time of the visible emission observation;
  - b. the identification of the stack observed;
  - c. the color of the emissions;
  - d. the total duration of any visible emission observation; and
  - e. the corrective actions, if any, taken to eliminate the visible emissions.

\*once during each normal calendar week

**IV. Reporting Requirements**

- 1. The permittee shall submit quarterly deviation (excursion) reports, which identify all exceedances of the following:
  - a. for the first 12 calendar months of operation following the issuance of this permit, the restriction on the maximum allowable cumulative quantity of sand processed;

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- b. after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month restriction on the quantity of sand processed; and
- c. the rolling, 12-month emission limitations for PM10, VOC, and fugitive VOC;

These quarterly deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit deviation (excursion) reports that identify any time periods when the emissions unit was in operation and the baghouse(s) was(were) not operating. Each report shall be submitted within 30 days after the deviation occurs.
3. The permittee shall submit a written report to the Director identifying all time periods when the pH exceeded 5, and the emissions unit was not shut down within 30 minutes thereafter. Each report shall be submitted within 30 days after the occurrence.
4. The permittee shall submit quarterly reports that identify the following information concerning the operation of the control equipment during the operation of this emissions unit:
  - a. each period of time when the liquor pH of the catalyst gas scrubber was outside of the acceptable range;
  - b. each period of time when the catalyst gas scrubber liquor flow rate was outside of the acceptable range;
  - c. an identification of each incident of deviation described in (a) and (b) above where a prompt investigation was not conducted;
  - d. an identification of each incident of deviation described in (a) and (b) where prompt corrective action, that would bring the liquor pH and/or the catalyst gas scrubber liquor flow rate into compliance with the acceptable range, was determined to be necessary and was not taken;
  - e. an identification of each incident of deviation described in (a) and (b) where proper records were not maintained for the investigation and/or the corrective action.

These quarterly reports shall be submitted (i.e., postmarked) by January 31, April 30, July 31, and October 31 of each year; and each report shall cover the previous calendar quarter.

5. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the baghouse and from the cyclone serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) by January 31 and July 31 of each year and shall cover the previous 6-month period.

## V. Testing Requirements

1. The permittee shall conduct, or have conducted, emission testing for emissions units

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P464, P465, P466, P467, P468 and P469 in accordance with the following requirements:

- a. The emission testing shall be conducted within 180 days after achieving the maximum production rate at which emissions units P464, P465, P466, P467, P468 and P469 will be operated, but no later than June 30, 2010.
- b. The emission testing shall be conducted to demonstrate compliance with the following:
  - i. for the receiving hopper and sand mixer: 0.10 lb/ton of sand for VOC;
  - ii. for core making: 0.60 lb/ton of sand & control efficiencies for VOC; and
  - iii. for metal cleaning: 0.119 lb VOC/ton of sand.
- c. The following test methods shall be employed to demonstrate compliance with the above emission limitations:
  - i. for total VOC, Methods 1-4 and 18, 25 or 25A of 40 CFR Part 60, Appendix A. Appropriate methods shall be used in conjunction with the test methods and procedures specified in Methods 18, 25, or 25A of 40 CFR Part 60, Appendix A for determining total VOC mass emissions.

Alternative U.S. EPA-approved test methods may be used with prior approval from the Ohio EPA, NWDO. The test method(s) which must be employed to demonstrate compliance with the control efficiencies are specified below.

- d. 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 specified in Methods 18, 25, or 25A of 40 CFR Part 60, Appendix A for VOC emissions .
- e. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases."
- f. The test(s) shall be conducted while emissions units P464, P465, P466, P467, P468 and P469 are operating at their maximum capacities, unless otherwise specified or approved by the Ohio EPA, NWDO.
- g. During emission testing, the permittee shall also record the following information:
  - i. the pH range for the scrubbing liquid; and
  - ii. the scrubber water flow rate, in gallons/minute.
- h. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA, NWDO. 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, NWDO's refusal to accept the results of the emission test(s).

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Personnel from the Ohio EPA, NWDO 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 of the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA, NWDO 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 Ohio EPA, NWDO.

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

a. Emission Limitation:

The maximum annual amount of sand processed shall not exceed 133,875 tons per rolling, 12-month period.

Compliance Method:

Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

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- b. Emission Limitations:  
0.10 lb of VOC per ton of sand (hopper and mixing)  
0.60 lb of VOC per ton of sand (core making)  
0.119 lb of VOC per ton of sand (metal cleaning)
- Applicable Compliance Method:  
Compliance shall be demonstrated based on the results of emission testing conducted in accordance with Methods 1-4 and 18, 25 or 25A of 40 CFR Part 60, Appendix A.
- c. Emission Limitations:  
PM10 emissions shall not exceed 0.0086 lb/ton of sand (hopper and mixing)  
PM10 emissions shall not exceed 0.021 lb/ton of sand (core making)
- Applicable Compliance Method:  
If required, compliance with the company-established emission factors shall be demonstrated based on the results of emission testing conducted in accordance with Methods 201 and 202 of 40 CFR Part 51, Appendix M.
- d. Emission Limitation:  
VOC emissions shall not exceed 55.0 tpy, based on a rolling, 12-month summation of the monthly emissions.
- fugitive VOC emissions shall not exceed 2.0 tpy, based on a rolling, 12-month summation of the monthly emissions.
- PM10 emissions shall not exceed 2.0 tpy, based on a rolling, 12-month summation of the monthly emissions.
- Applicable Compliance Method:  
Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.
- e. Emission Limitation:  
Visible PE from the stack(s) serving this emissions unit shall not exceed 5% opacity, as a six-minute average.
- Applicable Compliance Method:  
If required, compliance shall be determined according to test Method 9 as set forth in the "Appendix on Test Methods" in 40 CFR Part 60 "Standards of Performance for New Stationary Sources."

## VI. Miscellaneous Requirements

None

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**B. State Only Enforceable Section**

**I. 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.

**Operations, Property, and/or Equipment - (P465) - precision sand core machine no. 2**

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-114-01 ORC 3704.03(F)	See B.III and B.IV.

**2. Additional Terms and Conditions**

2.a None

**II. Operational Restrictions**

None

**III. Monitoring and/or Recordkeeping Requirements**

1. The permit to install for these emissions units P464, P465, P466, P467 and P468 were evaluated based on the actual materials and the design parameters of the emissions units' exhaust system, as specified by the permittee in the permit application. The Ohio EPA's "Toxic Air Contaminant Statute", ORC 3704.03(F), was applied to this/these emissions unit(s) for each toxic air contaminant listed in OAC rule 3745-114-01, using data from the permit application; and modeling was performed for each toxic air contaminant(s) emitted at over one ton per year using an air dispersion model such as SCREEN 3.0, AERMOD, or ISCST3, or other Ohio EPA approved model. The predicted 1-hour maximum ground-level concentration result(s) from the approved air dispersion model, was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC), calculated as described in the Ohio EPA guidance document entitled "Review of New Sources of Air Toxic Emissions, Option A", as follows:
  - a. the exposure limit, expressed as a time-weighted average concentration for a conventional 8-hour workday and a 40-hour workweek, for each toxic compound(s) emitted from the emissions unit(s), (as determined from the raw materials processed and/or coatings or other materials applied) has been documented from one of the following sources and in the following order of preference (TLV was and shall be used, if the chemical is listed):
    - i. threshold limit value (TLV) from the American Conference of

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Governmental Industrial Hygienists' (ACGIH) "Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices"; or

- ii. STEL (short term exposure limit) or the ceiling value from the American Conference of Governmental Industrial Hygienists' (ACGIH) "Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices"; the STEL or ceiling value is multiplied by 0.737 to convert the 15-minute exposure limit to an equivalent 8-hour TLV.
- b. The TLV is divided by ten to adjust the standard from the working population to the general public (TLV/10).
- c. This standard is/was then adjusted to account for the duration of the exposure or the operating hours of the emissions unit(s), i.e., "X" hours per day and "Y" days per week, from that of 8 hours per day and 5 days per week. The resulting calculation was (and shall be) used to determine the Maximum Acceptable Ground-Level Concentration (MAGLC).
- d. The following summarizes the results of dispersion modeling for the significant toxic contaminants (emitted at 1 or more tons/year) or "worst case" toxic contaminant(s):

**Toxic contaminant:** phenolTLV (mg/m<sup>3</sup>): 19.25

Maximum Hourly Emission Rate (lbs/hr): 1.80 (permit total)

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m<sup>3</sup>): 4.77MAGLC (ug/m<sup>3</sup>): 458**Toxic contaminant:** m,p-xyleneTLV (mg/m<sup>3</sup>): 434

Maximum Hourly Emission Rate (lbs/hr): 1.15 (permit total)

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m<sup>3</sup>): 6.33MAGLC (ug/m<sup>3</sup>): 10,338**Toxic contaminant:** naphthaleneTLV (mg/m<sup>3</sup>): 54

Maximum Hourly Emission Rate (lbs/hr): 0.67 (permit total)

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m<sup>3</sup>): 2.93MAGLC (ug/m<sup>3</sup>): 1296

The permittee, has demonstrated that emissions of phenol, m,p-xylene and naphthalene, from emissions units P464, P465, P466, P467, P468 and P469, are calculated to be less than eighty per cent of the maximum acceptable ground level concentration (MAGLC); any new raw material or processing agent shall not be applied without evaluating each component toxic contaminant in accordance with ORC 3704.03(F).

[ORC 3704.03(F)(3)(c) and F(4)], [OAC rule 3745-114-01], Options A, Engineering Guide #70

2. Prior to making any physical changes to or changes in the method of operation of the emissions unit(s), that could impact the parameters or values that were used in the

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predicted 1-hour maximum ground-level concentration", the permittee shall re-model the change(s) to demonstrate that the MAGLC has not been exceeded. Changes that can affect the parameters/values used in determining the 1-hour maximum ground-level concentration include, but are not limited to, the following:

- a. changes in the composition of the materials used or the use of new materials, that would result in the emission of a new toxic air contaminant with a lower Threshold Limit Value (TLV) than the lowest TLV previously modeled;
- b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any toxic air contaminant listed in OAC rule 3745-114-01, that was modeled from the initial (or last) application; and
- c. physical changes to the emissions unit(s) or its/their exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Toxic Air Contaminant Statute" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01 solely due to a non-restrictive change to a parameter or process operation, where compliance with the ORC 3704.03(F), the statute, has been documented. If the change(s) meet(s) the definition of a "modification" or if a new toxic is emitted, or the modeled toxic(s) is/are expected to exceed the previous modeled level(s), then the permittee shall apply for and obtain a final permit-to-install prior to the change. The Director may consider any significant departure from the operations of the emissions unit, described in the permit-to-install application, as a modification that results in greater emissions than the emissions rate modeled to determine the ground level concentration; and may require the permittee to submit a permit-to-install application for the increased emissions.

[ORC 3704.03(F)(3)(c) and F(4)], [OAC rule 3745-114-01], Options A, Engineering Guide #70

3. The permittee shall collect, record, and retain the following information for each toxic evaluation conducted to determine compliance with the "Toxic Air Contaminant Statute":
  - a. a description of the parameters/values used in each compliance demonstration and the parameters or values changed for any re-evaluation of the toxic(s) modeled (the composition of materials, new toxic contaminants emitted, change in stack/exhaust parameters, etc.);
  - b. the Maximum Acceptable Ground-Level Concentration (MAGLC) for each significant toxic contaminant or worst-case contaminant, calculated in accordance with ORC 3704.03(F);
  - c. a copy of the computer model run(s), that established the predicted 1-hour

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maximum ground-level concentration that demonstrated the emissions unit(s) to be in compliance with ORC 3704.03(F), initially and for each change that requires re-evaluation of the toxic air contaminant emissions; and

- d. the documentation of the initial evaluation of compliance with ORC 3704.03(F) and documentation of any determination that was conducted to re-evaluate compliance due to a change made to the emissions unit(s) or the materials applied.

[ORC 3704.03(F)(3)(c) and F(4)], [OAC rule 3745-114-01], Options A, Engineering Guide #70

4. The permittee shall maintain a record of any change made to a parameter or value used in the dispersion model, used to demonstrate compliance with ORC 3704.03(F) through the predicted 1-hour maximum ground-level concentration. The record shall include the date and reason(s) for the change and if the change would increase the ground-level concentration.

[ORC 3704.03(F)(3)(c) and F(4)], [OAC rule 3745-114-01], Options A, Engineering Guide #70

#### **IV. Reporting Requirements**

1. The permittee shall submit annual reports to the appropriate Ohio EPA District Office or local air agency, documenting any changes made to a parameter or value used in the dispersion model, that was used to demonstrate compliance with ORC 3704.03(F) through the predicted 1-hour maximum ground-level concentration. If no changes to the emissions unit(s) or the exhaust stack have been made, then the report shall include a statement to this effect. This report shall be postmarked or delivered no later than January 31 following the end of each calendar year.

[ORC 3704.03(F)(3)(c) and F(4)], [OAC rule 3745-114-01], Options A, Engineering Guide #70

#### **V. Testing Requirements**

None

#### **VI. Miscellaneous Requirements**

None

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**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. State and Federally Enforceable Section**

**I. 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.

**Operations, Property, and/or Equipment - (P466) - precision sand core machine no. 3**

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05(C) OAC rule 3745-31-10 through 20	<p>Volatile organic compound emissions (VOC) from emissions units P464, P465, P466, P467, P468 and P469, combined, shall not exceed 55.0 tons per year (tpy), based upon a rolling, 12-month summation of the monthly emissions.</p> <p><u>Receiving hopper and sand mixer (Stack No. 5)</u> VOC emissions shall not exceed 0.10 pound per ton of sand processed.</p> <p><u>Core making (Stack No. 4)</u> VOC emissions shall not exceed 0.60 pound per ton of sand processed.</p> <p><u>Maintenance (metal cleaning of core machine - Stack No. 4):</u> VOC emissions shall not exceed 0.119 pound per ton of sand processed.</p> <p>Fugitive VOC emissions shall not exceed 2.0 tpy, based on a rolling, 12-month summation of the monthly emissions.</p> <p>See A.I.2.a, A.I.2.b, and A.I.2.d.</p>

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OAC rule 3745-31-05(C)	<p>Particulate matter emissions less than or equal to 10 microns in size (PM10) from emissions units P464, P465, P466, P467, P468 and P469, combined, shall not exceed 2.0 tons per year (tpy), based upon a rolling, 12-month summation of the monthly emissions.</p> <p><u>Receiving hopper and sand mixer (Stack No. 5)</u> PM10 emissions shall not exceed 0.0086 lb/ton of sand processed.</p> <p><u>Core making (Stack No. 4)</u> PM10 emissions shall not exceed 0.021 lb/ton of sand processed.</p> <p>Visible PE from the stack(s) serving this emissions unit shall not exceed 5% opacity, as a six-minute average.</p> <p>See A.I.2.b, A.I.2.c, and A.I.2.e.</p>
OAC rule 3745-17-07(A) OAC rule 3745-17-11(B)	The emission limitations specified by these rules are less stringent than the emissions limitations established pursuant to OAC rule 3745-31-05(C).
OAC rule 3745-21-07(G)	Exempt, pursuant to OAC rule 3745-21-07(G)(9)(i).

## 2. Additional Terms and Conditions

- 2.a** The permittee shall employ best available control technology (BACT) on this emissions unit for VOC. BACT has been determined to be the use of the following:
- i. sand mixing - no control technologies were cost effective.
  - ii. core making - a wet scrubber. The wet scrubber shall achieve a control efficiency of 95% for the catalyst dimethyl isopropyl amine (DMIPA) and 30% for all other VOC's.
- 2.b** The rolling, 12-month emission limitations are federally enforceable limitations established for the purpose of reducing emissions. The emission limitations are based on the federally enforceable restriction on the amount of sand processed (See A.II.1).
- 2.c** All emissions of particulate emissions are PM10.
- 2.d** The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to VOC from this air contaminant source since the potential to emit is less than ten tons per year, taking into account the federally enforceable restriction on the amount of sand processed and the use of a wet scrubber.
- 2.e** The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to PM10 from this air contaminant source since the potential to emit is less than ten tons per year, taking into account the federally enforceable restriction on the amount of sand processed, the use of a baghouse and cyclone.

## II. Operational Restrictions

1. The maximum annual sand processed in emissions units P464 through P469, combined, shall not exceed 133,875 tons, based upon a rolling, 12-month summation of sand processed.

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

<u>Month(s)</u>	<u>Maximum Allowable Cumulative Amount of Sand Processed(tons)</u>
1	13,400
1-2	26,800
1-3	40,200
1-4	53,600
1-5	67,000
1-6	80,400
1-7	93,800
1-8	107,200
1-9	120,600
1-10	125,067
1-11	129,534
1-12	133,875

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

2. The permittee shall operate the baghouse at all times when this emissions unit is in operation.
3. To ensure proper operation of the catalyst gas scrubber during operation of this emissions unit, the permittee shall employ an "interlock system" that will shutdown the cold box core machine within 30 minutes after the catalyst gas scrubber liquor pH rises above 5.

The "interlock system" shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations with any modifications deemed necessary by the permittee.

## III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall collect and record the following information each month for emissions units P464, through P469, combined:
  - a. the quantity of sand processed, in tons;
  - b. for the first 12 months of operation following the issuance of this permit, the cumulative quantity of sand processed, in tons; and
  - c. after the first 12 months operation, the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly sand processed.

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\*The amount of sand processed through this emissions unit is equivalent to the amount of sand received in emissions unit P906. The monitoring and record keeping associated with the sand received in emissions unit P906 can be used to fulfill the requirements in this section.

2. In addition to the above information, the permittee shall also record the following information each month for emissions units P464, P465, P466, P467, P468 and P469, combined:
  - a. the calculated emission rate for VOC, in tons, determined by the following equation:
 
$$\text{TOCE} = (\text{A.III.1.a}) \times (\text{A} + \text{B} + \text{C}) \times \text{ton}/2000 \text{ lbs}$$
 where:
 

TOCE = total VOC emissions, in tons

A = the VOC emission factor for the sand receiving hopper and sand mixing (0.10 lb VOC/ton of sand processed)

B = the VOC emission factor for the core machine (0.60 lb VOC/ton of sand processed)

C = the VOC emission factor for metal cleaning (0.119 lb VOC/ton of sand processed)
  - b. the calculated emission rate for fugitive VOC, in tons, determined by the following equation:
 
$$\text{fugitive VOC} = (\text{A.III.1.a}) \times \text{the emission factor for fugitive VOC emissions (0.030 lb fugitive VOC/ton of sand)} \times \text{ton}/2000 \text{ lbs}$$
  - c. the calculated emission rate for PM10, in tons, determined by the following equation:
 
$$\text{TPM10} = (\text{A.III.1.a}) \times (\text{D} + \text{E}) \times \text{ton}/2000 \text{ lbs}$$
 where:
 

TPM10 = total PM10 emissions, in tons

D = the PM10 emission factor for the sand receiving hopper and sand mixing (0.0086 lb PM10/ton of sand processed)

E = the PM10 emission factor for the core machine (0.021 lb PM10/ton of sand processed)
  - d. the annual VOC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates;

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- e. the annual PM10 emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates; and
  - f. the annual fugitive VOC emission rate, in tons, based upon the rolling, 12-month summation of the monthly emission rates.
3. The permittee shall maintain a log for the interlock system that identifies each time period when the pH exceeded 5, and the emissions unit was not shut down within 30 minutes thereafter.
  4. The permittee shall properly operate and maintain equipment to continuously monitor the liquor pH and the scrubber liquor flow rate while the emissions unit is in operation. The monitoring devices and any recorders shall be 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 catalyst gas scrubber liquor pH, on a once-per-shift basis;
- b. the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once-per-shift basis; and
- c. the operating times for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.

Whenever the monitored values for the catalyst gas scrubber liquor pH and catalyst gas scrubber liquor flow rate deviate from the range specified below, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation: the date and time the deviation began and the magnitude of the deviation at that time, the date(s) the investigation was conducted, the names of the personnel who conducted the investigation, and the findings and recommendations.

In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the operation of the control equipment within the acceptable ranges specified below, unless the permittee determines that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation ended. The permittee shall maintain records of the following information for each corrective action taken: a description of the corrective action, the date it was completed, the date and time the deviation ended, the total period of time (in minutes) during which there was a deviation, the catalyst gas scrubber liquor pH and catalyst gas scrubber liquor flow rate immediately after the corrective action, and the names of the personnel who performed the work. Investigation and records required by this paragraph does not eliminate the need to comply with the requirements of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.

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- d. The catalyst gas scrubber liquor pH shall be continuously maintained at a value of less than or equal to 5 at all times while the emissions unit is in operation, or as established during the most recent performance test that demonstrated the emissions unit was in compliance.
- e. The catalyst gas scrubber liquor flow rate shall be continuously maintained at a value of not less than 3 gallons per minute per 1,000 cfm if gas flow at all times while the emissions unit is in operation, or as established during the most recent performance test that demonstrated the emissions unit was in compliance.

These ranges are effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the appropriate Ohio EPA District Office or local air agency. The permittee may request revisions to the ranges based upon information obtained during future tests that demonstrate compliance with the allowable VOC emission rate for this emissions unit. In addition, approved revisions to the ranges will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of administrative modification.

5. The permittee shall maintain records documenting any time periods when the emissions unit was in operation and the baghouse was not operating.
6. The permittee shall perform weekly\* checks when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the baghouse and from the cyclone serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, 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 date and time of the visible emission observation;
  - b. the identification of the stack observed;
  - c. the color of the emissions;
  - d. the total duration of any visible emission observation; and
  - e. the corrective actions, if any, taken to eliminate the visible emissions.

\*once during each normal calendar week

#### IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, which identify all exceedances of the following:
  - a. for the first 12 calendar months of operation following the issuance of this permit, the restriction on the maximum allowable cumulative quantity of sand processed;;
  - b. after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month restriction on the quantity of sand processed; and
  - c. the rolling, 12-month emission limitations for PM10, VOC, and fugitive VOC;

These quarterly deviation reports shall be submitted in accordance with the General

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Terms and Conditions of this permit.

2. The permittee shall submit deviation (excursion) reports that identify any time periods when the emissions unit was in operation and the baghouse(s) was(were) not operating. Each report shall be submitted within 30 days after the deviation occurs.
3. The permittee shall submit a written report to the Director identifying all time periods when the pH exceeded 5, and the emissions unit was not shut down within 30 minutes thereafter. Each report shall be submitted within 30 days after the occurrence.
4. The permittee shall submit quarterly reports that identify the following information concerning the operation of the control equipment during the operation of this emissions unit:
  - a. each period of time when the liquor pH of the catalyst gas scrubber was outside of the acceptable range;
  - b. each period of time when the catalyst gas scrubber liquor flow rate was outside of the acceptable range;
  - c. an identification of each incident of deviation described in (a) and (b) above where a prompt investigation was not conducted;
  - d. an identification of each incident of deviation described in (a) and (b) where prompt corrective action, that would bring the liquor pH and/or the catalyst gas scrubber liquor flow rate into compliance with the acceptable range, was determined to be necessary and was not taken;
  - e. an identification of each incident of deviation described in (a) and (b) where proper records were not maintained for the investigation and/or the corrective action.

These quarterly reports shall be submitted (i.e., postmarked) by January 31, April 30, July 31, and October 31 of each year; and each report shall cover the previous calendar quarter.

5. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the baghouse and from the cyclone serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) by January 31 and July 31 of each year and shall cover the previous 6-month period.

**V. Testing Requirements**

1. The permittee shall conduct, or have conducted, emission testing for emissions units P464, P465, P466, P467, P468 and P469 in accordance with the following

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requirements:

- a. The emission testing shall be conducted within 180 days after achieving the maximum production rate at which emissions units P464, P465, P466, P467, P468 and P469 will be operated, but no later than June 30, 2010.
- b. The emission testing shall be conducted to demonstrate compliance with the following:
  - i. for the receiving hopper and sand mixer: 0.10 lb/ton of sand for VOC;
  - ii. for core making: 0.60 lb/ton of sand & control efficiencies for VOC; and
  - iii. for metal cleaning: 0.119 lb VOC/ton of sand.
- c. The following test methods shall be employed to demonstrate compliance with the above emission limitations:
  - i. for total VOC, Methods 1-4 and 18, 25 or 25A of 40 CFR Part 60, Appendix A. Appropriate methods shall be used in conjunction with the test methods and procedures specified in Methods 18, 25, or 25A of 40 CFR Part 60, Appendix A for determining total VOC mass emissions.

Alternative U.S. EPA-approved test methods may be used with prior approval from the Ohio EPA, NWDO. The test method(s) which must be employed to demonstrate compliance with the control efficiencies are specified below.

- d. 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 specified in Methods 18, 25, or 25A of 40 CFR Part 60, Appendix A for VOC emissions .
- e. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases."
- f. The test(s) shall be conducted while emissions units P464, P465, P466, P467, P468 and P469 are operating at their maximum capacities, unless otherwise specified or approved by the Ohio EPA, NWDO.
- g. During emission testing, the permittee shall also record the following information:
  - i. the pH range for the scrubbing liquid; and
  - ii. the scrubber water flow rate, in gallons/minute.
- h. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA, NWDO. 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, NWDO's refusal to accept the results of the emission test(s).

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Personnel from the Ohio EPA, NWDO 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 of the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA, NWDO 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 Ohio EPA, NWDO.

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

- a. Emission Limitation:

The maximum annual amount of sand processed shall not exceed 133,875 tons per rolling, 12-month period.

Compliance Method:

Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

- b. Emission Limitations:

0.10 lb of VOC per ton of sand (hopper and mixing)

0.60 lb of VOC per ton of sand (core making)

0.119 lb of VOC per ton of sand (metal cleaning)

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Applicable Compliance Method:

Compliance shall be demonstrated based on the results of emission testing conducted in accordance with Methods 1-4 and 18, 25 or 25A of 40 CFR Part 60, Appendix A.

c. Emission Limitations:

PM10 emissions shall not exceed 0.0086 lb/ton of sand (hopper and mixing)  
PM10 emissions shall not exceed 0.021 lb/ton of sand (core making)

Applicable Compliance Method:

If required, compliance with the company-established emission factors shall be demonstrated based on the results of emission testing conducted in accordance with Methods 201 and 202 of 40 CFR Part 51, Appendix M.

d. Emission Limitation:

VOC emissions shall not exceed 55.0 tpy, based on a rolling, 12-month summation of the monthly emissions.

fugitive VOC emissions shall not exceed 2.0 tpy, based on a rolling, 12-month summation of the monthly emissions.

PM10 emissions shall not exceed 2.0 tpy, based on a rolling, 12-month summation of the monthly emissions.

Applicable Compliance Method:

Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

e. Emission Limitation:

Visible PE from the stack(s) serving this emissions unit shall not exceed 5% opacity, as a six-minute average.

Applicable Compliance Method:

If required, compliance shall be determined according to test Method 9 as set forth in the "Appendix on Test Methods" in 40 CFR Part 60 "Standards of Performance for New Stationary Sources."

**VI. Miscellaneous Requirements**

None

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**B. State Only Enforceable Section**

**I. 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.

**Operations, Property, and/or Equipment -(P466) - precision sand core machine no. 3**

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-114-01 ORC 3704.03(F)	See B.III and B.IV.

**2. Additional Terms and Conditions**

2.a None

**II. Operational Restrictions**

None

**III. Monitoring and/or Recordkeeping Requirements**

1. The permit to install for these emissions units P464, P465, P466, P467 and P468 were evaluated based on the actual materials and the design parameters of the emissions units' exhaust system, as specified by the permittee in the permit application. The Ohio EPA's "Toxic Air Contaminant Statute", ORC 3704.03(F), was applied to this/these emissions unit(s) for each toxic air contaminant listed in OAC rule 3745-114-01, using data from the permit application; and modeling was performed for each toxic air contaminant(s) emitted at over one ton per year using an air dispersion model such as SCREEN 3.0, AERMOD, or ISCST3, or other Ohio EPA approved model. The predicted 1-hour maximum ground-level concentration result(s) from the approved air dispersion model, was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC), calculated as described in the Ohio EPA guidance document entitled "Review of New Sources of Air Toxic Emissions, Option A", as follows:
  - a. the exposure limit, expressed as a time-weighted average concentration for a conventional 8-hour workday and a 40-hour workweek, for each toxic compound(s) emitted from the emissions unit(s), (as determined from the raw materials processed and/or coatings or other materials applied) has been documented from one of the following sources and in the following order of preference (TLV was and shall be used, if the chemical is listed):
    - i. threshold limit value (TLV) from the American Conference of

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Governmental Industrial Hygienists' (ACGIH) "Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices"; or

- ii. STEL (short term exposure limit) or the ceiling value from the American Conference of Governmental Industrial Hygienists' (ACGIH) "Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices"; the STEL or ceiling value is multiplied by 0.737 to convert the 15-minute exposure limit to an equivalent 8-hour TLV.
- b. The TLV is divided by ten to adjust the standard from the working population to the general public (TLV/10).
- c. This standard is/was then adjusted to account for the duration of the exposure or the operating hours of the emissions unit(s), i.e., "X" hours per day and "Y" days per week, from that of 8 hours per day and 5 days per week. The resulting calculation was (and shall be) used to determine the Maximum Acceptable Ground-Level Concentration (MAGLC).
- d. The following summarizes the results of dispersion modeling for the significant toxic contaminants (emitted at 1 or more tons/year) or "worst case" toxic contaminant(s):

**Toxic contaminant:** phenolTLV (mg/m<sup>3</sup>): 19.25

Maximum Hourly Emission Rate (lbs/hr): 1.80 (permit total)

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m<sup>3</sup>): 4.77MAGLC (ug/m<sup>3</sup>): 458**Toxic contaminant:** m,p-xyleneTLV (mg/m<sup>3</sup>): 434

Maximum Hourly Emission Rate (lbs/hr): 1.15 (permit total)

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m<sup>3</sup>): 6.33MAGLC (ug/m<sup>3</sup>): 10,338**Toxic contaminant:** naphthaleneTLV (mg/m<sup>3</sup>): 54

Maximum Hourly Emission Rate (lbs/hr): 0.67 (permit total)

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m<sup>3</sup>): 2.93MAGLC (ug/m<sup>3</sup>): 1296

The permittee, has demonstrated that emissions of phenol, m,p-xylene and naphthalene, from emissions units P464, P465, P466, P467, P468 and P469, are calculated to be less than eighty per cent of the maximum acceptable ground level concentration (MAGLC); any new raw material or processing agent shall not be applied without evaluating each component toxic contaminant in accordance with ORC 3704.03(F).

[ORC 3704.03(F)(3)(c) and F(4)], [OAC rule 3745-114-01], Options A, Engineering Guide #70

2. Prior to making any physical changes to or changes in the method of operation of the

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emissions unit(s), that could impact the parameters or values that were used in the predicted 1-hour maximum ground-level concentration", the permittee shall re-model the change(s) to demonstrate that the MAGLC has not been exceeded. Changes that can affect the parameters/values used in determining the 1-hour maximum ground-level concentration include, but are not limited to, the following:

- a. changes in the composition of the materials used or the use of new materials, that would result in the emission of a new toxic air contaminant with a lower Threshold Limit Value (TLV) than the lowest TLV previously modeled;
- b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any toxic air contaminant listed in OAC rule 3745-114-01, that was modeled from the initial (or last) application; and
- c. physical changes to the emissions unit(s) or its/their exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Toxic Air Contaminant Statute" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01 solely due to a non-restrictive change to a parameter or process operation, where compliance with the ORC 3704.03(F), the statute, has been documented. If the change(s) meet(s) the definition of a "modification" or if a new toxic is emitted, or the modeled toxic(s) is/are expected to exceed the previous modeled level(s), then the permittee shall apply for and obtain a final permit-to-install prior to the change. The Director may consider any significant departure from the operations of the emissions unit, described in the permit-to-install application, as a modification that results in greater emissions than the emissions rate modeled to determine the ground level concentration; and may require the permittee to submit a permit-to-install application for the increased emissions.

[ORC 3704.03(F)(3)(c) and F(4)], [OAC rule 3745-114-01], Options A, Engineering Guide #70

3. The permittee shall collect, record, and retain the following information for each toxic evaluation conducted to determine compliance with the "Toxic Air Contaminant Statute":
  - a. a description of the parameters/values used in each compliance demonstration and the parameters or values changed for any re-evaluation of the toxic(s) modeled (the composition of materials, new toxic contaminants emitted, change in stack/exhaust parameters, etc.);
  - b. the Maximum Acceptable Ground-Level Concentration (MAGLC) for each significant toxic contaminant or worst-case contaminant, calculated in accordance with ORC 3704.03(F);

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- c. a copy of the computer model run(s), that established the predicted 1-hour maximum ground-level concentration that demonstrated the emissions unit(s) to be in compliance with ORC 3704.03(F), initially and for each change that requires re-evaluation of the toxic air contaminant emissions; and
- d. the documentation of the initial evaluation of compliance with ORC 3704.03(F) and documentation of any determination that was conducted to re-evaluate compliance due to a change made to the emissions unit(s) or the materials applied.

[ORC 3704.03(F)(3)(c) and F(4)], [OAC rule 3745-114-01], Options A, Engineering Guide #70

4. The permittee shall maintain a record of any change made to a parameter or value used in the dispersion model, used to demonstrate compliance with ORC 3704.03(F) through the predicted 1-hour maximum ground-level concentration. The record shall include the date and reason(s) for the change and if the change would increase the ground-level concentration.

[ORC 3704.03(F)(3)(c) and F(4)], [OAC rule 3745-114-01], Options A, Engineering Guide #70

#### **IV. Reporting Requirements**

1. The permittee shall submit annual reports to the appropriate Ohio EPA District Office or local air agency, documenting any changes made to a parameter or value used in the dispersion model, that was used to demonstrate compliance with ORC 3704.03(F) through the predicted 1-hour maximum ground-level concentration. If no changes to the emissions unit(s) or the exhaust stack have been made, then the report shall include a statement to this effect. This report shall be postmarked or delivered no later than January 31 following the end of each calendar year.

[ORC 3704.03(F)(3)(c) and F(4)], [OAC rule 3745-114-01], Options A, Engineering Guide #70

#### **V. Testing Requirements**

None

#### **VI. Miscellaneous Requirements**

None

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**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. State and Federally Enforceable Section**

**I. 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.

**Operations, Property, and/or Equipment -(P467) - precision sand core machine no. 4**

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05(C) OAC rule 3745-31-10 through 20	<p>Volatile organic compound emissions (VOC) from emissions units P464, P465, P466, P467, P468 and P469, combined, shall not exceed 55.0 tons per year (tpy), based upon a rolling, 12-month summation of the monthly emissions.</p> <p><u>Receiving hopper and sand mixer (Stack No. 5)</u> VOC emissions shall not exceed 0.10 pound per ton of sand processed.</p> <p><u>Core making (Stack No. 4)</u> VOC emissions shall not exceed 0.60 pound per ton of sand processed.</p> <p><u>Maintenance (metal cleaning of core machine - Stack No. 4):</u> VOC emissions shall not exceed 0.119 pound per ton of sand processed.</p> <p>Fugitive VOC emissions shall not exceed 2.0 tpy, based on a rolling, 12-month summation of the monthly emissions.</p> <p>See A.I.2.a, A.I.2.b, and A.I.2.d.</p>

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OAC rule 3745-31-05(C)	<p>Particulate matter emissions less than or equal to 10 microns in size (PM10) from emissions units P464, P465, P466, P467, P468 and P469, combined, shall not exceed 2.0 tons per year (tpy), based upon a rolling, 12-month summation of the monthly emissions.</p> <p><u>Receiving hopper and sand mixer (Stack No. 5)</u> PM10 emissions shall not exceed 0.0086 lb/ton of sand processed.</p> <p><u>Core making (Stack No. 4)</u> PM10 emissions shall not exceed 0.021 lb/ton of sand processed.</p> <p>Visible PE from the stack(s) serving this emissions unit shall not exceed 5% opacity, as a six-minute average.</p> <p>See A.I.2.b, A.I.2.c, and A.I.2.e.</p>
OAC rule 3745-17-07(A) OAC rule 3745-17-11(B)	The emission limitations specified by these rules are less stringent than the emissions limitations established pursuant to OAC rule 3745-31-05(C).
OAC rule 3745-21-07(G)	Exempt, pursuant to OAC rule 3745-21-07(G)(9)(i).

## 2. Additional Terms and Conditions

- 2.a** The permittee shall employ best available control technology (BACT) on this emissions unit for VOC. BACT has been determined to be the use of the following:
- i. sand mixing - no control technologies were cost effective.
  - ii. core making - a wet scrubber. The wet scrubber shall achieve a control efficiency of 95% for the catalyst dimethyl isopropyl amine (DMIPA) and 30% for all other VOC's.
- 2.b** The rolling, 12-month emission limitations are federally enforceable limitations established for the purpose of reducing emissions. The emission limitations are based on the federally enforceable restriction on the amount of sand processed (See A.II.1).
- 2.c** All emissions of particulate emissions are PM10.
- 2.d** The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to VOC from this air contaminant source since the potential to emit is less than ten tons per year, taking into account the federally enforceable restriction on the amount of sand processed and the use of a wet scrubber.
- 2.e** The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to PM10 from this air contaminant source since the potential to emit is less than ten tons per year, taking into account the federally enforceable restriction on the amount of sand processed, the use of a baghouse and cyclone.

## II. Operational Restrictions

1. The maximum annual sand processed in emissions units P464 through P469, combined, shall not exceed 133,875 tons, based upon a rolling, 12-month summation of sand processed.

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

<u>Month(s)</u>	<u>Maximum Allowable Cumulative Amount of Sand Processed(tons)</u>
1	13,400
1-2	26,800
1-3	40,200
1-4	53,600
1-5	67,000
1-6	80,400
1-7	93,800
1-8	107,200
1-9	120,600
1-10	125,067
1-11	129,534
1-12	133,875

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

2. The permittee shall operate the baghouse at all times when this emissions unit is in operation.
3. To ensure proper operation of the catalyst gas scrubber during operation of this emissions unit, the permittee shall employ an "interlock system" that will shutdown the cold box core machine within 30 minutes after the catalyst gas scrubber liquor pH rises above 5.

The "interlock system" shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations with any modifications deemed necessary by the permittee.

## III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall collect and record the following information each month for emissions units P464, through P469, combined:
  - a. the quantity of sand processed, in tons;
  - b. for the first 12 months of operation following the issuance of this permit, the cumulative quantity of sand processed, in tons; and
  - c. after the first 12 months operation, the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly sand processed.

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\*The amount of sand processed through this emissions unit is equivalent to the amount of sand received in emissions unit P906. The monitoring and record keeping associated with the sand received in emissions unit P906 can be used to fulfill the requirements in this section.

2. In addition to the above information, the permittee shall also record the following information each month for emissions units P464, P465, P466, P467, P468 and P469, combined:

- a. the calculated emission rate for VOC, in tons, determined by the following equation:

$$\text{TOCE} = (\text{A.III.1.a}) \times (\text{A} + \text{B} + \text{C}) \times \text{ton}/2000 \text{ lbs}$$

where:

TOCE = total VOC emissions, in tons

A = the VOC emission factor for the sand receiving hopper and sand mixing (0.10 lb VOC/ton of sand processed)

B = the VOC emission factor for the core machine (0.60 lb VOC/ton of sand processed)

C = the VOC emission factor for metal cleaning (0.119 lb VOC/ton of sand processed)

- b. the calculated emission rate for fugitive VOC, in tons, determined by the following equation:

$$\text{fugitive VOC} = (\text{A.III.1.a}) \times \text{the emission factor for fugitive VOC emissions (0.030 lb fugitive VOC/ton of sand)} \times \text{ton}/2000 \text{ lbs}$$

- c. the calculated emission rate for PM10, in tons, determined by the following equation:

$$\text{TPM10} = (\text{A.III.1.a}) \times (\text{D} + \text{E}) \times \text{ton}/2000 \text{ lbs}$$

where:

TPM10 = total PM10 emissions, in tons

D = the PM10 emission factor for the sand receiving hopper and sand mixing (0.0086 lb PM10/ton of sand processed)

E = the PM10 emission factor for the core machine (0.021 lb PM10/ton of sand processed)

- d. the annual VOC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates;

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- e. the annual PM10 emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates; and
  - f. the annual fugitive VOC emission rate, in tons, based upon the rolling, 12-month summation of the monthly emission rates.
3. The permittee shall maintain a log for the interlock system that identifies each time period when the pH exceeded 5, and the emissions unit was not shut down within 30 minutes thereafter.
  4. The permittee shall properly operate and maintain equipment to continuously monitor the liquor pH and the scrubber liquor flow rate while the emissions unit is in operation. The monitoring devices and any recorders shall be 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 catalyst gas scrubber liquor pH, on a once-per-shift basis;
- b. the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once-per-shift basis; and
- c. the operating times for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.

Whenever the monitored values for the catalyst gas scrubber liquor pH and catalyst gas scrubber liquor flow rate deviate from the range specified below, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation: the date and time the deviation began and the magnitude of the deviation at that time, the date(s) the investigation was conducted, the names of the personnel who conducted the investigation, and the findings and recommendations.

In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the operation of the control equipment within the acceptable ranges specified below, unless the permittee determines that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation ended. The permittee shall maintain records of the following information for each corrective action taken: a description of the corrective action, the date it was completed, the date and time the deviation ended, the total period of time (in minutes) during which there was a deviation, the catalyst gas scrubber liquor pH and catalyst gas scrubber liquor flow rate immediately after the corrective action, and the names of the personnel who performed the work. Investigation and records required by this paragraph does not eliminate the need to comply with the requirements of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.

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- d. The catalyst gas scrubber liquor pH shall be continuously maintained at a value of less than or equal to 5 at all times while the emissions unit is in operation, or as established during the most recent performance test that demonstrated the emissions unit was in compliance.
- e. The catalyst gas scrubber liquor flow rate shall be continuously maintained at a value of not less than 3 gallons per minute per 1,000 cfm if gas flow at all times while the emissions unit is in operation, or as established during the most recent performance test that demonstrated the emissions unit was in compliance.

These ranges are effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the appropriate Ohio EPA District Office or local air agency. The permittee may request revisions to the ranges based upon information obtained during future tests that demonstrate compliance with the allowable VOC emission rate for this emissions unit. In addition, approved revisions to the ranges will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of administrative modification.

- 5. The permittee shall maintain records documenting any time periods when the emissions unit was in operation and the baghouse was not operating.
- 6. The permittee shall perform weekly\* checks when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the baghouse and from the cyclone serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, 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 date and time of the visible emission observation;
  - b. the identification of the stack observed;
  - c. the color of the emissions;
  - d. the total duration of any visible emission observation; and
  - e. the corrective actions, if any, taken to eliminate the visible emissions.

\*once during each normal calendar week

#### IV. Reporting Requirements

- 1. The permittee shall submit quarterly deviation (excursion) reports, which identify all exceedances of the following:
  - a. for the first 12 calendar months of operation following the issuance of this permit, the restriction on the maximum allowable cumulative quantity of sand processed;
  - b. after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month restriction on the quantity of sand processed; and
  - c. the rolling, 12-month emission limitations for PM10, VOC, and fugitive VOC;

These quarterly deviation reports shall be submitted in accordance with the General

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Terms and Conditions of this permit.

2. The permittee shall submit deviation (excursion) reports that identify any time periods when the emissions unit was in operation and the baghouse(s) was(were) not operating. Each report shall be submitted within 30 days after the deviation occurs.
3. The permittee shall submit a written report to the Director identifying all time periods when the pH exceeded 5, and the emissions unit was not shut down within 30 minutes thereafter. Each report shall be submitted within 30 days after the occurrence.
4. The permittee shall submit quarterly reports that identify the following information concerning the operation of the control equipment during the operation of this emissions unit:
  - a. each period of time when the liquor pH of the catalyst gas scrubber was outside of the acceptable range;
  - b. each period of time when the catalyst gas scrubber liquor flow rate was outside of the acceptable range;
  - c. an identification of each incident of deviation described in (a) and (b) above where a prompt investigation was not conducted;
  - d. an identification of each incident of deviation described in (a) and (b) where prompt corrective action, that would bring the liquor pH and/or the catalyst gas scrubber liquor flow rate into compliance with the acceptable range, was determined to be necessary and was not taken;
  - e. an identification of each incident of deviation described in (a) and (b) where proper records were not maintained for the investigation and/or the corrective action.

These quarterly reports shall be submitted (i.e., postmarked) by January 31, April 30, July 31, and October 31 of each year; and each report shall cover the previous calendar quarter.

5. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the baghouse and from the cyclone serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) by January 31 and July 31 of each year and shall cover the previous 6-month period.

**V. Testing Requirements**

1. The permittee shall conduct, or have conducted, emission testing for emissions units P464, P465, P466, P467, P468 and P469 in accordance with the following

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requirements:

- a. The emission testing shall be conducted within 180 days after achieving the maximum production rate at which emissions units P464, P465, P466, P467, P468 and P469 will be operated, but no later than June 30, 2010.
- b. The emission testing shall be conducted to demonstrate compliance with the following:
  - i. for the receiving hopper and sand mixer: 0.10 lb/ton of sand for VOC;
  - ii. for core making: 0.60 lb/ton of sand & control efficiencies for VOC; and
  - iii. for metal cleaning: 0.119 lb VOC/ton of sand.
- c. The following test methods shall be employed to demonstrate compliance with the above emission limitations:
  - i. for total VOC, Methods 1-4 and 18, 25 or 25A of 40 CFR Part 60, Appendix A. Appropriate methods shall be used in conjunction with the test methods and procedures specified in Methods 18, 25, or 25A of 40 CFR Part 60, Appendix A for determining total VOC mass emissions.

Alternative U.S. EPA-approved test methods may be used with prior approval from the Ohio EPA, NWDO. The test method(s) which must be employed to demonstrate compliance with the control efficiencies are specified below.

- d. 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 specified in Methods 18, 25, or 25A of 40 CFR Part 60, Appendix A for VOC emissions .
- e. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases."
- f. The test(s) shall be conducted while emissions units P464, P465, P466, P467, P468 and P469 are operating at their maximum capacities, unless otherwise specified or approved by the Ohio EPA, NWDO.
- g. During emission testing, the permittee shall also record the following information:
  - i. the pH range for the scrubbing liquid; and
  - ii. the scrubber water flow rate, in gallons/minute.
- h. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA, NWDO. 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, NWDO's refusal to accept the results of the emission test(s).

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Personnel from the Ohio EPA, NWDO 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 of the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA, NWDO 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 Ohio EPA, NWDO.

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

a. Emission Limitation:

The maximum annual amount of sand processed shall not exceed 133,875 tons per rolling, 12-month period.

Compliance Method:

Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

b. Emission Limitations:

0.10 lb of VOC per ton of sand (hopper and mixing)

0.60 lb of VOC per ton of sand (core making)

0.119 lb of VOC per ton of sand (metal cleaning)

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Applicable Compliance Method:

Compliance shall be demonstrated based on the results of emission testing conducted in accordance with Methods 1-4 and 18, 25 or 25A of 40 CFR Part 60, Appendix A.

c. Emission Limitations:

PM10 emissions shall not exceed 0.0086 lb/ton of sand (hopper and mixing)  
PM10 emissions shall not exceed 0.021 lb/ton of sand (core making)

Applicable Compliance Method:

If required, compliance with the company-established emission factors shall be demonstrated based on the results of emission testing conducted in accordance with Methods 201 and 202 of 40 CFR Part 51, Appendix M.

d. Emission Limitation:

VOC emissions shall not exceed 55.0 tpy, based on a rolling, 12-month summation of the monthly emissions.

fugitive VOC emissions shall not exceed 2.0 tpy, based on a rolling, 12-month summation of the monthly emissions.

PM10 emissions shall not exceed 2.0 tpy, based on a rolling, 12-month summation of the monthly emissions.

Applicable Compliance Method:

Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

e. Emission Limitation:

Visible PE from the stack(s) serving this emissions unit shall not exceed 5% opacity, as a six-minute average.

Applicable Compliance Method:

If required, compliance shall be determined according to test Method 9 as set forth in the "Appendix on Test Methods" in 40 CFR Part 60 "Standards of Performance for New Stationary Sources."

**VI. Miscellaneous Requirements**

None

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**B. State Only Enforceable Section**

**I. 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.

**Operations, Property, and/or Equipment -(P467) - precision sand core machine no. 4**

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-114-01 ORC 3704.03(F)	See B.III and B.IV.

**2. Additional Terms and Conditions**

2.a None

**II. Operational Restrictions**

None

**III. Monitoring and/or Recordkeeping Requirements**

1. The permit to install for these emissions units P464, P465, P466, P467 and P468 were evaluated based on the actual materials and the design parameters of the emissions units' exhaust system, as specified by the permittee in the permit application. The Ohio EPA's "Toxic Air Contaminant Statute", ORC 3704.03(F), was applied to this/these emissions unit(s) for each toxic air contaminant listed in OAC rule 3745-114-01, using data from the permit application; and modeling was performed for each toxic air contaminant(s) emitted at over one ton per year using an air dispersion model such as SCREEN 3.0, AERMOD, or ISCST3, or other Ohio EPA approved model. The predicted 1-hour maximum ground-level concentration result(s) from the approved air dispersion model, was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC), calculated as described in the Ohio EPA guidance document entitled "Review of New Sources of Air Toxic Emissions, Option A", as follows:
  - a. the exposure limit, expressed as a time-weighted average concentration for a conventional 8-hour workday and a 40-hour workweek, for each toxic compound(s) emitted from the emissions unit(s), (as determined from the raw materials processed and/or coatings or other materials applied) has been documented from one of the following sources and in the following order of preference (TLV was and shall be used, if the chemical is listed):
    - i. threshold limit value (TLV) from the American Conference of Governmental Industrial Hygienists' (ACGIH) "Threshold Limit Values for

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Chemical Substances and Physical Agents Biological Exposure Indices";  
or

- ii. STEL (short term exposure limit) or the ceiling value from the American Conference of Governmental Industrial Hygienists' (ACGIH) "Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices"; the STEL or ceiling value is multiplied by 0.737 to convert the 15-minute exposure limit to an equivalent 8-hour TLV.
- b. The TLV is divided by ten to adjust the standard from the working population to the general public (TLV/10).
- c. This standard is/was then adjusted to account for the duration of the exposure or the operating hours of the emissions unit(s), i.e., "X" hours per day and "Y" days per week, from that of 8 hours per day and 5 days per week. The resulting calculation was (and shall be) used to determine the Maximum Acceptable Ground-Level Concentration (MAGLC).
- d. The following summarizes the results of dispersion modeling for the significant toxic contaminants (emitted at 1 or more tons/year) or "worst case" toxic contaminant(s):

**Toxic contaminant:** phenolTLV (mg/m<sup>3</sup>): 19.25

Maximum Hourly Emission Rate (lbs/hr): 1.80 (permit total)

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m<sup>3</sup>): 4.77MAGLC (ug/m<sup>3</sup>): 458**Toxic contaminant:** m,p-xyleneTLV (mg/m<sup>3</sup>): 434

Maximum Hourly Emission Rate (lbs/hr): 1.15 (permit total)

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m<sup>3</sup>): 6.33MAGLC (ug/m<sup>3</sup>): 10,338**Toxic contaminant:** naphthaleneTLV (mg/m<sup>3</sup>): 54

Maximum Hourly Emission Rate (lbs/hr): 0.67 (permit total)

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m<sup>3</sup>): 2.93MAGLC (ug/m<sup>3</sup>): 1296

The permittee, has demonstrated that emissions of phenol, m,p-xylene and naphthalene, from emissions units P464, P465, P466, P467, P468 and P469, are calculated to be less than eighty per cent of the maximum acceptable ground level concentration (MAGLC); any new raw material or processing agent shall not be applied without evaluating each component toxic contaminant in accordance with ORC 3704.03(F).

[ORC 3704.03(F)(3)(c) and F(4)], [OAC rule 3745-114-01], Options A, Engineering Guide #70

2. Prior to making any physical changes to or changes in the method of operation of the emissions unit(s), that could impact the parameters or values that were used in the predicted 1-hour maximum ground-level concentration", the permittee shall re-model

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the change(s) to demonstrate that the MAGLC has not been exceeded. Changes that can affect the parameters/values used in determining the 1-hour maximum ground-level concentration include, but are not limited to, the following:

- a. changes in the composition of the materials used or the use of new materials, that would result in the emission of a new toxic air contaminant with a lower Threshold Limit Value (TLV) than the lowest TLV previously modeled;
- b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any toxic air contaminant listed in OAC rule 3745-114-01, that was modeled from the initial (or last) application; and
- c. physical changes to the emissions unit(s) or its/their exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Toxic Air Contaminant Statute" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01 solely due to a non-restrictive change to a parameter or process operation, where compliance with the ORC 3704.03(F), the statute, has been documented. If the change(s) meet(s) the definition of a "modification" or if a new toxic is emitted, or the modeled toxic(s) is/are expected to exceed the previous modeled level(s), then the permittee shall apply for and obtain a final permit-to-install prior to the change. The Director may consider any significant departure from the operations of the emissions unit, described in the permit-to-install application, as a modification that results in greater emissions than the emissions rate modeled to determine the ground level concentration; and may require the permittee to submit a permit-to-install application for the increased emissions.

[ORC 3704.03(F)(3)(c) and F(4)], [OAC rule 3745-114-01], Options A, Engineering Guide #70

3. The permittee shall collect, record, and retain the following information for each toxic evaluation conducted to determine compliance with the "Toxic Air Contaminant Statute":
  - a. a description of the parameters/values used in each compliance demonstration and the parameters or values changed for any re-evaluation of the toxic(s) modeled (the composition of materials, new toxic contaminants emitted, change in stack/exhaust parameters, etc.);
  - b. the Maximum Acceptable Ground-Level Concentration (MAGLC) for each significant toxic contaminant or worst-case contaminant, calculated in accordance with ORC 3704.03(F);
  - c. a copy of the computer model run(s), that established the predicted 1-hour maximum ground-level concentration that demonstrated the emissions unit(s) to

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be in compliance with ORC 3704.03(F), initially and for each change that requires re-evaluation of the toxic air contaminant emissions; and

- d. the documentation of the initial evaluation of compliance with ORC 3704.03(F) and documentation of any determination that was conducted to re-evaluate compliance due to a change made to the emissions unit(s) or the materials applied.

[ORC 3704.03(F)(3)(c) and F(4)], [OAC rule 3745-114-01], Options A, Engineering Guide #70

4. The permittee shall maintain a record of any change made to a parameter or value used in the dispersion model, used to demonstrate compliance with ORC 3704.03(F) through the predicted 1-hour maximum ground-level concentration. The record shall include the date and reason(s) for the change and if the change would increase the ground-level concentration.

[ORC 3704.03(F)(3)(c) and F(4)], [OAC rule 3745-114-01], Options A, Engineering Guide #70

#### **IV. Reporting Requirements**

1. The permittee shall submit annual reports to the appropriate Ohio EPA District Office or local air agency, documenting any changes made to a parameter or value used in the dispersion model, that was used to demonstrate compliance with ORC 3704.03(F) through the predicted 1-hour maximum ground-level concentration. If no changes to the emissions unit(s) or the exhaust stack have been made, then the report shall include a statement to this effect. This report shall be postmarked or delivered no later than January 31 following the end of each calendar year.

[ORC 3704.03(F)(3)(c) and F(4)], [OAC rule 3745-114-01], Options A, Engineering Guide #70

#### **V. Testing Requirements**

None

#### **VI. Miscellaneous Requirements**

None

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**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. State and Federally Enforceable Section**

**I. 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.

**Operations, Property, and/or Equipment -(P468) - precision sand core machine no. 5**

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05(C) OAC rule 3745-31-10 through 20	<p>Volatile organic compound emissions (VOC) from emissions units P464, P465, P466, P467, P468 and P469, combined, shall not exceed 55.0 tons per year (tpy), based upon a rolling, 12-month summation of the monthly emissions.</p> <p><u>Receiving hopper and sand mixer (Stack No. 5)</u> VOC emissions shall not exceed 0.10 pound per ton of sand processed.</p> <p><u>Core making (Stack No. 4)</u> VOC emissions shall not exceed 0.60 pound per ton of sand processed.</p> <p><u>Maintenance (metal cleaning of core machine - Stack No. 4):</u> VOC emissions shall not exceed 0.119 pound per ton of sand processed.</p> <p>Fugitive VOC emissions shall not exceed 2.0 tpy, based on a rolling, 12-month summation of the monthly emissions.</p> <p>See A.I.2.a, A.I.2.b and A.I.2.d.</p>

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OAC rule 3745-31-05(C)	<p>Particulate matter emissions less than or equal to 10 microns in size (PM10) from emissions units P464, P465, P466, P467, P468 and P469, combined, shall not exceed 2.0 tons per year (tpy), based upon a rolling, 12-month summation of the monthly emissions.</p> <p><u>Receiving hopper and sand mixer (Stack No. 5)</u> PM10 emissions shall not exceed 0.0086 lb/ton of sand processed.</p> <p><u>Core making (Stack No. 4)</u> PM10 emissions shall not exceed 0.021 lb/ton of sand processed.</p> <p>Visible PE from the stack(s) serving this emissions unit shall not exceed 5% opacity, as a six-minute average.</p> <p>See A.I.2.b, A.I.2.c, and A.I.2.e.</p>
OAC rule 3745-17-07(A) OAC rule 3745-17-11(B)	The emission limitations specified by these rules are less stringent than the emissions limitations established pursuant to OAC rule 3745-31-05(C).
OAC rule 3745-21-07(G)	Exempt, pursuant to OAC rule 3745-21-07(G)(9)(i).

## 2. Additional Terms and Conditions

- 2.a** The permittee shall employ best available control technology (BACT) on this emissions unit for VOC. BACT has been determined to be the use of the following:
- i. sand mixing - no control technologies were cost effective.
  - ii. core making - a wet scrubber. The wet scrubber shall achieve a control efficiency of 95% for the catalyst dimethyl isopropyl amine (DMIPA) and 30% for all other VOC's.
- 2.b** The rolling, 12-month emission limitations are federally enforceable limitations established for the purpose of reducing emissions. The emission limitations are based on the federally enforceable restriction on the amount of sand processed (See A.II.1).
- 2.c** All emissions of particulate emissions are PM10.
- 2.d** The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to VOC from this air contaminant source since the potential to emit is less than ten tons per year, taking into account the federally enforceable restriction on the amount of sand processed and the use of a wet scrubber.
- 2.e** The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to PM10 from this air contaminant source since the potential to emit is less than ten tons per year, taking into account the federally enforceable restriction on the amount of sand processed, the use of a baghouse and cyclone.

## II. Operational Restrictions

1. The maximum annual sand processed in emissions units P464 through P469, combined, shall not exceed 133,875 tons, based upon a rolling, 12-month summation of sand processed.

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

<u>Month(s)</u>	<u>Maximum Allowable Cumulative Amount of Sand Processed(tons)</u>
1	13,400
1-2	26,800
1-3	40,200
1-4	53,600
1-5	67,000
1-6	80,400
1-7	93,800
1-8	107,200
1-9	120,600
1-10	125,067
1-11	129,534
1-12	133,875

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

2. The permittee shall operate the baghouse at all times when this emissions unit is in operation.
3. To ensure proper operation of the catalyst gas scrubber during operation of this emissions unit, the permittee shall employ an "interlock system" that will shutdown the cold box core machine within 30 minutes after the catalyst gas scrubber liquor pH rises above 5.

The "interlock system" shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations with any modifications deemed necessary by the permittee.

## III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall collect and record the following information each month for emissions units P464, through P469, combined:
  - a. the quantity of sand processed, in tons;
  - b. for the first 12 months of operation following the issuance of this permit, the cumulative quantity of sand processed, in tons; and
  - c. after the first 12 months operation, the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly sand processed.

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\*The amount of sand processed through this emissions unit is equivalent to the amount of sand received in emissions unit P906. The monitoring and record keeping associated with the sand received in emissions unit P906 can be used to fulfill the requirements in this section.

2. In addition to the above information, the permittee shall also record the following information each month for emissions units P464, P465, P466, P467, P468 and P469, combined:
  - a. the calculated emission rate for VOC, in tons, determined by the following equation:
 
$$\text{TOCE} = (\text{A.III.1.a}) \times (\text{A} + \text{B} + \text{C}) \times \text{ton}/2000 \text{ lbs}$$
 where:
 

TOCE = total VOC emissions, in tons

A = the VOC emission factor for the sand receiving hopper and sand mixing (0.10 lb VOC/ton of sand processed)

B = the VOC emission factor for the core machine (0.60 lb VOC/ton of sand processed)

C = the VOC emission factor for metal cleaning (0.119 lb VOC/ton of sand processed)
  - b. the calculated emission rate for fugitive VOC, in tons, determined by the following equation:
 
$$\text{fugitive VOC} = (\text{A.III.1.a}) \times \text{the emission factor for fugitive VOC emissions (0.030 lb fugitive VOC/ton of sand)} \times \text{ton}/2000 \text{ lbs}$$
  - c. the calculated emission rate for PM10, in tons, determined by the following equation:
 
$$\text{TPM10} = (\text{A.III.1.a}) \times (\text{D} + \text{E}) \times \text{ton}/2000 \text{ lbs}$$
 where:
 

TPM10 = total PM10 emissions, in tons

D = the PM10 emission factor for the sand receiving hopper and sand mixing (0.0086 lb PM10/ton of sand processed)

E = the PM10 emission factor for the core machine (0.021 lb PM10/ton of sand processed)
  - d. the annual VOC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates;

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- e. the annual PM10 emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates; and
  - f. the annual fugitive VOC emission rate, in tons, based upon the rolling, 12-month summation of the monthly emission rates.
3. The permittee shall maintain a log for the interlock system that identifies each time period when the pH exceeded 5, and the emissions unit was not shut down within 30 minutes thereafter.
  4. The permittee shall properly operate and maintain equipment to continuously monitor the liquor pH and the scrubber liquor flow rate while the emissions unit is in operation. The monitoring devices and any recorders shall be 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 catalyst gas scrubber liquor pH, on a once-per-shift basis;
- b. the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once-per-shift basis; and
- c. the operating times for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.

Whenever the monitored values for the catalyst gas scrubber liquor pH and catalyst gas scrubber liquor flow rate deviate from the range specified below, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation: the date and time the deviation began and the magnitude of the deviation at that time, the date(s) the investigation was conducted, the names of the personnel who conducted the investigation, and the findings and recommendations.

In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the operation of the control equipment within the acceptable ranges specified below, unless the permittee determines that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation ended. The permittee shall maintain records of the following information for each corrective action taken: a description of the corrective action, the date it was completed, the date and time the deviation ended, the total period of time (in minutes) during which there was a deviation, the catalyst gas scrubber liquor pH and catalyst gas scrubber liquor flow rate immediately after the corrective action, and the names of the personnel who performed the work. Investigation and records required by this paragraph does not eliminate the need to comply with the requirements of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.

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- d. The catalyst gas scrubber liquor pH shall be continuously maintained at a value of less than or equal to 5 at all times while the emissions unit is in operation, or as established during the most recent performance test that demonstrated the emissions unit was in compliance.
- e. The catalyst gas scrubber liquor flow rate shall be continuously maintained at a value of not less than 3 gallons per minute per 1,000 cfm if gas flow at all times while the emissions unit is in operation, or as established during the most recent performance test that demonstrated the emissions unit was in compliance.

These ranges are effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the appropriate Ohio EPA District Office or local air agency. The permittee may request revisions to the ranges based upon information obtained during future tests that demonstrate compliance with the allowable VOC emission rate for this emissions unit. In addition, approved revisions to the ranges will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of administrative modification.

5. The permittee shall maintain records documenting any time periods when the emissions unit was in operation and the baghouse was not operating.
6. The permittee shall perform weekly\* checks when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the baghouse and from the cyclone serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, 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 date and time of the visible emission observation;
  - b. the identification of the stack observed;
  - c. the color of the emissions;
  - d. the total duration of any visible emission observation; and
  - e. the corrective actions, if any, taken to eliminate the visible emissions.

\*once during each normal calendar week

#### IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, which identify all exceedances of the following:
  - a. for the first 12 calendar months of operation following the issuance of this permit, the restriction on the maximum allowable cumulative quantity of sand processed;;
  - b. after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month restriction on the quantity of sand processed; and
  - c. the rolling, 12-month emission limitations for PM10, VOC, and fugitive VOC;

These quarterly deviation reports shall be submitted in accordance with the General

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2. The permittee shall submit deviation (excursion) reports that identify any time periods when the emissions unit was in operation and the baghouse(s) was(were) not operating. Each report shall be submitted within 30 days after the deviation occurs.
3. The permittee shall submit a written report to the Director identifying all time periods when the pH exceeded 5, and the emissions unit was not shut down within 30 minutes thereafter. Each report shall be submitted within 30 days after the occurrence.
4. The permittee shall submit quarterly reports that identify the following information concerning the operation of the control equipment during the operation of this emissions unit:
  - a. each period of time when the liquor pH of the catalyst gas scrubber was outside of the acceptable range;
  - b. each period of time when the catalyst gas scrubber liquor flow rate was outside of the acceptable range;
  - c. an identification of each incident of deviation described in (a) and (b) above where a prompt investigation was not conducted;
  - d. an identification of each incident of deviation described in (a) and (b) where prompt corrective action, that would bring the liquor pH and/or the catalyst gas scrubber liquor flow rate into compliance with the acceptable range, was determined to be necessary and was not taken;
  - e. an identification of each incident of deviation described in (a) and (b) where proper records were not maintained for the investigation and/or the corrective action.

These quarterly reports shall be submitted (i.e., postmarked) by January 31, April 30, July 31, and October 31 of each year; and each report shall cover the previous calendar quarter.

5. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the baghouse and from the cyclone serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) by January 31 and July 31 of each year and shall cover the previous 6-month period.

**V. Testing Requirements**

1. The permittee shall conduct, or have conducted, emission testing for emissions units P464, P465, P466, P467, P468 and P469 in accordance with the following

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requirements:

- a. The emission testing shall be conducted within 180 days after achieving the maximum production rate at which emissions units P464, P465, P466, P467, P468 and P469 will be operated, but no later than June 30, 2010.
- b. The emission testing shall be conducted to demonstrate compliance with the following:
  - i. for the receiving hopper and sand mixer: 0.10 lb/ton of sand for VOC;
  - ii. for core making: 0.60 lb/ton of sand & control efficiencies for VOC; and
  - iii. for metal cleaning: 0.119 lb VOC/ton of sand.
- c. The following test methods shall be employed to demonstrate compliance with the above emission limitations:
  - i. for total VOC, Methods 1-4 and 18, 25 or 25A of 40 CFR Part 60, Appendix A. Appropriate methods shall be used in conjunction with the test methods and procedures specified in Methods 18, 25, or 25A of 40 CFR Part 60, Appendix A for determining total VOC mass emissions.

Alternative U.S. EPA-approved test methods may be used with prior approval from the Ohio EPA, NWDO. The test method(s) which must be employed to demonstrate compliance with the control efficiencies are specified below.

- d. 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 specified in Methods 18, 25, or 25A of 40 CFR Part 60, Appendix A for VOC emissions .
- e. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases."
- f. The test(s) shall be conducted while emissions units P464, P465, P466, P467, P468 and P469 are operating at their maximum capacities, unless otherwise specified or approved by the Ohio EPA, NWDO.
- g. During emission testing, the permittee shall also record the following information:
  - i. the pH range for the scrubbing liquid; and
  - ii. the scrubber water flow rate, in gallons/minute.
- h. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA, NWDO. 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, NWDO's refusal to accept the results of the emission test(s).

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Personnel from the Ohio EPA, NWDO 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 of the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA, NWDO 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 Ohio EPA, NWDO.

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

a. Emission Limitation:

The maximum annual amount of sand processed shall not exceed 133,875 tons per rolling, 12-month period.

Compliance Method:

Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

b. Emission Limitations:

0.10 lb of VOC per ton of sand (hopper and mixing)

0.60 lb of VOC per ton of sand (core making)

0.119 lb of VOC per ton of sand (metal cleaning)

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Applicable Compliance Method:

Compliance shall be demonstrated based on the results of emission testing conducted in accordance with Methods 1-4 and 18, 25 or 25A of 40 CFR Part 60, Appendix A.

c. Emission Limitations:

PM10 emissions shall not exceed 0.0086 lb/ton of sand (hopper and mixing)  
PM10 emissions shall not exceed 0.021 lb/ton of sand (core making)

Applicable Compliance Method:

If required, compliance with the company-established emission factors shall be demonstrated based on the results of emission testing conducted in accordance with Methods 201 and 202 of 40 CFR Part 51, Appendix M.

d. Emission Limitation:

VOC emissions shall not exceed 55.0 tpy, based on a rolling, 12-month summation of the monthly emissions.

fugitive VOC emissions shall not exceed 2.0 tpy, based on a rolling, 12-month summation of the monthly emissions.

PM10 emissions shall not exceed 2.0 tpy, based on a rolling, 12-month summation of the monthly emissions.

Applicable Compliance Method:

Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

e. Emission Limitation:

Visible PE from the stack(s) serving this emissions unit shall not exceed 5% opacity, as a six-minute average.

Applicable Compliance Method:

If required, compliance shall be determined according to test Method 9 as set forth in the "Appendix on Test Methods" in 40 CFR Part 60 "Standards of Performance for New Stationary Sources."

**VI. Miscellaneous Requirements**

None

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**B. State Only Enforceable Section**

**I. 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.

**Operations, Property, and/or Equipment -(P468) - precision sand core machine no. 5**

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-114-01 ORC 3704.03(F)	See B.III and B.IV.

**2. Additional Terms and Conditions**

**2.a** None

**II. Operational Restrictions**

None

**III. Monitoring and/or Recordkeeping Requirements**

1. The permit to install for these emissions units P464, P465, P466, P467 and P468 were evaluated based on the actual materials and the design parameters of the emissions units' exhaust system, as specified by the permittee in the permit application. The Ohio EPA's "Toxic Air Contaminant Statute", ORC 3704.03(F), was applied to this/these emissions unit(s) for each toxic air contaminant listed in OAC rule 3745-114-01, using data from the permit application; and modeling was performed for each toxic air contaminant(s) emitted at over one ton per year using an air dispersion model such as SCREEN 3.0, AERMOD, or ISCST3, or other Ohio EPA approved model. The predicted 1-hour maximum ground-level concentration result(s) from the approved air dispersion model, was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC), calculated as described in the Ohio EPA guidance document entitled "Review of New Sources of Air Toxic Emissions, Option A", as follows:
  - a. the exposure limit, expressed as a time-weighted average concentration for a conventional 8-hour workday and a 40-hour workweek, for each toxic compound(s) emitted from the emissions unit(s), (as determined from the raw materials processed and/or coatings or other materials applied) has been documented from one of the following sources and in the following order of preference (TLV was and shall be used, if the chemical is listed):
    - i. threshold limit value (TLV) from the American Conference of Governmental Industrial Hygienists' (ACGIH) "Threshold Limit Values for

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Chemical Substances and Physical Agents Biological Exposure Indices";  
or

- ii. STEL (short term exposure limit) or the ceiling value from the American Conference of Governmental Industrial Hygienists' (ACGIH) "Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices"; the STEL or ceiling value is multiplied by 0.737 to convert the 15-minute exposure limit to an equivalent 8-hour TLV.
- b. The TLV is divided by ten to adjust the standard from the working population to the general public (TLV/10).
- c. This standard is/was then adjusted to account for the duration of the exposure or the operating hours of the emissions unit(s), i.e., "X" hours per day and "Y" days per week, from that of 8 hours per day and 5 days per week. The resulting calculation was (and shall be) used to determine the Maximum Acceptable Ground-Level Concentration (MAGLC).
- d. The following summarizes the results of dispersion modeling for the significant toxic contaminants (emitted at 1 or more tons/year) or "worst case" toxic contaminant(s):

**Toxic contaminant:** phenolTLV (mg/m<sup>3</sup>): 19.25

Maximum Hourly Emission Rate (lbs/hr): 1.80 (permit total)

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m<sup>3</sup>): 4.77MAGLC (ug/m<sup>3</sup>): 458**Toxic contaminant:** m,p-xyleneTLV (mg/m<sup>3</sup>): 434

Maximum Hourly Emission Rate (lbs/hr): 1.15 (permit total)

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m<sup>3</sup>): 6.33MAGLC (ug/m<sup>3</sup>): 10,338**Toxic contaminant:** naphthaleneTLV (mg/m<sup>3</sup>): 54

Maximum Hourly Emission Rate (lbs/hr): 0.67 (permit total)

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m<sup>3</sup>): 2.93MAGLC (ug/m<sup>3</sup>): 1296

The permittee, has demonstrated that emissions of phenol, m,p-xylene and naphthalene, from emissions units P464, P465, P466, P467, P468 and P469, are calculated to be less than eighty per cent of the maximum acceptable ground level concentration (MAGLC); any new raw material or processing agent shall not be applied without evaluating each component toxic contaminant in accordance with ORC 3704.03(F).

[ORC 3704.03(F)(3)(c) and F(4)], [OAC rule 3745-114-01], Options A, Engineering Guide #70

2. Prior to making any physical changes to or changes in the method of operation of the emissions unit(s), that could impact the parameters or values that were used in the predicted 1-hour maximum ground-level concentration", the permittee shall re-model

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the change(s) to demonstrate that the MAGLC has not been exceeded. Changes that can affect the parameters/values used in determining the 1-hour maximum ground-level concentration include, but are not limited to, the following:

- a. changes in the composition of the materials used or the use of new materials, that would result in the emission of a new toxic air contaminant with a lower Threshold Limit Value (TLV) than the lowest TLV previously modeled;
- b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any toxic air contaminant listed in OAC rule 3745-114-01, that was modeled from the initial (or last) application; and
- c. physical changes to the emissions unit(s) or its/their exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Toxic Air Contaminant Statute" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01 solely due to a non-restrictive change to a parameter or process operation, where compliance with the ORC 3704.03(F), the statute, has been documented. If the change(s) meet(s) the definition of a "modification" or if a new toxic is emitted, or the modeled toxic(s) is/are expected to exceed the previous modeled level(s), then the permittee shall apply for and obtain a final permit-to-install prior to the change. The Director may consider any significant departure from the operations of the emissions unit, described in the permit-to-install application, as a modification that results in greater emissions than the emissions rate modeled to determine the ground level concentration; and may require the permittee to submit a permit-to-install application for the increased emissions.

[ORC 3704.03(F)(3)(c) and F(4)], [OAC rule 3745-114-01], Options A, Engineering Guide #70

3. The permittee shall collect, record, and retain the following information for each toxic evaluation conducted to determine compliance with the "Toxic Air Contaminant Statute":
  - a. a description of the parameters/values used in each compliance demonstration and the parameters or values changed for any re-evaluation of the toxic(s) modeled (the composition of materials, new toxic contaminants emitted, change in stack/exhaust parameters, etc.);
  - b. the Maximum Acceptable Ground-Level Concentration (MAGLC) for each significant toxic contaminant or worst-case contaminant, calculated in accordance with ORC 3704.03(F);
  - c. a copy of the computer model run(s), that established the predicted 1-hour maximum ground-level concentration that demonstrated the emissions unit(s) to

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be in compliance with ORC 3704.03(F), initially and for each change that requires re-evaluation of the toxic air contaminant emissions; and

- d. the documentation of the initial evaluation of compliance with ORC 3704.03(F) and documentation of any determination that was conducted to re-evaluate compliance due to a change made to the emissions unit(s) or the materials applied.

[ORC 3704.03(F)(3)(c) and F(4)], [OAC rule 3745-114-01], Options A, Engineering Guide #70

4. The permittee shall maintain a record of any change made to a parameter or value used in the dispersion model, used to demonstrate compliance with ORC 3704.03(F) through the predicted 1-hour maximum ground-level concentration. The record shall include the date and reason(s) for the change and if the change would increase the ground-level concentration.

[ORC 3704.03(F)(3)(c) and F(4)], [OAC rule 3745-114-01], Options A, Engineering Guide #70

#### **IV. Reporting Requirements**

1. The permittee shall submit annual reports to the appropriate Ohio EPA District Office or local air agency, documenting any changes made to a parameter or value used in the dispersion model, that was used to demonstrate compliance with ORC 3704.03(F) through the predicted 1-hour maximum ground-level concentration. If no changes to the emissions unit(s) or the exhaust stack have been made, then the report shall include a statement to this effect. This report shall be postmarked or delivered no later than January 31 following the end of each calendar year.

[ORC 3704.03(F)(3)(c) and F(4)], [OAC rule 3745-114-01], Options A, Engineering Guide #70

#### **V. Testing Requirements**

None

#### **VI. Miscellaneous Requirements**

None

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**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. State and Federally Enforceable Section**

**I. 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.

**Operations, Property, and/or Equipment -(P469) - precision sand core machine no. 6**

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05(C) OAC rule 3745-31-10 through 20	<p>Volatile organic compound emissions (VOC) from emissions units P464, P465, P466, P467, P468 and P469, combined, shall not exceed 55.0 tons per year (tpy), based upon a rolling, 12-month summation of the monthly emissions.</p> <p><u>Receiving hopper and sand mixer (Stack No. 5)</u> VOC emissions shall not exceed 0.10 pound per ton of sand processed.</p> <p><u>Core making (Stack No. 4)</u> VOC emissions shall not exceed 0.60 pound per ton of sand processed.</p> <p><u>Maintenance (metal cleaning of core machine - Stack No. 4):</u> VOC emissions shall not exceed 0.119 pound per ton of sand processed.</p> <p>Fugitive VOC emissions shall not exceed 2.0 tpy, based on a rolling, 12-month summation of the monthly emissions.</p> <p>See A.I.2.a, A.I.2.b, and A.I.2.d.</p>

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OAC rule 3745-31-05(C)	<p>Particulate matter emissions less than or equal to 10 microns in size (PM10) from emissions units P464, P465, P466, P467, P468 and P469, combined, shall not exceed 2.0 tons per year (tpy), based upon a rolling, 12-month summation of the monthly emissions.</p> <p><u>Receiving hopper and sand mixer (Stack No. 5)</u> PM10 emissions shall not exceed 0.0086 lb/ton of sand processed.</p> <p><u>Core making (Stack No. 4)</u> PM10 emissions shall not exceed 0.021 lb/ton of sand processed.</p> <p>Visible PE from the stack(s) serving this emissions unit shall not exceed 5% opacity, as a six-minute average.</p> <p>See A.I.2.b, A.I.2.c, and A.I.2.e.</p>
OAC rule 3745-17-07(A) OAC rule 3745-17-11(B)	The emission limitations specified by these rules are less stringent than the emissions limitations established pursuant to OAC rule 3745-31-05(C).
OAC rule 3745-21-07(G)	Exempt, pursuant to OAC rule 3745-21-07(G)(9)(i).

## 2. Additional Terms and Conditions

- 2.a** The permittee shall employ best available control technology (BACT) on this emissions unit for VOC. BACT has been determined to be the use of the following:
- i. sand mixing - no control technologies were cost effective.
  - ii. core making - a wet scrubber. The wet scrubber shall achieve a control efficiency of 95% for the catalyst dimethyl isopropyl amine (DMIPA) and 30% for all other VOC's.
- 2.b** The rolling, 12-month emission limitations are federally enforceable limitations established for the purpose of reducing emissions. The emission limitations are based on the federally enforceable restriction on the amount of sand processed (See A.II.1).
- 2.c** All emissions of particulate emissions are PM10.
- 2.d** The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to VOC from this air contaminant source since the potential to emit is less than ten tons per year, taking into account the federally enforceable restriction on the amount of sand processed and the use of a wet scrubber.
- 2.e** The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the emissions of PM10 from this air contaminant source since the potential to emit is less than ten tons per year, taking into account the federally enforceable restriction on the amount of sand processed, the use of a baghouse and cyclone.

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**II. Operational Restrictions**

1. The maximum annual sand processed in emissions units P464 through P469, combined, shall not exceed 133,875 tons, based upon a rolling, 12-month summation of sand processed.

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

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<u>Month(s)</u>	<u>Maximum Allowable Cumulative Amount of Sand Processed(tons)</u>
1	13,400
1-2	26,800
1-3	40,200
1-4	53,600
1-5	67,000
1-6	80,400
1-7	93,800
1-8	107,200
1-9	120,600
1-10	125,067
1-11	129,534
1-12	133,875

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

2. The permittee shall operate the baghouse at all times when this emissions unit is in operation.
3. To ensure proper operation of the catalyst gas scrubber during operation of this emissions unit, the permittee shall employ an "interlock system" that will shutdown the cold box core machine within 30 minutes after the catalyst gas scrubber liquor pH rises above 5.

The "interlock system" shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations with any modifications deemed necessary by the permittee.

**III. Monitoring and/or Recordkeeping Requirements**

1. The permittee shall collect and record the following information each month for emissions units P464, through P469, combined:
  - a. the quantity of sand processed, in tons;
  - b. for the first 12 months of operation following the issuance of this permit, the cumulative quantity of sand processed, in tons; and
  - c. after the first 12 months operation, the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly sand processed.

\*The amount of sand processed through this emissions unit is equivalent to the amount of sand received in emissions unit P906. The monitoring and record keeping associated with the sand received in emissions unit P906 can be used to fulfill the

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requirements in this section.

2. In addition to the above information, the permittee shall also record the following information each month for emissions units P464, P465, P466, P467, P468 and P469, combined:

- a. the calculated emission rate for VOC, in tons, determined by the following equation:

$$\text{TOCE} = (\text{A.III.1.a}) \times (\text{A} + \text{B} + \text{C}) \times \text{ton}/2000 \text{ lbs}$$

where:

TOCE = total VOC emissions, in tons

A = the VOC emission factor for the sand receiving hopper and sand mixing (0.10 lb VOC/ton of sand processed)

B = the VOC emission factor for the core machine (0.60 lb VOC/ton of sand processed)

C = the VOC emission factor for metal cleaning (0.119 lb VOC/ton of sand processed)

- b. the calculated emission rate for fugitive VOC, in tons, determined by the following equation:

$$\text{fugitive VOC} = (\text{A.III.1.a}) \times \text{the emission factor for fugitive VOC emissions (0.030 lb fugitive VOC/ton of sand)} \times \text{ton}/2000 \text{ lbs}$$

- c. the calculated emission rate for PM10, in tons, determined by the following equation:

$$\text{TPM10} = (\text{A.III.1.a}) \times (\text{D} + \text{E}) \times \text{ton}/2000 \text{ lbs}$$

where:

TPM10 = total PM10 emissions, in tons

D = the PM10 emission factor for the sand receiving hopper and sand mixing (0.0086 lb PM10/ton of sand processed)

E = the PM10 emission factor for the core machine (0.021 lb PM10/ton of sand processed)

- d. the annual VOC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates;
- e. the annual PM10 emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates; and
- f. the annual fugitive VOC emission rate, in tons, based upon the rolling, 12-month

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summation of the monthly emission rates.

3. The permittee shall maintain a log for the interlock system that identifies each time period when the pH exceeded 5, and the emissions unit was not shut down within 30 minutes thereafter.
4. The permittee shall properly operate and maintain equipment to continuously monitor the liquor pH and the scrubber liquor flow rate while the emissions unit is in operation. The monitoring devices and any recorders shall be 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 catalyst gas scrubber liquor pH, on a once-per-shift basis;
- b. the catalyst gas scrubber liquor flow rate, in gallons per minute, on a once-per-shift basis; and
- c. the operating times for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.

Whenever the monitored values for the catalyst gas scrubber liquor pH and catalyst gas scrubber liquor flow rate deviate from the range specified below, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation: the date and time the deviation began and the magnitude of the deviation at that time, the date(s) the investigation was conducted, the names of the personnel who conducted the investigation, and the findings and recommendations.

In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the operation of the control equipment within the acceptable ranges specified below, unless the permittee determines that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation ended. The permittee shall maintain records of the following information for each corrective action taken: a description of the corrective action, the date it was completed, the date and time the deviation ended, the total period of time (in minutes) during which there was a deviation, the catalyst gas scrubber liquor pH and catalyst gas scrubber liquor flow rate immediately after the corrective action, and the names of the personnel who performed the work. Investigation and records required by this paragraph does not eliminate the need to comply with the requirements of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.

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- d. The catalyst gas scrubber liquor pH shall be continuously maintained at a value of less than or equal to 5 at all times while the emissions unit is in operation, or as established during the most recent performance test that demonstrated the emissions unit was in compliance.
- e. The catalyst gas scrubber liquor flow rate shall be continuously maintained at a value of not less than 3 gallons per minute per 1,000 cfm if gas flow at all times while the emissions unit is in operation, or as established during the most recent performance test that demonstrated the emissions unit was in compliance.

These ranges are effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the appropriate Ohio EPA District Office or local air agency. The permittee may request revisions to the ranges based upon information obtained during future tests that demonstrate compliance with the allowable VOC emission rate for this emissions unit. In addition, approved revisions to the ranges will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of administrative modification.

5. The permittee shall maintain records documenting any time periods when the emissions unit was in operation and the baghouse was not operating.
6. The permittee shall perform weekly\* checks when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the baghouse and from the cyclone serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, 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 date and time of the visible emission observation;
  - b. the identification of the stack observed;
  - c. the color of the emissions;
  - d. the total duration of any visible emission observation; and
  - e. the corrective actions, if any, taken to eliminate the visible emissions.

\*once during each normal calendar week

#### IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, which identify all exceedances of the following:
  - a. for the first 12 calendar months of operation following the issuance of this permit, the restriction on the maximum allowable cumulative quantity of sand processed;;
  - b. after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month restriction on the quantity of sand processed; and
  - c. the rolling, 12-month emission limitations for PM10, VOC, and fugitive VOC;

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These quarterly deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit deviation (excursion) reports that identify any time periods when the emissions unit was in operation and the baghouse(s) was(were) not operating. Each report shall be submitted within 30 days after the deviation occurs.
3. The permittee shall submit a written report to the Director identifying all time periods when the pH exceeded 5, and the emissions unit was not shut down within 30 minutes thereafter. Each report shall be submitted within 30 days after the occurrence.
4. The permittee shall submit quarterly reports that identify the following information concerning the operation of the control equipment during the operation of this emissions unit:
  - a. each period of time when the liquor pH of the catalyst gas scrubber was outside of the acceptable range;
  - b. each period of time when the catalyst gas scrubber liquor flow rate was outside of the acceptable range;
  - c. an identification of each incident of deviation described in (a) and (b) above where a prompt investigation was not conducted;
  - d. an identification of each incident of deviation described in (a) and (b) where prompt corrective action, that would bring the liquor pH and/or the catalyst gas scrubber liquor flow rate into compliance with the acceptable range, was determined to be necessary and was not taken;
  - e. an identification of each incident of deviation described in (a) and (b) where proper records were not maintained for the investigation and/or the corrective action.

These quarterly reports shall be submitted (i.e., postmarked) by January 31, April 30, July 31, and October 31 of each year; and each report shall cover the previous calendar quarter.

5. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the baghouse and from the cyclone serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) by January 31 and July 31 of each year and shall cover the previous 6-month period.

## V. Testing Requirements

1. The permittee shall conduct, or have conducted, emission testing for emissions units P464, P465, P466, P467, P468 and P469 in accordance with the following requirements:
  - a. The emission testing shall be conducted within 180 days after achieving the maximum production rate at which emissions units P464, P465, P466, P467,

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P468 and P469 will be operated, but no later than June 30, 2010.

- b. The emission testing shall be conducted to demonstrate compliance with the following:
  - i. for the receiving hopper and sand mixer: 0.10 lb/ton of sand for VOC;
  - ii. for core making: 0.60 lb/ton of sand & control efficiencies for VOC; and
  - iii. for metal cleaning: 0.119 lb VOC/ton of sand.
- c. The following test methods shall be employed to demonstrate compliance with the above emission limitations:
  - i. for total VOC, Methods 1-4 and 18, 25 or 25A of 40 CFR Part 60, Appendix A. Appropriate methods shall be used in conjunction with the test methods and procedures specified in Methods 18, 25, or 25A of 40 CFR Part 60, Appendix A for determining total VOC mass emissions.

Alternative U.S. EPA-approved test methods may be used with prior approval from the Ohio EPA, NWDO. The test method(s) which must be employed to demonstrate compliance with the control efficiencies are specified below.

- d. 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 specified in Methods 18, 25, or 25A of 40 CFR Part 60, Appendix A for VOC emissions .
- e. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases."
- f. The test(s) shall be conducted while emissions units P464, P465, P466, P467, P468 and P469 are operating at their maximum capacities, unless otherwise specified or approved by the Ohio EPA, NWDO.
- g. During emission testing, the permittee shall also record the following information:
  - i. the pH range for the scrubbing liquid; and
  - ii. the scrubber water flow rate, in gallons/minute.
- h. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA, NWDO. 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, NWDO's refusal to accept the results of the emission test(s).

Personnel from the Ohio EPA, NWDO 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

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the performance of the control equipment.

A comprehensive written report of the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA, NWDO 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 Ohio EPA, NWDO.

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

- a. Emission Limitation:

The maximum annual amount of sand processed shall not exceed 133,875 tons per rolling, 12-month period.

Compliance Method:

Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

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- b. Emission Limitations:  
0.10 lb of VOC per ton of sand (hopper and mixing)  
0.60 lb of VOC per ton of sand (core making)  
0.119 lb of VOC per ton of sand (metal cleaning)
- Applicable Compliance Method:  
Compliance shall be demonstrated based on the results of emission testing conducted in accordance with Methods 1-4 and 18, 25 or 25A of 40 CFR Part 60, Appendix A.
- c. Emission Limitations:  
PM10 emissions shall not exceed 0.0086 lb/ton of sand (hopper and mixing)  
PM10 emissions shall not exceed 0.021 lb/ton of sand (core making)
- Applicable Compliance Method:  
If required, compliance with the company-established emission factors shall be demonstrated based on the results of emission testing conducted in accordance with Methods 201 and 202 of 40 CFR Part 51, Appendix M.
- d. Emission Limitation:  
VOC emissions shall not exceed 55.0 tpy, based on a rolling, 12-month summation of the monthly emissions.
- fugitive VOC emissions shall not exceed 2.0 tpy, based on a rolling, 12-month summation of the monthly emissions.
- PM10 emissions shall not exceed 2.0 tpy, based on a rolling, 12-month summation of the monthly emissions.
- Applicable Compliance Method:  
Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.
- e. Emission Limitation:  
Visible PE from the stack(s) serving this emissions unit shall not exceed 5% opacity, as a six-minute average.
- Applicable Compliance Method:  
If required, compliance shall be determined according to test Method 9 as set forth in the "Appendix on Test Methods" in 40 CFR Part 60 "Standards of Performance for New Stationary Sources."

## VI. Miscellaneous Requirements

None

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**B. State Only Enforceable Section**

**I. 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.

**Operations, Property, and/or Equipment - (P469) - precision sand core machine no. 6**

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-114-01 ORC 3704.03(F)	See B.III and B.IV.

**2. Additional Terms and Conditions**

**2.a** None

**II. Operational Restrictions**

None

**III. Monitoring and/or Recordkeeping Requirements**

1. The permit to install for these emissions units P464, P465, P466, P467 and P468 were evaluated based on the actual materials and the design parameters of the emissions units' exhaust system, as specified by the permittee in the permit application. The Ohio EPA's "Toxic Air Contaminant Statute", ORC 3704.03(F), was applied to this/these emissions unit(s) for each toxic air contaminant listed in OAC rule 3745-114-01, using data from the permit application; and modeling was performed for each toxic air contaminant(s) emitted at over one ton per year using an air dispersion model such as SCREEN 3.0, AERMOD, or ISCST3, or other Ohio EPA approved model. The predicted 1-hour maximum ground-level concentration result(s) from the approved air dispersion model, was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC), calculated as described in the Ohio EPA guidance document entitled "Review of New Sources of Air Toxic Emissions, Option A", as follows:
  - a. the exposure limit, expressed as a time-weighted average concentration for a conventional 8-hour workday and a 40-hour workweek, for each toxic compound(s) emitted from the emissions unit(s), (as determined from the raw materials processed and/or coatings or other materials applied) has been documented from one of the following sources and in the following order of preference (TLV was and shall be used, if the chemical is listed):
    - i. threshold limit value (TLV) from the American Conference of Governmental Industrial Hygienists' (ACGIH) "Threshold Limit Values for

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Chemical Substances and Physical Agents Biological Exposure Indices";  
or

- ii. STEL (short term exposure limit) or the ceiling value from the American Conference of Governmental Industrial Hygienists' (ACGIH) "Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices"; the STEL or ceiling value is multiplied by 0.737 to convert the 15-minute exposure limit to an equivalent 8-hour TLV.
- b. The TLV is divided by ten to adjust the standard from the working population to the general public (TLV/10).
- c. This standard is/was then adjusted to account for the duration of the exposure or the operating hours of the emissions unit(s), i.e., "X" hours per day and "Y" days per week, from that of 8 hours per day and 5 days per week. The resulting calculation was (and shall be) used to determine the Maximum Acceptable Ground-Level Concentration (MAGLC).
- d. The following summarizes the results of dispersion modeling for the significant toxic contaminants (emitted at 1 or more tons/year) or "worst case" toxic contaminant(s):

**Toxic contaminant:** phenolTLV (mg/m<sup>3</sup>): 19.25

Maximum Hourly Emission Rate (lbs/hr): 1.80 (permit total)

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m<sup>3</sup>): 4.77MAGLC (ug/m<sup>3</sup>): 458**Toxic contaminant:** m,p-xyleneTLV (mg/m<sup>3</sup>): 434

Maximum Hourly Emission Rate (lbs/hr): 1.15 (permit total)

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m<sup>3</sup>): 6.33MAGLC (ug/m<sup>3</sup>): 10,338**Toxic contaminant:** naphthaleneTLV (mg/m<sup>3</sup>): 54

Maximum Hourly Emission Rate (lbs/hr): 0.67 (permit total)

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m<sup>3</sup>): 2.93MAGLC (ug/m<sup>3</sup>): 1296

The permittee, has demonstrated that emissions of phenol, m,p-xylene and naphthalene, from emissions units P464, P465, P466, P467, P468 and P469, are calculated to be less than eighty per cent of the maximum acceptable ground level concentration (MAGLC); any new raw material or processing agent shall not be applied without evaluating each component toxic contaminant in accordance with ORC 3704.03(F).

[ORC 3704.03(F)(3)(c) and F(4)], [OAC rule 3745-114-01], Options A, Engineering Guide #70

2. Prior to making any physical changes to or changes in the method of operation of the emissions unit(s), that could impact the parameters or values that were used in the predicted 1-hour maximum ground-level concentration", the permittee shall re-model

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the change(s) to demonstrate that the MAGLC has not been exceeded. Changes that can affect the parameters/values used in determining the 1-hour maximum ground-level concentration include, but are not limited to, the following:

- a. changes in the composition of the materials used or the use of new materials, that would result in the emission of a new toxic air contaminant with a lower Threshold Limit Value (TLV) than the lowest TLV previously modeled;
- b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any toxic air contaminant listed in OAC rule 3745-114-01, that was modeled from the initial (or last) application; and
- c. physical changes to the emissions unit(s) or its/their exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Toxic Air Contaminant Statute" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01 solely due to a non-restrictive change to a parameter or process operation, where compliance with the ORC 3704.03(F), the statute, has been documented. If the change(s) meet(s) the definition of a "modification" or if a new toxic is emitted, or the modeled toxic(s) is/are expected to exceed the previous modeled level(s), then the permittee shall apply for and obtain a final permit-to-install prior to the change. The Director may consider any significant departure from the operations of the emissions unit, described in the permit-to-install application, as a modification that results in greater emissions than the emissions rate modeled to determine the ground level concentration; and may require the permittee to submit a permit-to-install application for the increased emissions.

[ORC 3704.03(F)(3)(c) and F(4)], [OAC rule 3745-114-01], Options A, Engineering Guide #70

3. The permittee shall collect, record, and retain the following information for each toxic evaluation conducted to determine compliance with the "Toxic Air Contaminant Statute":
  - a. a description of the parameters/values used in each compliance demonstration and the parameters or values changed for any re-evaluation of the toxic(s) modeled (the composition of materials, new toxic contaminants emitted, change in stack/exhaust parameters, etc.);
  - b. the Maximum Acceptable Ground-Level Concentration (MAGLC) for each significant toxic contaminant or worst-case contaminant, calculated in accordance with ORC 3704.03(F);
  - c. a copy of the computer model run(s), that established the predicted 1-hour maximum ground-level concentration that demonstrated the emissions unit(s) to

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be in compliance with ORC 3704.03(F), initially and for each change that requires re-evaluation of the toxic air contaminant emissions; and

- d. the documentation of the initial evaluation of compliance with ORC 3704.03(F) and documentation of any determination that was conducted to re-evaluate compliance due to a change made to the emissions unit(s) or the materials applied.

[ORC 3704.03(F)(3)(c) and F(4)], [OAC rule 3745-114-01], Options A, Engineering Guide #70

4. The permittee shall maintain a record of any change made to a parameter or value used in the dispersion model, used to demonstrate compliance with ORC 3704.03(F) through the predicted 1-hour maximum ground-level concentration. The record shall include the date and reason(s) for the change and if the change would increase the ground-level concentration.

[ORC 3704.03(F)(3)(c) and F(4)], [OAC rule 3745-114-01], Options A, Engineering Guide #70

#### **IV. Reporting Requirements**

1. The permittee shall submit annual reports to the appropriate Ohio EPA District Office or local air agency, documenting any changes made to a parameter or value used in the dispersion model, that was used to demonstrate compliance with ORC 3704.03(F) through the predicted 1-hour maximum ground-level concentration. If no changes to the emissions unit(s) or the exhaust stack have been made, then the report shall include a statement to this effect. This report shall be postmarked or delivered no later than January 31 following the end of each calendar year.

[ORC 3704.03(F)(3)(c) and F(4)], [OAC rule 3745-114-01], Options A, Engineering Guide #70

#### **V. Testing Requirements**

None

#### **VI. Miscellaneous Requirements**

None

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**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. State and Federally Enforceable Section**

**I. 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.

**Operations, Property, and/or Equipment - (P470) - mold fill pouring station no. 1**

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05(C) OAC rule 3745-31-10 through 20	Volatile organic compound emissions shall not exceed 0.10 pound (lb) per ton of aluminum and 1.34 tpy, based upon a rolling, 12-month summation of the monthly emissions.  See A.I.2.b, A.I.2.c, and A.I.2.d.
OAC rule 3745-31-05(C)	Particulate emissions (PE) shall not exceed 0.021 lb per ton of aluminum and 0.28 ton per year (tpy), based upon a rolling, 12-month summation of the monthly emissions.  Particulate matter emissions less than or equal to 10 microns in size (PM10) shall not exceed 0.041 lb per ton of aluminum and 0.55 tpy, based upon a rolling, 12-month summation of the monthly emissions.  See A.I.2.c and A.I.2.d.
OAC rule 3745-17-11(B)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(C).
OAC rule 3745-17-07(A)	Visible PE shall not exceed 20% opacity, as a six-minute average, except as provided by rule.

**2. Additional Terms and Conditions**

- 2.a This uncontrolled emissions unit includes two molten aluminum pumps, degas well, two electric launder troughs, one 10 ton electric leveling furnace, one electric pump well furnace, one EM pump and one mold fill pouring station.
- 2.b Based on the "Prevention of Significant Deterioration" (PSD) analysis conducted to ensure the application of "Best Available Control Technology" (BACT), it has been determined that no control technologies for VOC were cost effective.

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- 2.c** The rolling, 12-month emission limitations are federally enforceable limitations established for the purpose of reducing emissions. The emission limitations are based on the federally enforceable restriction on the amount of aluminum processed (See A.II.1).
- 2.d** The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the emissions of VOC, PE and PM10 emissions from this air contaminant source since the uncontrolled potentials to emit for each is less than ten tons per year taking into account the federally enforceable restriction on the amount of aluminum processed.

## II. Operational Restrictions

1. The maximum annual aluminum usage for emissions units P470 and P471, combined, shall not exceed 26,775 tons, based upon a rolling, 12-month summation of the monthly quantities of aluminum used.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of this permit, the permittee shall not exceed the aluminum usage levels specified in the following table, for emissions units P470 and P471 combined:

Month(s)	Maximum Allowable Cumulative Aluminum Usage (tons)
1	2,680
1-2	5,360
1-3	8,040
1-4	10,720
1-5	13,400
1-6	16,080
1-7	18,760
1-8	21,440
1-9	24,120
1-10	25,013
1-11	25,907
1-12	26,775

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual aluminum usage restriction shall be based upon a rolling, 12-month summation of the monthly quantity of aluminum poured in emissions unit P470 and P471 combined.

## III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall collect and record the following information each month for emissions unit P470 and P471, combined:
- the amount of aluminum processed (amount poured at emissions units P470 and P471), in tons;
  - for the first 12 months of operation following the issuance of this permit, the

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- cumulative quantity of aluminum processed, in tons; and
- c. after the first 12 months of operation following the issuance of this permit, the rolling, 12-month summation of the monthly amount of aluminum processed.
2. In addition to the above information, the permittee shall also record the following information each month for emissions units P470 and P471, combined:
    - a. the calculated emission rate for VOC, in tons (A.III.1.a x 0.10 lb/ton of aluminum processed x ton/2000 lbs);
    - b. the calculated emission rate for PE, in tons, (A.III.1.a x 0.021 lb/ton of aluminum processed x ton/2000 lbs);
    - c. the calculated emission rate for PM10, in tons, (A.III.1.a x 0.041 lb/ton of aluminum processed x ton/2000 lbs);
    - d. the annual VOC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates;
    - e. the annual PE emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates; and
    - f. the annual PM10 emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.
  3. The permittee shall perform weekly\* checks when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, 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 date and time of the visible emission observation;
    - b. the identification of the stack observed;
    - c. the color of the emissions;
    - d. the total duration of any visible emission observation; and
    - e. the corrective actions, if any, taken to eliminate the visible emissions.

\*once during each normal calendar week

**IV. Reporting Requirements**

1. The permittee shall submit quarterly deviation (excursion) reports, which identify all exceedances of the following:
  - a. for the first 12 calendar months of operation following the issuance of this permit, the maximum allowable cumulative aluminum usage restriction;

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- b. after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month aluminum usage restriction, and
- c. the rolling, 12-month emission limitations for PE, PM10 & VOC;

These quarterly deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

- 2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) by January 31 and July 31 of each year and shall cover the previous 6-month period.

## V. Testing Requirements

- 1. The permittee shall conduct, or have conducted, emission testing for emissions units P470, and P471 in accordance with the following requirements:
  - a. The emission testing shall be conducted within 180 days after achieving the maximum production rate at which emissions units P470 and P471 will be operated, but no later than June 30, 2010.
  - b. The emission testing shall be conducted to demonstrate compliance with the following:
    - i. for VOC, 0.10 lb/ton of aluminum.
  - c. The following test methods shall be employed to demonstrate compliance with the above emission limitations:
    - i. for total VOC, Methods 1-4 and 18, 25 or 25A of 40 CFR Part 60, Appendix A. Appropriate methods shall be used in conjunction with the test methods and procedures specified in Methods 18, 25, or 25A of 40 CFR Part 60, Appendix A for determining total VOC mass emissions.

Alternative U.S. EPA-approved test methods may be used with prior approval from the Ohio EPA, NWDO. The test method(s) which must be employed to demonstrate compliance with the control efficiencies are specified below.

- d. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases."
- e. The test(s) shall be conducted while emissions units P470 (13,125 lbs/hr; or 10,500 lbs/hr if emissions unit P471 is in operation) and P471 (2,625 lbs/hr) are operating at their maximum capacities\*, unless otherwise specified or approved by the Ohio EPA, NWDO.

\*maximum capacity as presented in the application is based on 75 molds/hour

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and 175 pounds of aluminum per mold.

- f. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA, NWDO. 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, NWDO's refusal to accept the results of the emission test(s).

Personnel from the Ohio EPA, NWDO 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 of the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA, NWDO 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 Ohio EPA, NWDO.

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

- a. Emission Limitation:

The amount of aluminum poured shall not exceed 26,775 tons per rolling, 12-month period for emissions unit P470 and P471, combined.

Compliance Method:

Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

- b. Emission Limitation:

VOC emissions shall not exceed 0.10 lb/ton of aluminum.

Applicable Compliance Method:

Compliance shall be demonstrated based on the results of emission testing conducted in accordance with Methods 1-4 and 18, 25 or 25A of 40 CFR Part 60, Appendix A for VOC.

- c. Emission Limitations:

PE shall not exceed 0.0210 lb/ton of aluminum.  
PM10 emission shall not exceed 0.041 lb/ton of aluminum.

Applicable Compliance Method:

If required, compliance shall be demonstrated based on the results of emission

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testing conducted in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A, for PE; and Methods 201 and 202 of 40 CFR Part 51, Appendix M, for PM10.

- d. Emission Limitations:  
VOC emissions shall not exceed 1.34 tpy.  
PE shall not exceed 0.28 tpy.  
PM10 emissions shall not exceed 0.55 tpy.

Applicable Compliance Method:

Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

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- e. Emission Limitation:  
Visible PE from the stack(s) serving this emissions unit shall not exceed 20% opacity, as a six-minute average.

Applicable Compliance Method:

If required, compliance shall be determined according to test Method 9 as set forth in the "Appendix on Test Methods" in 40 CFR Part 60 "Standards of Performance for New Stationary Sources."

**VI. Miscellaneous Requirements**

None

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**B. State Only Enforceable Section**

**I. 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.

**Operations, Property, and/or Equipment -(P470) - mold fill pouring station no. 1**

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
None	None

**2. Additional Terms and Conditions**

2.a None

**II. Operational Restrictions**

None

**III. Monitoring and/or Recordkeeping Requirements**

None

**IV. Reporting Requirements**

None

**V. Testing Requirements**

None

**VI. Miscellaneous Requirements**

None

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**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. State and Federally Enforceable Section**

**I. 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.

**Operations, Property, and/or Equipment -(P471) - mold fill pouring station no. 2 (pilot line)**

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05(C) OAC rule 3745-31-10 through 20	Volatile organic compound emissions shall not exceed 0.10 pound (lb) per ton of aluminum and 1.34 tpy, based upon a rolling, 12-month summation of the monthly emissions.  See A.I.2.b, A.I.2.c and A.I.2.d.
OAC rule 3745-31-05(C)	Particulate emissions (PE) shall not exceed 0.021 lb per ton of aluminum and 0.28 ton per year (tpy), based upon a rolling, 12-month summation of the monthly emissions.  Particulate matter emissions less than or equal to 10 microns in size (PM10) shall not exceed 0.041 lb per ton of aluminum and 0.55 tpy, based upon a rolling, 12-month summation of the monthly emissions.  See A.I.2.c and A.I.2.d.
OAC rule 3745-17-11(B)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(C).
OAC rule 3745-17-07(A)	Visible PE shall not exceed 20% opacity, as a six-minute average, except as provided by rule.

**2. Additional Terms and Conditions**

- 2.a This uncontrolled emissions unit includes two molten aluminum pumps, degas well, two electric launder troughs, one 10 ton electric leveling furnace, one electric pump well furnace, one EM pump and one mold fill pouring station.
- 2.b Based on the "Prevention of Significant Deterioration" (PSD) analysis conducted to ensure the application of "Best Available Control Technology" (BACT), it has been determined that no control technologies for VOC were cost effective.
- 2.c The rolling, 12-month emission limitations are federally enforceable limitations

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established for the purpose of reducing emissions. The emission limitations are based on the federally enforceable restriction on the amount of aluminum processed (See A.II.1).

- 2.d** The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to VOC, PE and PM10 from this air contaminant source since the uncontrolled potential to emit for each is less than ten tons per year taking into account the federally enforceable restriction on the amount of aluminum processed.

## II. Operational Restrictions

1. The maximum annual aluminum usage for emissions units P470 and P471, combined, shall not exceed 26,775 tons, based upon a rolling, 12-month summation of the monthly quantities of aluminum used.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of this permit, the permittee shall not exceed the aluminum usage levels specified in the following table, for emissions units P470 and P471 combined:

<u>Month(s)</u>	<u>Maximum Allowable Cumulative Aluminum Usage (tons)</u>
1	2,680
1-2	5,360
1-3	8,040
1-4	10,720
1-5	13,400
1-6	16,080
1-7	18,760
1-8	21,440
1-9	24,120
1-10	25,013
1-11	25,907
1-12	26,775

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual aluminum usage restriction shall be based upon a rolling, 12-month summation of the monthly quantity of aluminum poured in emissions unit P470 and P471 combined.

## III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall collect and record the following information each month for emissions unit P470 and P471, combined:
  - a. the amount of aluminum processed (amount poured at emissions units P470 and P471), in tons;
  - b. for the first 12 months of operation following the issuance of this permit, the cumulative quantity of aluminum processed, in tons; and

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- c. after the first 12 months of operation following the issuance of this permit, the rolling, 12-month summation of the monthly amount of aluminum processed.
2. In addition to the above information, the permittee shall also record the following information each month for emissions units P470 and P471, combined:
  - a. the calculated emission rate for VOC, in tons (A.III.1.a x 0.10 lb/ton of aluminum processed x ton/2000 lbs);
  - b. the calculated emission rate for PE, in tons, (A.III.1.a x 0.021 lb/ton of aluminum processed x ton/2000 lbs);
  - c. the calculated emission rate for PM10, in tons, (A.III.1.a x 0.041 lb/ton of aluminum processed x ton/2000 lbs);
  - d. the annual VOC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates;
  - e. the annual PE emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates; and
  - f. the annual PM10 emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.
3. The permittee shall perform weekly\* checks when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, 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 date and time of the visible emission observation;
  - b. the identification of the stack observed;
  - c. the color of the emissions;
  - d. the total duration of any visible emission observation; and
  - e. the corrective actions, if any, taken to eliminate the visible emissions.

\*once during each normal calendar week

**IV. Reporting Requirements**

1. The permittee shall submit quarterly deviation (excursion) reports, which identify all exceedances of the following:
  - a. for the first 12 calendar months of operation following the issuance of this permit, the maximum allowable cumulative aluminum usage restriction;

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- b. after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month aluminum usage restriction, and
- c. the rolling, 12-month emission limitations for PE, PM10 & VOC;

These quarterly deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

- 2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) by January 31 and July 31 of each year and shall cover the previous 6-month period.

## V. Testing Requirements

- 1. The permittee shall conduct, or have conducted, emission testing for emissions units P470, and P471 in accordance with the following requirements:
  - a. The emission testing shall be conducted within 180 days after achieving the maximum production rate at which emissions units P470 and P471 will be operated, but no later than June 30, 2010.
  - b. The emission testing shall be conducted to demonstrate compliance with the following:
    - i. for VOC, 0.10 lb/ton of aluminum.
  - c. The following test methods shall be employed to demonstrate compliance with the above emission limitations:
    - i. for total VOC, Methods 1-4 and 18, 25 or 25A of 40 CFR Part 60, Appendix A. Appropriate methods shall be used in conjunction with the test methods and procedures specified in Methods 18, 25, or 25A of 40 CFR Part 60, Appendix A for determining total VOC mass emissions.

Alternative U.S. EPA-approved test methods may be used with prior approval from the Ohio EPA, NWDO. The test method(s) which must be employed to demonstrate compliance with the control efficiencies are specified below.

- d. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases."
- e. The test(s) shall be conducted while emissions units P470 (13,125 lbs/hr; or 10,500 lbs/hr if emissions unit P471 is in operation) and P471 (2,625 lbs/hr) are operating at their maximum capacities\*, unless otherwise specified or approved by the Ohio EPA, NWDO.

\*maximum capacity as presented in the application is based on 75 molds/hour and 175 pounds of aluminum per mold.

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- f. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA, NWDO. 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, NWDO's refusal to accept the results of the emission test(s).

Personnel from the Ohio EPA, NWDO 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 of the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA, NWDO 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 Ohio EPA, NWDO.

2. Compliance with the emission limitations in Section A.I.1 of these terms and conditions shall be determined in accordance with the following methods:
- a. Emission Limitation:  
The amount of aluminum poured shall not exceed 26,775 tons per rolling, 12-month period for emissions unit P470 and P471, combined.
- Compliance Method:  
Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.
- b. Emission Limitation:  
VOC emissions shall not exceed 0.10 lb/ton of aluminum.
- Applicable Compliance Method:  
Compliance shall be demonstrated based on the results of emission testing conducted in accordance with Methods 1-4 and 18, 25 or 25A of 40 CFR Part 60, Appendix A for VOC.
- c. Emission Limitations:  
PE shall not exceed 0.0210 lb/ton of aluminum.  
PM10 emission shall not exceed 0.041 lb/ton of aluminum.
- Applicable Compliance Method:  
If required, compliance shall be demonstrated based on the results of emission testing conducted in accordance with Methods 1-5 of 40 CFR Part 60, Appendix

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A, for PE; and Methods 201 and 202 of 40 CFR Part 51, Appendix M, for PM10.

- d. Emission Limitations:  
VOC emissions shall not exceed 1.34 tpy.  
PE shall not exceed 0.28 tpy.  
PM10 emissions shall not exceed 0.55 tpy.

Applicable Compliance Method:  
Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.

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- e. Emission Limitation:  
Visible PE from the stack(s) serving this emissions unit shall not exceed 20% opacity, as a six-minute average.

Applicable Compliance Method:

If required, compliance shall be determined according to test Method 9 as set forth in the "Appendix on Test Methods" in 40 CFR Part 60 "Standards of Performance for New Stationary Sources."

**VI. Miscellaneous Requirements**

None

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**B. State Only Enforceable Section**

**I. 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.

**Operations, Property, and/or Equipment - (P471) - mold fill pouring station no. 2 (pilot line)**

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
None	None

**2. Additional Terms and Conditions**

2.a None

**II. Operational Restrictions**

None

**III. Monitoring and/or Recordkeeping Requirements**

None

**IV. Reporting Requirements**

None

**V. Testing Requirements**

None

**VI. Miscellaneous Requirements**

None

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**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. State and Federally Enforceable Section**

**I. 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.

**Operations, Property, and/or Equipment - (P472) - precision sand mold cooling line**

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05(C) OAC rule 3745-31-10 through 20	Volatile organic compound (VOC) emissions shall not exceed 0.25 pounds (lbs) per ton of aluminum and 3.35 tons per year (tpy), based upon a rolling, 12-month summation of the monthly emissions.  See A.I.2.b, A.I.2.c, and A.I.2.e.
OAC rule 3745-31-05(C)	Particulate emissions (PE) shall not exceed 0.12 lb/ton of aluminum and 1.61 tpy, based upon a rolling, 12-month summation of the monthly emissions.  Particulate matter emissions less than or equal to 10 microns in size (PM10) shall not exceed 0.241 lb/ton of aluminum and 3.23tpy, based upon a rolling, 12-month summation of the monthly emissions.  Visible PE shall not exceed 5% opacity, as a six-minute average.  See A.I.2.d and A.I.2.e.
OAC rule 3745-17-11(B) OAC rule 3745-17-07(A)	The emission limitations specified by these rules are less stringent than the emission limitations established pursuant to OAC rule 3745-31-05(C).

**2. Additional Terms and Conditions**

- 2.a This emissions unit includes two chill removal stations and a mold cooling line. The abatement system includes a baghouse followed by a regenerative thermal oxidizer (RTO) (5 mmBtu/hr) and exhausts to a single stack.
- 2.b The permittee shall employ best available control technology (BACT) on this emissions unit. BACT has been determined to be the use of the following:
  - i. a regenerative thermal oxidizer (RTO). The RTO shall meet a minimum control efficiency of 95% for VOC emissions.

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- 2.c** The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to VOC from this air contaminant source since the potential to emit is less than ten tons per year taking into account the federally enforceable restriction on the amount of aluminum processed and the use of a thermal oxidizer.
- 2.d** The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the emissions of PE and PM10 emissions from this air contaminant source since the potential to emit for each is less than ten tons per year taking into account the federally enforceable restriction on the amount of aluminum processed and the use of a baghouse.
- 2.e** The rolling, 12-month emission limitations are federally enforceable limitations established for the purpose of reducing emissions. The emission limitations are based on the federally enforceable restriction on aluminum usage (See A.II.1).

## II. Operational Restrictions

1. The maximum annual aluminum usage for this emissions units shall not exceed 26,775 tons, based upon a rolling, 12-month summation of the monthly quantities of aluminum used.

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

<u>Month(s)</u>	<u>Maximum Allowable Cumulative Aluminum Usage (tons)</u>
1	2,680
1-2	5,360
1-3	8,040
1-4	10,720
1-5	13,400
1-6	16,080
1-7	18,760
1-8	21,440
1-9	24,120
1-10	25,013
1-11	25,907
1-12	26,775

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual aluminum usage restriction shall be based upon a rolling, 12-month summation of the monthly quantity of aluminum poured in emissions unit P470 and P471 combined.

2. The permittee shall operate the baghouse at all times when this emissions unit is in operation.

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3. To ensure proper operation of the emissions unit, the permittee shall employ a "interlock system" that will shut down the emissions unit when the average combustion temperature within in the RTO falls below 1400 degrees Fahrenheit or when the temperature monitoring devices associated with emissions unit fail.

The "interlock system" shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations with any modifications deemed necessary by the permittee.

**III. Monitoring and/or Recordkeeping Requirements**

1. The permittee shall collect and record the following information each month for this emissions unit:
  - a. the amount of aluminum processed, in tons;
  - b. for the first 12 months of operation following the issuance of this permit, the cumulative quantity of aluminum processed, in tons; and
  - c. after the first 12 months of operation following the issuance of this permit, the rolling, 12-month summation of the monthly amount of aluminum processed.

\*The amount of aluminum processed through this emissions unit is equivalent to the amount of aluminum poured in emissions units P470 and P471. The monitoring and record keeping associated with the aluminum processed in emissions unit P470 and P471 can be used to fulfill the requirements in this section.

2. In addition to the above information, the permittee shall also record the following information each month for this emissions units:
  - a. the calculated emission rate for VOC, in tons ( $A.III.1.a \times 0.25 \text{ lb/ton of aluminum processed} \times \text{ton}/2000 \text{ lbs}$ );
  - b. the calculated emission rate for PE, in tons, ( $A.III.1.a \times 0.12 \text{ lb/ton of aluminum processed} \times \text{ton}/2000 \text{ lbs}$ );
  - c. the calculated emission rate for PM10, in tons, ( $A.III.1.a \times 0.241 \text{ lb/ton of aluminum processed} \times \text{ton}/2000 \text{ lbs}$ );
  - d. the annual VOC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates;
  - e. the annual PE emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates; and
  - f. the annual PM10 emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.

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3. The permittee shall perform weekly\* checks when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, 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 date and time of the visible emission observation;
  - b. the identification of the stack observed;
  - c. the color of the emissions;
  - d. the total duration of any visible emission observation; and
  - e. the corrective actions, if any, taken to eliminate the visible emissions.

\*once during each normal calendar week

4. In order to maintain compliance with the applicable emission limitation(s) contained in this permit, the acceptable average combustion temperature within the thermal oxidizer, for any 3-hour block of time when the emissions unit controlled by the thermal oxidizer is in operation, shall not be less than 1400 degrees Fahrenheit during any period of time the emissions unit is in operation.

The permittee shall properly install, operate, and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the thermal oxidizer when the emissions units is in operation. Units shall be in degrees Fahrenheit. The accuracy for each thermocouple, monitor, and recorder shall be guaranteed by the manufacturer to be within  $\pm 1$  percent of the temperature being measured or  $\pm 5$  degrees Fahrenheit, whichever is greater. The temperature monitor and recorder shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and the operating manuals. Following compliance testing, the permittee shall collect and record the following information each day the emissions unit(s) is/are in operation:

- a. all 3-hour blocks of time, when the emissions unit(s) controlled by the thermal oxidizer was/were in operation, during which the average combustion temperature within the thermal oxidizer was more than 50 degrees Fahrenheit below the average temperature measured during the most recent emissions test that demonstrated the emissions unit(s) was/were in compliance; and
  - b. a log of the downtime for the capture (collection) system, thermal oxidizer, and monitoring equipment when the associated emissions unit(s) was/were in operation.
5. Whenever the monitored average combustion temperature within the thermal oxidizer deviates from the range/limit specified in this permit, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation:
    - a. the date and time the deviation began;
    - b. the magnitude of the deviation at that time;
    - c. the date the investigation was conducted;
    - d. the name(s) of the personnel who conducted the investigation; and
    - e. the findings and recommendations.

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In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the operation of the control equipment within the acceptable range/limit specified in this permit, unless the permittee determines that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation ended. The permittee shall maintain records of the following information for each corrective action taken:

- f. a description of the corrective action;
- g. the date corrective action was completed;
- h. the date and time the deviation ended;
- i. the total period of time (in minutes) during which there was a deviation;
- j. the temperature readings immediately after the corrective action was implemented; and
- k. the name(s) of the personnel who performed the work.

Investigation and records required by this paragraph do not eliminate the need to comply with the requirements of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.

The temperature range/limit is effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the appropriate Ohio EPA District Office or local air agency. The permittee may request revisions to the permitted temperature range/limit based upon information obtained during future emission tests that demonstrate compliance with the allowable VOC emission rate for the controlled emissions unit(s). In addition, approved revisions to the temperature range/limit will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of administrative modification.

6. The permittee shall maintain a log for the interlock system that identifies each time period when the temperature within the RTO fell below 1400 degrees Fahrenheit and/or when the temperature monitoring devices associated with this emissions unit failed, and the emissions unit was not shut down within 30 minutes thereafter.
7. The permittee shall maintain records documenting any time periods when the emissions unit was in operation and the baghouse was not operating.

**IV. Reporting Requirements**

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) by January 31 and July 31 of each year and shall cover the previous 6-month period.

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2. The permittee shall submit deviation (excursion) reports that identify any time periods when the emissions unit was in operation and the baghouse was not operating. Each report shall be submitted within 30 days after the deviation occurs.
3. The permittee shall submit quarterly reports that identify the following information concerning the operation of the control equipment during the operation of this emissions unit:
  - a. all 3-hour blocks of time during which the average combustion temperature within the thermal incinerator, when the emissions unit was in operation, was outside of the range specified in this permit;
  - b. an identification of each incident of deviation described in (a) where a prompt investigation was not conducted;
  - c. an identification of each incident of deviation described in (a) where prompt corrective action, that would bring the combustion temperature into compliance with the acceptable range, was determined to be necessary and was not taken; and
  - d. an identification of each incident of deviation described in (a) where proper records were not maintained for the investigation and/or the corrective action.

These quarterly reports shall be submitted (i.e., postmarked) by January 31, April 30, July 31, and October 31 of each year; and each report shall cover the previous calendar quarter.

4. The permittee shall submit quarterly deviation (excursion) reports, which identify all exceedances of the following:
  - a. for the first 12 calendar months of operation following the issuance of this permit, the maximum allowable cumulative aluminum usage restriction;
  - b. after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month aluminum usage restriction, and
  - c. the rolling, 12-month emission limitations for PE, PM10 & VOC.

These quarterly deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

5. The permittee shall submit a written report to the Director identifying all time periods when the temperature within the RTO fell below 1400 degrees Fahrenheit and/or when the temperature monitoring devices associated with this emissions unit failed, and the emissions unit was not shut down within 30 minutes thereafter. Each report shall be submitted within 30 days after the occurrence.

## V. Testing Requirements

1. The permittee shall conduct, or have conducted, emission testing in accordance with the following requirements:

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- a. The emission testing shall be conducted within 180 days after achieving the maximum production rate at which this emissions units will be operated, but no later than June 30, 2010.
- b. The emission testing shall be conducted to demonstrate compliance with the following:
  - i. for VOC - 0.25 lb/ton of aluminum;
  - ii. for PE - 0.12 lb/ton of aluminum;
  - iii. for PM10 - 0.241 lb/ton of aluminum; and
  - iv. compliance with the control efficiency limitation for VOCs from the RTO controlling this emissions unit.
- c. The following test methods shall be employed to demonstrate compliance with the above emission limitations:
  - i. for total VOC, Methods 1-4 and 18, 25 or 25A of 40 CFR Part 60, Appendix A. Appropriate methods shall be used in conjunction with the test methods and procedures specified in Methods 18, 25, or 25A of 40 CFR Part 60, Appendix A for determining total VOC mass emissions;
  - ii. for PE, Methods 1-5 of 40 CFR Part 60, Appendix A; and
  - iii. for PM10, Methods 201/202A of 40 CFR Part 51, Appendix M.

Alternative U.S. EPA-approved test methods may be used with prior approval from the Ohio EPA, NWDO. The test method(s) which must be employed to demonstrate compliance with the control efficiencies are specified below.
- d. 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 specified in Methods 18, 25, or 25A of 40 CFR Part 60, Appendix A for VOC emissions .
- e. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases."
- f. The test(s) shall be conducted while this emissions units is operating at its maximum capacities, unless otherwise specified or approved by the Ohio EPA, NWDO. The maximum capacity for this emissions units is 75 molds per hour (which relates to 52,500 pounds of sand per hour and 13,125 tons of aluminum per hour for a combined process weight rate of 65,700 pounds per hour)
- g. During emission testing, the permittee shall also record the average combustion temperature within the thermal incinerator, in degrees Fahrenheit.
- h. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA, NWDO. 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

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submit such notification for review and approval prior to the test(s) may result in the Ohio EPA, NWDO's refusal to accept the results of the emission test(s).

Personnel from the Ohio EPA, NWDO 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 of the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA, NWDO 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 Ohio EPA, NWDO.

2. Compliance with the emissions limitations in Section A.I.1 of these terms and conditions shall be determined in accordance with the following methods:
  - a. Emission Limitation:  
The maximum annual amount of aluminum processed shall not exceed 26,775 tons 12-month period.  
  
Compliance Method:  
Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.
  - b. Emission Limitation:  
VOC emissions shall not exceed 0.25 lb/ton of aluminum.  
  
Compliance Method:  
Compliance shall be demonstrated based on the results of the emission testing conducted in accordance with Methods 1-4 and 18, 25 or 25A of 40 CFR Part 60, Appendix A.
  - c. Emission Limitation:  
PE shall not exceed 0.12 lb/ton of aluminum.  
  
Compliance Method:  
Compliance with the lb/ton emission limitation shall be demonstrated based on the results of the emission testing conducted in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.
  - d. Emission Limitation:  
PM10 shall not exceed 0.241 lb/ton of aluminum.  
  
Compliance Method:  
Compliance with the lb/ton emission limitation shall be demonstrated based on

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the results of the emission testing conducted in accordance with Methods 201 and 202 of 40 CFR Part 51, Appendix M.

- e. Emission Limitations:  
VOC emissions shall not exceed 3.35 tpy, based upon a rolling, 12-month summation of the monthly emissions.

PE shall not exceed 1.61 tpy, based upon a rolling, 12-month summation of the monthly emissions.

PM10 emissions shall not exceed 3.23tpy, based on a rolling, 12-month summation of the monthly emissions.

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Compliance Method:

Compliance with the annual emission limitations shall be demonstrated by the record keeping requirements specified in Section A.III.3.

- f. Emission Limitation:  
Visible PE from the stack(s) serving this emissions unit shall not exceed 5% opacity, as a six-minute average.

Compliance Method:

If required, compliance shall be determined according to test Method 9 as set forth in the "Appendix on Test Methods" in 40 CFR Part 60 "Standards of Performance for New Stationary Sources."

- g. Emission Limitation:  
The regenerative thermal oxidizer shall meet a minimum control efficiency of 95% for VOC emissions.

Applicable Compliance Method:

Compliance with the control efficiency requirements above shall be demonstrated based on the results of emission testing conducted in accordance with the methods outlined in Section V.1 of this permit.

**VI. Miscellaneous Requirements**

None

**Issued: To be entered upon final issuance**

**B. State Only Enforceable Section**

**I. 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.

**Operations, Property, and/or Equipment - (P472) - precision sand mold cooling line**

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
None	None

**2. Additional Terms and Conditions**

2.a None

**II. Operational Restrictions**

None

**III. Monitoring and/or Recordkeeping Requirements**

None

**IV. Reporting Requirements**

None

**V. Testing Requirements**

None

**VI. Miscellaneous Requirements**

None

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**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. State and Federally Enforceable Section**

**I. 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.

**Operations, Property, and/or Equipment - (P473) - precision sand mold shakeout with duct burner**

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05(C) OAC rule 3745-31-10 through 20	Volatile organic compound (VOC) emissions shall not exceed 0.95 pound (lb) per ton of aluminum and 12.72 tons per year(tpy), based upon a rolling, 12-month summation of the monthly emissions.  See A.I.2.b and A.I.2.d.
OAC rule 3745-31-05(C)	Particulate matter emissions (PE) shall not exceed 0.308 lb/ton of aluminum and 4.15 tpy, based upon a rolling, 12-month summation of the monthly emissions.  Particulate matter emissions less than or equal to 10 microns in size (PM10) shall not exceed 0.615 lb/ton of aluminum and 8.26tpy, based upon a rolling, 12-month summation of the monthly emissions.  Visible PE shall not exceed 5% opacity, as a six-minute average.  See A.I.2.c and A.I.2.d.
OAC rule 3745-17-11(B) OAC rule 3745-17-07(A)	The emission limitations specified by these rules are less stringent than the emission limitations established pursuant to OAC rule 3745-31-05(C).
OAC rule 3745-31-05(A)(3)(b)	See A.I.2.e.
OAC rule 3745-18-06(E)	Sulfur dioxide (SO <sub>2</sub> ) emissions shall not exceed 106.22 lbs/hr.
OAC rule 3745-21-08(B)	See A.I.2.f.

**2. Additional Terms and Conditions**

- 2.a This emissions unit includes one shakeout unit and a duct burner (10 mmBtu/hr). The abatement system includes a baghouse followed by a regenerative thermal

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oxidizer (RTO) (5 mmBtu/hr) and exhausts to a single stack.

- 2.b** The permittee shall employ best available control technology (BACT) on this emissions unit. BACT has been determined to be the use of the following:
- i. a regenerative thermal oxidizer (RTO). The RTO shall meet a minimum control efficiency of 95% for VOC emissions.
- 2.c** The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to PE and PM10 emissions from this air contaminant source since the potential to emit for each is less than 10 tons per year taking into account the federally enforceable restriction on aluminum usage and the use of a baghouse.
- 2.d** The rolling, 12-month emission limitations are federally enforceable limitations established for the purpose of reducing emissions. The emission limitations are based on the federally enforceable limitation on aluminum usage (See A.II.1).
- 2.e** The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO) and SO<sub>2</sub> emissions from this air contaminant source since the uncontrolled potential to emit (PTE) is less than ten tons per year.

The PTE for this emissions unit is 6.12 tpy of NO<sub>x</sub>; determined by multiplying the established emission factor (based on AP42) of 0.457 lb of NO<sub>x</sub>/ton of aluminum by the annual amount of aluminum poured of 26,775 tons and then dividing by 2000 lbs/ton.

The PTE for this emissions unit is 3.06 tpy of CO; determined by multiplying the established emission factor (based on AP42) of 0.23 lb of CO/ton of aluminum by the annual amount of aluminum poured of 26,775 tons and then dividing by 2000 lbs/ton.

The annual emission rate for this emissions unit is 0.031 tpy of SO<sub>2</sub>; determined by multiplying the established emission factor (based on AP42) of 0.00229 lb of SO<sub>2</sub>/ton of aluminum by the annual amount of aluminum poured of 26,775 tons and then dividing by 2000 lbs/ton.

- 2.f** The design of the emissions unit and the technology associated with the current operating practices satisfy the "best available control techniques and operating practices" required pursuant to OAC rule 3745-21-08(B).

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. On June 24, 2003, that rule revision was submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP), however, until the U.S. EPA approves the revisions to OAC rule 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

**Issued: To be entered upon final issuance****II. Operational Restrictions**

1. The maximum annual aluminum usage for this emissions units shall not exceed 26,775 tons, based upon a rolling, 12-month summation of the monthly quantities of aluminum used.

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

<u>Month(s)</u>	<u>Maximum Allowable Cumulative Aluminum Usage (tons)</u>
1	2,680
1-2	5,360
1-3	8,040
1-4	10,720
1-5	13,400
1-6	16,080
1-7	18,760
1-8	21,440
1-9	24,120
1-10	25,013
1-11	25,907
1-12	26,775

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual aluminum usage restriction shall be based upon a rolling, 12-month summation of the monthly quantity of aluminum poured in emissions unit P470 and P471 combined.

2. The permittee shall operate the baghouse at all times when this emissions unit is in operation.
3. To ensure proper operation of the emissions unit, the permittee shall employ a "interlock system" that will shut down the emissions unit when the average combustion temperature within in the RTO falls below 1400 degrees Fahrenheit or when the temperature monitoring devices associated with emissions unit fail.

The "interlock system" shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations with any modifications deemed necessary by the permittee.

**III. Monitoring and/or Recordkeeping Requirements**

1. The permittee shall collect and record the following information each month for this emissions unit:

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- a. the amount of aluminum processed, in tons;
- b. for the first 12 months of operation following the issuance of this permit, the cumulative quantity of aluminum processed, in tons; and
- c. after the first 12 months of operation following the issuance of this permit, the rolling, 12-month summation of the monthly amount of aluminum processed.

\*The amount of aluminum processed through this emissions unit is equivalent to the amount of aluminum poured in emissions units P470 and P471. The monitoring and record keeping associated with the aluminum processed in emissions unit P470 and P471 can be used to fulfill the requirements in this section.

2. In addition to the above information, the permittee shall also record the following information each month for this emissions units:
  - a. the calculated emission rate for VOC, in tons (A.III.1.a x 0.95 pound of VOC/ton of aluminum x ton/2000 pounds);
  - b. the calculated emission rate for PE, in tons, (A.III.1.a x 0.308 pound of PE/ton of aluminum x ton/2000 pounds);
  - c. the calculated emission rate for PM10, in tons, (A.III.1.a x 0.615 pound of PM10/ton of aluminum x ton/2000 pounds);
  - d. the annual VOC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates;
  - e. the annual PE emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates; and
  - f. the annual PM10 emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.
3. The permittee shall perform weekly\* checks when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, 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 date and time of the visible emission observation;
  - b. the identification of the stack observed;
  - c. the color of the emissions;
  - d. the total duration of any visible emission observation; and
  - e. the corrective actions, if any, taken to eliminate the visible emissions.

\* once during each normal operating calendar week

4. In order to maintain compliance with the applicable emission limitation(s) contained in this permit, the acceptable average combustion temperature within the thermal oxidizer, for any 3-hour block of time when the emissions unit controlled by the thermal oxidizer

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is in operation, shall not be less than 1400 degrees Fahrenheit during any period of time the emissions unit is in operation.

The permittee shall properly install, operate, and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the thermal oxidizer when the emissions units is in operation. Units shall be in degrees Fahrenheit. The accuracy for each thermocouple, monitor, and recorder shall be guaranteed by the manufacturer to be within  $\pm 1$  percent of the temperature being measured or  $\pm 5$  degrees Fahrenheit, whichever is greater. The temperature monitor and recorder shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and the operating manuals. Following compliance testing, the permittee shall collect and record the following information each day the emissions unit(s) is/are in operation:

- a. all 3-hour blocks of time, when the emissions unit(s) controlled by the thermal oxidizer was/were in operation, during which the average combustion temperature within the thermal oxidizer was more than 50 degrees Fahrenheit below the average temperature measured during the most recent emissions test that demonstrated the emissions unit(s) was/were in compliance; and
  - b. a log of the downtime for the capture (collection) system, thermal oxidizer, and monitoring equipment when the associated emissions unit(s) was/were in operation.
5. Whenever the monitored average combustion temperature within the thermal oxidizer deviates from the range/limit specified in this permit, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation:
- a. the date and time the deviation began;
  - b. the magnitude of the deviation at that time;
  - c. the date the investigation was conducted;
  - d. the name(s) of the personnel who conducted the investigation; and
  - e. the findings and recommendations.

In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the operation of the control equipment within the acceptable range/limit specified in this permit, unless the permittee determines that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation ended. The permittee shall maintain records of the following information for each corrective action taken:

- f. a description of the corrective action;
- g. the date corrective action was completed;
- h. the date and time the deviation ended;
- i. the total period of time (in minutes) during which there was a deviation;

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- j. the temperature readings immediately after the corrective action was implemented; and
- k. the name(s) of the personnel who performed the work.

Investigation and records required by this paragraph do not eliminate the need to comply with the requirements of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.

The temperature range/limit is effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the appropriate Ohio EPA District Office or local air agency. The permittee may request revisions to the permitted temperature range/limit based upon information obtained during future emission tests that demonstrate compliance with the allowable VOC emission rate for the controlled emissions unit(s). In addition, approved revisions to the temperature range/limit will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of administrative modification.

- 6. The permittee shall maintain a log for the interlock system that identifies each time period when the temperature within the RTO fell below 1400 degrees Fahrenheit and/or when the temperature monitoring devices associated with this emissions unit failed, and the emissions unit was not shut down within 30 minutes thereafter.

#### IV. Reporting Requirements

- 1. The permittee shall submit quarterly deviation (excursion) reports, which identify all exceedances of the following:
  - a. for the first 12 calendar months of operation following the issuance of this permit, the maximum allowable cumulative aluminum usage restriction;
  - b. after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month aluminum usage restriction, and
  - c. the rolling, 12-month emission limitations for PE, PM10 & VOC.

These quarterly deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

- 2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) by January 31 and July 31 of each year and shall cover the previous 6-month period.
- 3. The permittee shall submit deviation (excursion) reports that identify any time periods when the emissions unit was in operation and the baghouse was not operating. Each report shall be submitted within 30 days after the deviation occurs.
- 4. The permittee shall submit quarterly reports that identify the following information concerning the operation of the control equipment during the operation of this

Emissions Unit ID: P473

emissions unit:

- a. all 3-hour blocks of time during which the average combustion temperature within the thermal incinerator, when the emissions unit was in operation, was outside of the range specified in this permit;
- b. an identification of each incident of deviation described in (a) where a prompt investigation was not conducted;
- c. an identification of each incident of deviation described in (a) where prompt corrective action, that would bring the combustion temperature into compliance with the acceptable range, was determined to be necessary and was not taken; and
- d. an identification of each incident of deviation described in (a) where proper records were not maintained for the investigation and/or the corrective action.

These quarterly reports shall be submitted (i.e., postmarked) by January 31, April 30, July 31, and October 31 of each year; and each report shall cover the previous calendar quarter.

5. The permittee shall submit a written report to the Director identifying all time periods when the temperature within the RTO fell below 1400 degrees Fahrenheit and/or when the temperature monitoring devices associated with this emissions unit failed, and the emissions unit was not shut down within 30 minutes thereafter. Each report shall be submitted within 30 days after the occurrence.

## V. Testing Requirements

1. The permittee shall conduct, or have conducted, emission testing in accordance with the following requirements:
  - a. The emission testing shall be conducted within 180 days after achieving the maximum production rate at which this emissions units will be operated, but no later than June 30, 2010.
  - b. The emission testing shall be conducted to demonstrate compliance with the following:
    - i. for VOC - 0.95 lb/ton of aluminum;
    - ii. for PE - 0.308 lb/ton of aluminum;
    - iii. for PM10 - 0.615 lb/ton of aluminum; and
    - iv. compliance with the control efficiency limitation for VOCs from the RTO controlling this emissions unit.
  - c. The following test methods shall be employed to demonstrate compliance with the above emission limitations:
    - i. for total VOC, Methods 1-4 and 18, 25 or 25A of 40 CFR Part 60, Appendix A. Appropriate methods shall be used in conjunction with the test methods and procedures specified in Methods 18, 25, or 25A of 40 CFR Part 60, Appendix A for determining total VOC mass emissions.

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- ii. for PE, Methods 1-5 of 40 CFR Part 60, Appendix A.
- iii. for PM10, Methods 201/202 of 40 CFR Part 51, Appendix M.

Alternative U.S. EPA-approved test methods may be used with prior approval from the Ohio EPA, NWDO. The test method(s) which must be employed to demonstrate compliance with the control efficiencies are specified below.

- d. 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 specified in Methods 18, 25, or 25A of 40 CFR Part 60, Appendix A for VOC emissions .
- e. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases."
- f. The test(s) shall be conducted while this emissions units is operating at its maximum capacities, unless otherwise specified or approved by the Ohio EPA, NWDO. The maximum capacity for this emissions units is 75 molds per hour (which relates to 52,500 pounds of sand per hour and 13,200 tons of aluminum per hour for a combined process weight rate of 65,700 pounds per hour)
- g. During emission testing, the permittee shall also record the average combustion temperature within the thermal incinerator, in degrees Fahrenheit.
- h. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA, NWDO. 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, NWDO's refusal to accept the results of the emission test(s).

Personnel from the Ohio EPA, NWDO 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 of the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA, NWDO 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 Ohio EPA, NWDO.

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

Emissions Unit ID: P473

- a. Emission Limitation:  
The maximum annual amount of aluminum processed shall not exceed 26,775 tons per rolling, 12-month period.
- Compliance Method:  
Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.
- b. Emission Limitations:  
VOC emissions shall not exceed 12.72 tpy, based upon a rolling, 12-month summation of the monthly emissions.
- PE shall not exceed 4.15 tpy, based upon a rolling, 12-month summation of the monthly emissions.
- PM10 shall not exceed 8.26 tpy, based upon a rolling, 12-month summation of the monthly emissions.
- Compliance Method:  
Compliance with the annual emission limitations above shall be demonstrated by the record keeping requirements specified in section A.III.2.
- c. Emission Limitation:  
VOC emissions shall not exceed 0.95 lbs/ton of aluminum.
- Compliance Method:  
Compliance shall be demonstrated based on the results of the emission testing conducted in accordance with Methods 1-4 and 18, 25 or 25A of 40 CFR Part 60, Appendix A.
- d. Emission Limitation:  
PE shall not exceed 0.308 lb/ton of aluminum
- Compliance Method:  
Compliance with the lb/ton emission limitation shall be demonstrated based on the results of the emission testing conducted in accordance with Methods 1-5, of 40 CFR Part 60, Appendix A.
- e. Emission Limitation:  
PM10 shall not exceed 0.615 lb/ton of aluminum
- Compliance Method:  
Compliance with the lb/ton emission limitation shall be demonstrated based on the results of the emission testing conducted in accordance with Methods 201/202, of 40 CFR Part 51, Appendix M.
- f. Emission Limitation:  
Visible PE from the stack(s) serving this emissions unit shall not exceed 5% opacity, as a six-minute average.
- Compliance Method:

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If required, compliance shall be determined according to test Method 9 as set forth in the "Appendix on Test Methods" in 40 CFR Part 60 "Standards of Performance for New Stationary Sources."

- g. Emission Limitation:  
The regenerative thermal oxidizer shall meet a minimum control efficiency of 95% for VOC emissions.

Applicable Compliance Method:  
Compliance with the control efficiency requirements above shall be demonstrated based on the results of emission testing conducted in accordance with the methods outlined in Section V.1 of this permit.

**VI. Miscellaneous Requirements**

None

**B. State Only Enforceable Section**

**I. 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.

**Operations, Property, and/or Equipment -(P473) - precision sand mold shakeout with duct burner**

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05	Limit(s)

**2. Additional Terms and Conditions**

2.a None

**II. Operational Restrictions**

None

**III. Monitoring and/or Recordkeeping Requirements**

None

**IV. Reporting Requirements**

None

**V. Testing Requirements**

None

**VI. Miscellaneous Requirements**

None

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**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. State and Federally Enforceable Section**

**I. 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.

**Operations, Property, and/or Equipment -(P474) - precision sand casting cooling tunnel**

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC 3745-31-05(C) OAC rule 3745-31-10 through 20	Volatile organic compound (VOC) emissions shall not exceed 0.75 pound per ton (lb/ton) of aluminum and 10.04 tons per year(tpy), based upon a rolling, 12-month summation of the monthly emissions.  See A.I.2.b and A.I.2.d.
OAC rule 3745-31-05(C)	Particulate matter emissions (PE) shall not exceed 0.24 lb/ton of aluminum and 3.21 tpy, based upon a rolling, 12-month summation of the monthly emissions.  Particulate matter emissions less than or equal to 10 microns in size (PM10) shall not exceed 0.48 lb/ton of aluminum and 6.43 tpy, based upon a rolling, 12-month summation of the monthly emissions.  Visible PE shall not exceed 5% opacity, as a six-minute average.  See A.I.2.c and A.I.2.d.
OAC rule 3745-17-11(B) OAC rule 3745-17-07(A)	The emission limitations specified by these rules are less stringent than the emission limitations established pursuant to OAC rule 3745-31-05(C).

**2. Additional Terms and Conditions**

- 2.a This emissions units includes one casting cooling tunnel. The abatement system includes one baghouse and exhausts to a single stack. The allowable emissions limitation includes the emissions generated from two chill cleaning stations.
- 2.b Based on the "Prevention of Significant Deterioration" (PSD) analysis conducted to ensure the application of "Best Available Control Technology" (BACT), it has been determined that no control technologies for VOC were cost effective.
- 2.c The Best Available Technology (BAT) requirements under OAC rule

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3745-31-05(A)(3) do not apply to PE and PM10 from this air contaminant source since the potential to emit for each is less than ten tons per year taking into account the federally enforceable restriction on aluminum usage and the use of a baghouse.

- 2.d** The rolling, 12-month emission limitations are federally enforceable limitations established for the purpose of reducing emissions. The emission limitations are based on the federally enforceable limitation on aluminum usage (See A.II.1).

**II. Operational Restrictions**

1. The maximum annual aluminum usage for this emissions units shall not exceed 26,775 tons, based upon a rolling, 12-month summation of the monthly quantities of aluminum used.

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

<u>Month(s)</u>	<u>Maximum Allowable Cumulative Aluminum Usage (tons)</u>
1	2,680
1-2	5,360
1-3	8,040
1-4	10,720
1-5	13,400
1-6	16,080
1-7	18,760
1-8	21,440
1-9	24,120
1-10	25,013
1-11	25,907
1-12	26,775

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual aluminum usage restriction shall be based upon a rolling, 12-month summation of the monthly quantity of aluminum poured in emissions unit P470 and P471 combined.

2. The permittee shall operate the baghouse at all times when this emissions unit is in operation.

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

1. The permittee shall collect and record the following information each month for this emissions unit:

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- a. the amount of aluminum processed, in tons;
- b. for the first 12 months of operation following the issuance of this permit, the cumulative quantity of aluminum processed, in tons; and
- c. after the first 12 months of operation following the issuance of this permit, the rolling, 12-month summation of the monthly amount of aluminum processed.

\*The amount of aluminum processed through this emissions unit is equivalent to the amount of aluminum poured in emissions units P470 and P471. The monitoring and record keeping associated with the aluminum processed in emissions unit P470 and P471 can be used to fulfill the requirements in this section.

2. The permittee shall collect and record the following each month for this emissions unit:
  - a. the calculated emission rate for VOC, in tons (A.III.1.a x 0.75 pounds of VOC/ton of aluminum x ton/2000 pounds );
  - b. the calculated emission rate for PE, in tons, (A.III.1.a x 0.24 pound of PE/ton of aluminum x ton/2000 pounds);
  - c. the calculated emission rate for PM10, in tons, (A.III.1.a x 0.48 pound of PM10/ton of aluminum x ton/2000 pounds);
  - d. the annual VOC emission rate, in tons, based upon the rolling, 12-month summation of the monthly emission rates;
  - e. the annual PE emission rate, in tons, based upon the rolling, 12-month summation of the monthly emission rates; and
  - f. the annual PM10 emission rate, in tons, based upon the rolling, 12-month summation of the monthly emission rates.
3. The permittee shall perform weekly\* checks when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, 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 date and time of the visible emission observation;
  - b. the identification of the stack observed;
  - c. the color of the emissions;
  - d. the total duration of any visible emission observation; and
  - e. the corrective actions, if any, taken to eliminate the visible emissions.

\*once during each normal calendar week

4. The permittee shall maintain records documenting any time periods when the emissions unit was in operation and the baghouse was not operating.

#### IV. Reporting Requirements

**Issued: To be entered upon final issuance**

1. The permittee shall submit quarterly deviation (excursion) reports, which identify all exceedances of the following:
  - a. for the first 12 calendar months of operation following the issuance of this permit, the maximum allowable cumulative aluminum usage restriction;
  - b. after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month aluminum usage restriction, and
  - c. the rolling, 12-month emission limitations for PE, PM10 & VOC.

These quarterly deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) by January 31 and July 31 of each year and shall cover the previous 6-month period.
3. The permittee shall submit deviation (excursion) reports that identify any time periods when the emissions unit was in operation and the baghouse was not operating. Each report shall be submitted within 30 days after the deviation occurs.

**V. 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 180 days after achieving the maximum production rate at which this emissions units will be operated, but no later than June 30, 2010.
  - b. The emission testing shall be conducted to demonstrate compliance with the following:
    - i. for VOC - 0.75 lb/ton of aluminum;
    - ii. for PE - 0.24 lb/ton of aluminum; and
    - iii. for PM10 - 0.48 lb/ton of aluminum.
  - c. The following test methods shall be employed to demonstrate compliance with the above emission limitations:
    - i. for total VOC, Methods 1-4 and 18, 25 or 25A of 40 CFR Part 60, Appendix A. Appropriate methods shall be used in conjunction with the

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- test methods and procedures specified in Methods 18, 25, or 25A of 40 CFR Part 60, Appendix A for determining total VOC mass emissions.
- ii. for PE, Methods 1-5 of 40 CFR Part 60, Appendix A.
- iii. for PM10, Methods 201 and 202 of 40 CFR Part 51, Appendix M

Alternative U.S. EPA-approved test methods may be used with prior approval from the Ohio EPA, NWDO. The test method(s) which must be employed to demonstrate compliance with the control efficiencies are specified below.

- d. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.
- e. The test(s) shall be conducted while this emissions units is operating at its maximum capacities, unless otherwise specified or approved by the Ohio EPA, NWDO. The maximum capacity for this emissions units is 13,125 tons of aluminum per hour (based 75 molds per hour on 175 tons of aluminum per mold).
- f. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA, NWDO. 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, NWDO's refusal to accept the results of the emission test(s).

Personnel from the Ohio EPA, NWDO 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 of the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA, NWDO 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 Ohio EPA, NWDO.

- 2. Compliance with the emission limitations specified in Section A.1 of the terms and conditions of this permit shall be determined in accordance with the following method(s):
  - a. Emission Limitation:  
The maximum annual amount of aluminum used shall not exceed 26,775 tons per rolling, 12-month period.  
  
Compliance Method:  
Compliance with the annual emission limitation shall be demonstrated by the record keeping requirements specified in Section III.1.
  - b. Emission Limitations:

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VOC emissions shall not exceed 10.04 tpy, based upon a rolling, 12-month summation of the monthly emissions.

PE shall not exceed 3.21 tpy, based upon a rolling, 12-month summation of the monthly emissions.

PM10 emissions shall not exceed 6.43 tpy, based upon a rolling, 12-month summation of the monthly emissions.

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Compliance Method:

Compliance with the annual emission limitations shall be demonstrated by the record keeping requirements specified in Section III.2.

c. Emission Limitation:

VOC emissions shall not exceed 0.75 lb/ton of aluminum

Compliance Method:

Compliance with the lb/ton emission limitation shall be demonstrated based on the results of the emission testing conducted in accordance with Methods 1-4 and 18, 25 or 25A of 40 CFR Part 60, Appendix A.

d. Emission Limitation:

PM10 shall not exceed 0.48 lbs/ton of aluminum

Compliance Method:

Compliance with the lb/ton emission limitation shall be demonstrated based on the results of the emission testing conducted in accordance with Methods 201 and 202 , of 40 CFR Part 51, Appendix M.

e. Emission Limitation:

PE shall not exceed 0.24 lbs/ton of aluminum

Compliance Method:

Compliance with the lb/ton emission limitation shall be demonstrated based on the results of the emission testing conducted in accordance with Methods 1-5, of 40 CFR Part 60, Appendix A.

f. Emission Limitation:

Visible PE from the baghouse stack(s) shall not exceed 5% opacity.

Applicable Compliance Method:

If required, compliance with the visible emission limitation shall be demonstrated in accordance with Test Method 9 as set forth in "Appendix on Test Methods" in 40 CFR, Part 60 ("Standards of Performance for New Stationary Sources").

**VI. Miscellaneous Requirements**

None

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**B. State Only Enforceable Section**

**I. 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.

**Operations, Property, and/or Equipment -(P474) - precision sand casting cooling tunnel**

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
None	None

**2. Additional Terms and Conditions**

2.a None

**II. Operational Restrictions**

None

**III. Monitoring and/or Recordkeeping Requirements**

None

**IV. Reporting Requirements**

None

**V. Testing Requirements**

None

**VI. Miscellaneous Requirements**

None

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**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. State and Federally Enforceable Section**

**I. 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.

**Operations, Property, and/or Equipment -(P475) - hershel hammer and parallel swing masters**

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05(C) OAC rule 3745-31-10 through 20	Volatile organic compound (VOC) emissions shall not exceed 0.38 pound per ton (lb/ton) of aluminum and 5.09 tons per year(tpy), based upon a rolling, 12-month summation of the monthly emissions.  See A.I.2.b, A.I.2.d, and A.I.2.f.
OAC rule 3745-31-05(C)	Particulate matter emissions less than or equal to 10 microns in size (PM10) shall not exceed 0.34 lb/hour (hr) and 0.69tpy, based upon a rolling, 12-month summation of the monthly emissions.  Visible particulate matter emissions (PE) shall not exceed 5% opacity, as a six-minute average.  See A.I.2.c, A.I.2.d and A.I.2.e.
OAC rule 3745-17-07(A) OAC rule 3745-17-11(B)	The emission limitation specified by these rules are less stringent than the emission limitations established pursuant to OAC rule 3745-31-05(C).

**2. Additional Terms and Conditions**

- 2.a This emissions units includes one hershel hammer and two swing masters controlled with one baghouse and exhausts to one stack.
- 2.b Based on the "Prevention of Significant Deterioration" (PSD) analysis conducted to ensure the application of "Best Available Control Technology" (BACT), it has been determined that no control technologies for VOC were cost effective.
- 2.c The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to PM10 from this air contaminant source since the potential to emit is less than ten tons per year taking into account the federally enforceable restriction on aluminum usage and the use of a baghouse.
- 2.d The rolling, 12-month emission limitations are federally enforceable limitations

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established for the purpose of reducing emissions. The emission limitations are based on the federally enforceable limitation on aluminum usage (See A.II.1).

- 2.e** All particulate matter emissions are PM10.
- 2.f** The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to VOC from this air contaminant source since the uncontrolled potential to emit is less than ten tons per year taking into account the federally enforceable restriction on aluminum usage.

## II. Operational Restrictions

1. The maximum annual aluminum usage for this emissions units shall not exceed 26,775 tons, based upon a rolling, 12-month summation of the monthly quantities of aluminum used.

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

Month(s)	<u>Maximum Allowable Cumulative Aluminum Usage (tons)</u>
1	2,680
1-2	5,360
1-3	8,040
1-4	10,720
1-5	13,400
1-6	16,080
1-7	18,760
1-8	21,440
1-9	24,120
1-10	25,013
1-11	25,907
1-12	26,775

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual aluminum usage restriction shall be based upon a rolling, 12-month summation of the monthly quantity of aluminum poured in emissions unit P470 and P471 combined.

2. The permittee shall operate the baghouse(s) at all times when this emissions unit is in operation.

## III. Monitoring and/or Record keeping Requirements

1. The permittee shall collect and record the following information each month for this emissions unit:
- the amount of aluminum processed, in tons;
  - for the first 12 months of operation following the issuance of this permit, the

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cumulative quantity of aluminum processed, in tons; and

- c. after the first 12 months of operation following the issuance of this permit, the rolling, 12-month summation of the monthly amount of aluminum processed.

\*The amount of aluminum processed through this emissions unit is equivalent to the amount of aluminum poured in emissions units P470 and P471. The monitoring and record keeping associated with the aluminum processed in emissions unit P470 and P471 can be used to fulfill the requirements in this section.

- 2. The permittee shall collect and record the following each month for this emissions unit:
  - a. the calculated emission rate for VOC, in tons (A.III.1.a x 0.38 pound of VOC/ton of aluminum x ton/2000 pounds);
  - b. the calculated emission rate for PM10, in tons, (A.III.1.a x 1.03 pound of PM10/ton of aluminum x 0.05 x ton/2000 pounds);
  - c. the annual VOC emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates; and
  - d. the annual PM10 emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.
- 3. The permittee shall perform weekly\* checks when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, 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 date and time of the visible emission observation;
  - b. the identification of the stack observed;
  - c. the color of the emissions;
  - d. the total duration of any visible emission observation; and
  - e. the corrective actions, if any, taken to eliminate the visible emissions.

\*once during each normal calendar week

- 4. The permittee shall maintain records documenting any time periods when the emissions unit was in operation and the baghouse(s) was(were) not operating.

**IV. Reporting Requirements**

- 1. The permittee shall submit quarterly deviation (excursion) reports, which identify all exceedances of the following:
  - a. for the first 12 calendar months of operation following the issuance of this permit,

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the maximum allowable cumulative aluminum usage restriction;

- b. after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month aluminum usage restriction, and
- c. the rolling, 12-month emission limitations for PM10 & VOC.

These quarterly deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

- 2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) by January 31 and July 31 of each year and shall cover the previous 6-month period.
- 3. The permittee shall submit deviation (excursion) reports that identify any time periods when the emissions unit was in operation and the baghouse(s) was(were) not operating. Each report shall be submitted within 30 days after the deviation occurs.

## V. 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 180 days after achieving the maximum production rate at which this emissions units will be operated, but no later than June 30, 2010.
  - b. The emission testing shall be conducted to demonstrate compliance with the following:
    - i. for VOC, 0.38 lb/ton of aluminum.
  - c. The following test methods shall be employed to demonstrate compliance with the above emission limitations:
    - i. for total VOC, Methods 1-4 and 18, 25 or 25A of 40 CFR Part 60, Appendix A. Appropriate methods shall be used in conjunction with the test methods and procedures specified in Methods 18, 25, or 25A of 40 CFR Part 60, Appendix A for determining total VOC mass emissions.

Alternative U.S. EPA-approved test methods may be used with prior approval from the Ohio EPA, NWDO. The test method(s) which must be employed to demonstrate compliance with the control efficiencies are specified below.

- d. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.
- e. The test(s) shall be conducted while this emissions units is operating at its

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maximum capacities, unless otherwise specified or approved by the Ohio EPA, NWDO. The maximum capacity for this emissions units is 13,125 tons of aluminum per hour (based 75 molds per hour on 175 tons of aluminum per mold).

- f. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA, NWDO. 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, NWDO's refusal to accept the results of the emission test(s).

Personnel from the Ohio EPA, NWDO 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 of the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA, NWDO 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 Ohio EPA, NWDO.

2. Compliance with the emission limitations specified in Section A.1 of the terms and conditions of this permit shall be determined in accordance with the following method(s):

- a. Emission Limitation:  
The maximum annual aluminum usage shall not exceed 26,775 tons per rolling, 12-month period.

Compliance Method:  
Compliance with the annual emission limitation shall be demonstrated by the record keeping requirements specified in Section A.III.1.

- b. Emission Limitation:  
VOC emissions shall not exceed 0.38 lb/ton of aluminum and 5.09tpy, based upon a rolling, 12-month summation of the monthly emissions.

Compliance Method:  
Compliance with the hourly emission limitation shall be demonstrated based on the results of the emission testing conducted in accordance with Methods 1-4, 18, 25 or 25A of 40 CFR Part 60, Appendix A.

Compliance with the annual emission limitation shall be demonstrated by the

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record keeping requirements specified in Section A.III.2.

- c. Emission Limitation:  
PM10 shall not exceed 0.34 lb/hr and 0.69 tpy, based on a rolling, 12-month summation of the monthly emissions.

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Compliance Method:

The hourly emission rate was established by multiplying the maximum hourly metal throughput of 6.56 tons per hour by the company-supplied emission factor of 1.03 lb PE/ton of aluminum x 0.05 (95% control efficiency). If required, compliance with the hourly emission limitation shall be demonstrated based on the results of the emission testing conducted in accordance with Methods 201 and 202 of 40 CFR Part 51, Appendix M.

Compliance with the annual emission limitation shall be demonstrated by the record keeping requirements specified in Section A.III.2.

d. Emission Limitation:

Visible PE from the baghouse stack(s) shall not exceed 5% opacity.

Applicable Compliance Method:

If required, compliance with the visible emission limitation shall be demonstrated in accordance with Test Method 9 as set forth in "Appendix on Test Methods" in 40 CFR, Part 60 ("Standards of Performance for New Stationary Sources").

**VI. Miscellaneous Requirements**

None

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**B. State Only Enforceable Section**

**I. 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.

**Operations, Property, and/or Equipment - (P475) - hershel hammer and parallel swing masters**

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
None	None

**2. Additional Terms and Conditions**

2.a None

**II. Operational Restrictions**

None

**III. Monitoring and/or Recordkeeping Requirements**

None

**IV. Reporting Requirements**

None

**V. Testing Requirements**

None

**VI. Miscellaneous Requirements**

None

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**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. State and Federally Enforceable Section**

**I. 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.

**Operations, Property, and/or Equipment -(P476) - shot blast (precision sand casting final cleaning)**

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05(C)	<p>Particulate matter emissions less than or equal to 10 microns in size (PM10) shall not exceed 0.16 pound per hour (lb/hr) and 0.32 ton per year (tpy), based upon a rolling, 12-month summation of the monthly emissions.</p> <p>Visible PE shall not exceed 5% opacity, as a six-minute average.</p> <p>See A.I.2.b, A.I.2.c and A.I.2.d.</p>
OAC rule 3745-17-07(A) OAC rule 3745-17-11(B)	The emission limitations specified by these rules are less stringent than the emission limitations established pursuant to OAC rule 3745-31-05(C).

**2. Additional Terms and Conditions**

- 2.a This emissions unit includes one shot blast cabinet controlled with one shared baghouse and is exhausted to one stack. The baghouse is shared with emissions unit P477 (degate saw).
- 2.b The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to PM10 from this air contaminant source since the potential to emit is less than ten tons per year taking into account the federally enforceable restriction on aluminum usage and the use of a baghouse.
- 2.c The rolling, 12-month emission limitation is a federally enforceable limitation established for the purpose of reducing emissions. The emission limitation is based on the federally enforceable limitation on aluminum usage (See A.II.1).
- 2.d All particulate matter emissions are PM10.

**II. Operational Restrictions**

1. The maximum annual aluminum usage for this emissions unit shall not exceed 26,775

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tons, based upon a rolling, 12-month summation of the monthly quantities of aluminum used.

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

Month(s)	Maximum Allowable Cumulative Aluminum Usage (tons)
1	2,680
1-2	5,360
1-3	8,040
1-4	10,720
1-5	13,400
1-6	16,080
1-7	18,760
1-8	21,440
1-9	24,120
1-10	25,013
1-11	25,907
1-12	26,775

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual aluminum usage restriction shall be based upon a rolling, 12-month summation of the monthly quantity of aluminum poured in emissions unit P470 and P471 combined.

2. The permittee shall operate the baghouse(s) at all times when this emissions unit is in operation.

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

1. The permittee shall collect and record the following information each month for this emissions unit:
  - a. the amount of aluminum processed, in tons;
  - b. for the first 12 months of operation following the issuance of this permit, the cumulative quantity of aluminum processed, in tons; and
  - c. after the first 12 months of operation following the issuance of this permit, the rolling, 12-month summation of the monthly amount of aluminum processed.

\*The amount of aluminum processed through this emissions unit is equivalent to the amount of aluminum poured in emissions units P470 and P471. The monitoring and record keeping associated with the aluminum processed in emissions unit P470 and P471 can be used to fulfill the requirements in this section.

2. The permittee shall collect and record the following each month for this emissions unit:
  - a. the calculated emission rate for PM10, in tons, (A.III.1.a x 0.48 pound of

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PM10/ton of aluminum x ton/2000 lbs x 0.05 (95% control efficiency)); and

- b. the annual PM10 emission rate, in tons, based upon the rolling, 12-month summation of monthly emission rates.
  3. The permittee shall perform weekly\* checks when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, 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 date and time of the visible emission observation;
    - b. the identification of the stack observed;
    - c. the color of the emissions;
    - d. the total duration of any visible emission observation; and
    - e. the corrective actions, if any, taken to eliminate the visible emissions.
- \* once during each normal operating calendar week
4. The permittee shall maintain records documenting any time periods when the emissions unit was in operation and the baghouse was not operating.

**IV. Reporting Requirements**

1. The permittee shall submit quarterly deviation (excursion) reports, which identify all exceedances of the following:
  - a. for the first 12 calendar months of operation following the issuance of this permit, the maximum allowable cumulative aluminum usage restriction;
  - b. after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month aluminum usage restriction, and
  - c. the rolling, 12-month emission limitations for PM10 .

These quarterly deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) by January 31 and July 31 of each year and shall cover the previous 6-month period.
3. The permittee shall submit deviation (excursion) reports that identify any time periods when the emissions unit was in operation and the baghouse(s) was(were) not

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**DTI Application: 03 17252**

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Emissions Unit ID: P476

operating. Each report shall be submitted within 30 days after the deviation occurs.

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**V. Testing Requirements**

1. Compliance with the emission limitations specified in Section A.1 of the terms and conditions of this permit shall be determined in accordance with the following method(s):

- a. Emission Limitation:

- The maximum annual aluminum usage shall not exceed 26,775 tons per rolling, 12-month period.

- Compliance Method:

- Compliance with the annual emission limitation shall be demonstrated by the record keeping requirements specified in Section A.III.1.

- b. Emission Limitations:

- PM10 shall not exceed 0.16 lb/hr and 0.32 tpy, based upon a rolling, 12-month summation of the monthly emissions.

- Compliance Method:

- The hourly emission rate was established by multiplying the maximum hourly metal throughput of 6.56 tons per hour by the company supplied emission factor of 0.480 lb PE/ton of aluminum x 0.05 (95% control efficiency). If required, compliance with the hourly emission limitation shall be demonstrated based on the results of the emission testing conducted in accordance with Methods 201 and 202 of 40 CFR Part 51, Appendix M.

Compliance with the annual emission limitation shall be demonstrated by the record keeping requirements specified in Section A.III.2.

- c. Emission Limitation:

- Visible PE from the baghouse stack(s) shall not exceed 5% opacity.

- Applicable Compliance Method:

- If required, compliance with the visible emission limitation shall be demonstrated in accordance with Test Method 9 as set forth in "Appendix on Test Methods" in 40 CFR, Part 60 ("Standards of Performance for New Stationary Sources").

**VI. Miscellaneous Requirements**

None

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**B. State Only Enforceable Section**

**I. 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.

**Operations, Property, and/or Equipment -(P476) - shot blast (precision sand casting final cleaning)**

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
None	None

**2. Additional Terms and Conditions**

2.a None

**II. Operational Restrictions**

None

**III. Monitoring and/or Recordkeeping Requirements**

None

**IV. Reporting Requirements**

None

**V. Testing Requirements**

None

**VI. Miscellaneous Requirements**

None

**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. State and Federally Enforceable Section**

**I. 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.

**Operations, Property, and/or Equipment -(P477) - precision sand degate saw**

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05(C) OAC rule 3745-31-10 through 20	Volatile organic compound (VOC) emissions shall not exceed 0.020 pound per hour (lb/hr) and 0.05 tons per year (tpy), based upon a rolling, 12-month summation of the monthly emissions.  See A.I.2.b, A.I.2.c, and A.I.2.d.
OAC rule 3745-31-05(C)	Particulate emissions (PE) shall not exceed 0.07 lb/hr and 0.14, based upon a rolling, 12-month summation of the monthly emissions.  Particulate matter emissions less than or equal to 10 microns in size (PM10) shall not exceed 0.13 lb/hr and 0.27, based upon a rolling, 12-month summation of the monthly emissions.  Visible PE shall not exceed 5% opacity, as a six-minute average.  See A.I.2.c, and A.I.2.e.
OAC rule 3745-17-07(A) OAC rule 3745-17-11(B)	The emission limitations specified by these rules are less stringent than the emission limitations established pursuant to OAC rule 3745-31-05(C).

**2. Additional Terms and Conditions**

- 2.a This emissions unit includes one degate saw controlled with a shared baghouse and is exhausted to one stack. The baghouse is shared with emissions unit P476 (shot blast - finished casting final cleaning).
- 2.b Based on the "Prevention of Significant Deterioration" (PSD) analysis conducted to ensure the application of "Best Available Control Technology" (BACT), it has been determined that no control technologies for VOC were cost effective.
- 2.c The rolling, 12-month emission limitations are federally enforceable limitations established for the purpose of reducing emissions. The emission limitations are based on the federally enforceable restriction on aluminum usage (See A.II.1).
- 2.d The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the VOC from this air contaminant source since the potential to emit is less than ten tons per year taking into account the federally enforceable restriction on aluminum usage.

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- 2.e** The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to PE and PM10 from this air contaminant source since the potential to emit for each is less than ten tons per year taking into account the federally enforceable restriction on aluminum usage and the use of a baghouse.

**II. Operational Restrictions**

1. The maximum annual aluminum usage for this emissions unit shall not exceed 26,775 tons, based upon a rolling, 12-month summation of the monthly quantities of aluminum used.

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

<u>Month(s)</u>	<u>Maximum Allowable Cumulative Aluminum Usage (tons)</u>
1	2,680
1-2	5,360
1-3	8,040
1-4	10,720
1-5	13,400
1-6	16,080
1-7	18,760
1-8	21,440
1-9	24,120
1-10	25,013
1-11	25,907
1-12	26,775

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual aluminum usage restriction shall be based upon a rolling, 12-month summation of the monthly quantity of aluminum poured in emissions unit P470 and P471 combined.

2. The permittee shall operate the baghouse(s) at all times when this emissions unit is in operation.

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

1. The permittee shall collect and record the following information each month for this emissions unit:
  - a. the amount of aluminum processed, in tons;
  - b. for the first 12 months of operation following the issuance of this permit, the cumulative quantity of aluminum processed, in tons; and
  - c. after the first 12 months of operation following the issuance of this permit, the rolling, 12-month summation of the monthly amount of aluminum processed.

\*The amount of aluminum processed through this emissions unit is equivalent to the amount of aluminum poured in emissions units P470 and P471. The monitoring and record keeping associated with the aluminum processed in emissions unit P470 and P471 can be used to fulfill the requirements in this section.
2. The permittee shall collect and record the following each month for this emissions unit:
  - a. the calculated emission rate for PE, in tons, (A.III.1.a x 0.21 pound of PE/ton of aluminum x 0.05 x (1 ton/2000 pounds));
  - b. the calculated emission rate for PM10, in tons, (A.III.1.a x 0.41 pound of PE/ton of aluminum x 0.05 x 1/2000 tons x (1 ton/2000 pounds));
  - c. the calculated emission rate for VOC, in tons, (A.III.1.a x 0.0037 lb VOC/ton of aluminum x (1 ton/2000 pounds));
  - d. the annual PE, PM10 and VOC emission rate, in tons, based upon the rolling, 12-month summation of the monthly emission rates.
3. The permittee shall perform weekly\* checks when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, 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 date and time of the visible emission observation;
  - b. the identification of the stack observed;
  - c. the color of the emissions;
  - d. the total duration of any visible emission observation; and
  - e. the corrective actions, if any, taken to eliminate the visible emissions.

\*once during each normal calendar week

4. The permittee shall maintain records documenting any time periods when the emissions unit was in operation and the baghouse was not operating.

**IV. Reporting Requirements**

1. The permittee shall submit semiannual written reports that (a) identify all days during

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which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) by January 31 and July 31 of each year and shall cover the previous 6-month period.

2. The permittee shall submit deviation (excursion) reports that identify any time periods when the emissions unit was in operation and the baghouse(s) was(were) not operating. Each report shall be submitted within 30 days after the deviation occurs.

**V. Testing Requirements**

1. Compliance with the emission limitations specified in Section A.1 of the terms and conditions of this permit shall be determined in accordance with the following method(s):
  - a. Emission Limitation:  
The maximum annual aluminum usage shall not exceed 26,775 tons per rolling, 12-month period.  
  
Compliance Method:  
Compliance with the annual emission limitation shall be demonstrated by the record keeping requirements specified in Section A.III.1.
  - b. Emission Limitations:  
PE shall not exceed 0.07 lb/hr and 0.14 tpy, based upon a rolling, 12-month summation of the monthly emissions.  
  
Compliance Method:  
The hourly emission rate was established by multiplying the maximum hourly metal throughput of 6.56 tons per hour by the company-supplied emission factor of 0.210 lb PE/ton of aluminum x 0.05 (95% control efficiency). If required, compliance shall be demonstrated based on the results of emission testing conducted in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.
  - c. Emission Limitations:  
PM10 shall not exceed 0.13 lb/hr and 0.27 tpy, based upon a rolling, 12-month summation of the monthly emissions.  
  
Compliance Method:  
The hourly emission rate was established by multiplying the maximum hourly aluminum usage rate of 6.56 tons per hour by the company-supplied emission factor of 0.41 lb/ton of metal by and apply a 95% control efficiency. If required, compliance shall be demonstrated based on the results of emission testing conducted in accordance with Methods 201 and 202 of 40 CFR Part 51, Appendix M.

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- d. Emission Limitations:  
VOC shall not exceed 0.02 lb/hr and 0.05 tpy, based upon a rolling, 12-month summation of the monthly emissions.
- Compliance Method:  
The hourly emission rate was established by multiplying the maximum hourly aluminum usage rate of 6.56 tons per hour by the company-supplied emission factor of 0.0037 lb/ton of aluminum. If required, compliance shall be demonstrated based on the results of emission testing conducted in accordance with Methods 1-4 and 18, 25 or 25A of 40 CFR Part 60, Appendix A.
- Compliance with the annual emission limitation shall be demonstrated by the record keeping requirements specified in Section A.III.2.
- e. Emission Limitation:  
Visible PE from the baghouse stack(s) shall not exceed 5% opacity.
- Applicable Compliance Method:  
If required, compliance with the visible emission limitation shall be demonstrated in accordance with Test Method 9 as set forth in "Appendix on Test Methods" in 40 CFR, Part 60 ("Standards of Performance for New Stationary Sources").

## VI. Miscellaneous Requirements

None

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**B. State Only Enforceable Section**

**I. 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.

**Operations, Property, and/or Equipment - (P477) - precision sand degate saw**

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
None	None

**2. Additional Terms and Conditions**

2.a None

**II. Operational Restrictions**

None

**III. Monitoring and/or Recordkeeping Requirements**

None

**IV. Reporting Requirements**

None

**V. Testing Requirements**

None

**VI. Miscellaneous Requirements**

None

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**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. State and Federally Enforceable Section**

**I. 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.

**Operations, Property, and/or Equipment -(P478) - waste sand feeder and core breaker**

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05(C) OAC rule 3745-31-10 through 20	Volatile organic compound (VOC) emissions shall not exceed 0.10 pound (lb) per ton of sand and 6.70 tons per year(tpy), based upon a rolling, 12-month summation of the monthly emissions.  See A.I.2.b, A.I.2.c, and A.I.2.d.
OAC rule 3745-31-05(C)	Particulate matter emissions (PE) shall not exceed 0.048 lb/ton of sand and 3.21 tpy, based upon a rolling, 12-month summation of the monthly emissions.  Particulate matter emissions less than or equal to 10 microns in size (PM10) shall not exceed 0.096 lb/ton of sand and 6.43 tpy, based upon a rolling, 12-month summation of the monthly emissions.  Visible PE shall not exceed 5% opacity, as a six-minute average.  See A.I.2.c and A.I.2.e.
OAC rule 3745-17-11(B) OAC rule 3745-17-07(A)	The emission limitations specified by these rules are less stringent than the emission limitations established pursuant to OAC rule 3745-31-05(C).
OAC rule 3745-21-07(G)	See A.I.2.f.

**2. Additional Terms and Conditions**

- 2.a This emissions unit includes one core breaker. The abatement system includes one baghouse and exhausts to a single stack.
- 2.b Based on the "Prevention of Significant Deterioration" (PSD) analysis is conducted to ensure the application of "Best Available Control Technology" (BACT), it has been determined that no control technologies for VOC were cost effective.

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- 2.c The rolling, 12-month limitations are federally enforceable limitations established for the purpose of reducing emissions. The emission limitations are based on the federally enforceable restriction on sand usage (See A.II.1).
- 2.d The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to VOC from this air contaminant source since the uncontrolled potential to emit is less than ten tons per year taking into account the federally enforceable restriction on sand usage.
- 2.e The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to PE and PM10 from this air contaminant source since the potential to emit for each is less than ten tons per year taking into account the federally enforceable restriction on sand usage and the use of a baghouse.
- 2.f This emissions unit is not subject to the requirements in OAC rule 3745-21-07(G) because no liquid organic material is employed in this emissions unit. "Liquid organic material" is defined in OAC rule 3745-21-01.

**II. Operational Restrictions**

- 1. The maximum annual sand processed in this emissions units shall not exceed 133,875 tons, based upon a rolling, 12-month summation.

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

<u>Month(s)</u>	<u>Maximum Allowable Cumulative Amount of Sand Processed (tons)</u>
1	13,400
1-2	26,800
1-3	40,200
1-4	53,600
1-5	67,000
1-6	80,400
1-7	93,800
1-8	107,200
1-9	120,600
1-10	125,067
1-11	129,534
1-12	133,875

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

- 2. The permittee shall operate the baghouse at all times when this emissions unit is in operation.

**III. Monitoring and/or Recordkeeping Requirements**

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1. The permittee shall collect and record the following information each month for this emissions unit:
  - a. the quantity of sand processed, in tons;
  - b. for the first 12 months of operation following the issuance of this permit, the cumulative quantity of sand processed, in tons; and
  - c. after the first 12 months operation, the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly sand processed.

\*The amount of sand processed through this emissions unit is equivalent to the amount of sand received in emissions unit P906. The monitoring and record keeping associated with the sand received in emissions unit P906 can be used to fulfill the requirements in this section.

2. The permittee collect and record the following each month for this emissions unit:
  - a. the calculated emission rate for VOC, in tons (A.III.1.a x 0.10 lb of VOC/ton of sand x ton/2000 pounds );
  - b. the calculated emission rate for PE, in tons, (A.III.1.a x 0.048 lb of PE/ton of sand x ton/2000 pounds );
  - c. the calculated emission rate for PM10, in tons, (A.III.1.a x 0.096 lb of PM10/ton of sand x ton/2000 pounds);
  - d. the annual VOC emission rate, in tons, based upon the rolling, 12-month summation of the monthly emission rates;
  - e. the annual PE rate, in tons, based upon the rolling, 12-month summation of the monthly emission rates; and
  - f. the annual PM10 emission rate, in tons, based upon the rolling, 12-month summation of the monthly emission rates.
3. The permittee shall perform weekly\* checks when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, 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 date and time of the visible emission observation;
  - b. the identification of the stack observed;
  - c. the color of the emissions;
  - d. the total duration of any visible emission observation; and

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e. the corrective actions, if any, taken to eliminate the visible emissions.

\*once during each normal calendar week

4. The permittee shall maintain records documenting any time periods when the emissions unit was in operation and the baghouse was not operating.

#### IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports, which identify all exceedances of the following:
- for the first 12 calendar months of operation following the issuance of this permit, the restriction on the maximum allowable cumulative quantity of sand processed;
  - after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month restriction on the quantity of sand processed; and
  - the rolling, 12-month emission limitations for PE, PM10 & VOC.

These quarterly deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) by January 31 and July 31 of each year and shall cover the previous 6-month period.
3. The permittee shall submit deviation (excursion) reports that identify any time periods when the emissions unit was in operation and the baghouse(s) was(were) not operating. Each report shall be submitted within 30 days after the deviation occurs.

#### V. Testing Requirements

1. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:
- The emission testing shall be conducted within 180 days after achieving the maximum production rate at which this emissions units will be operated, but no later than June 30, 2010.
  - The emission testing shall be conducted to demonstrate compliance with the following:
    - for VOC, 0.10 lb/ton of sand processed;
    - for PE, 0.048 lb/ton of sand processed; and
    - for PM10, 0.096 lb/ton of sand processed.
  - The following test methods shall be employed to demonstrate compliance with the above emission limitations:

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- i. for total VOC, Methods 1-4 and 18, 25 or 25A of 40 CFR Part 60, Appendix A. Appropriate methods shall be used in conjunction with the test methods and procedures specified in Methods 18, 25, or 25A of 40 CFR Part 60, Appendix A for determining total VOC mass emissions.
- ii. for PE, Methods 1-5 40 CFR Part 60, Appendix A.
- iii. for PM10, 40 CFR Part 51, Appendix M, Methods 201 and 202.

Alternative U.S. EPA-approved test methods may be used with prior approval from the Ohio EPA, NWDO. The test method(s) which must be employed to demonstrate compliance with the control efficiencies are specified below.

- d. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.
- e. The test(s) shall be conducted while this emissions units is operating at its maximum capacities, unless otherwise specified or approved by the Ohio EPA, NWDO. The maximum capacity for this emissions units is 52,500 pounds of sand per hour (based 75 molds per hour and 700 lbs of sand per mold).
- f. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA, NWDO. 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, NWDO's refusal to accept the results of the emission test(s).

Personnel from the Ohio EPA, NWDO 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 of the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA, NWDO 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 Ohio EPA, NWDO.

- 2. Compliance with the emission limitations specified in Section A.I.1 of the terms and conditions of this permit shall be determined in accordance with the following method(s):
  - a. Emission Limitation:  
The maximum annual sand usage shall not exceed 133,875 tons per rolling,

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12-month period.

Compliance Method:

Compliance with the annual emission limitation shall be demonstrated by the record keeping requirements specified in Section A.III.1.

b. Emission Limitations:

VOC emissions shall not exceed 6.70tpy, based upon a rolling, 12-month summation of the monthly emissions.

PE shall not exceed 3.21tpy, based upon a rolling, 12-month summation of the monthly emissions.

PM10 shall not exceed 6.43tpy, based upon a rolling, 12-month summation of the monthly emissions.

Compliance Method:

Compliance with the annual emission limitation shall be demonstrated by the record keeping requirements specified in Section A.III.2.

c. Emission Limitation:

VOC emissions shall not exceed 0.10 lb/ton of sand processed.

Compliance Method:

Compliance with the lb/ton emission limitation shall be demonstrated based on the results of the emission testing conducted in accordance with Methods 1-4, 18, 25 or 25A of 40 CFR Part 60, Appendix A.

d. Emission Limitation:

PE shall not exceed 0.048 lb/ton of sand processed

Compliance Method:

Compliance with the lb/ton emission limitation shall be demonstrated based on the results of the emission testing conducted in accordance with Methods 1 - 5 of 40 CFR Part 60, Appendix A.

e. Emission Limitation:

PM10 shall not exceed 0.096 lb/ton of sand

Compliance Method:

Compliance with the lb/ton emission limitation shall be demonstrated based on the results of the emission testing conducted in accordance with Methods 201 and 202 of 40 CFR Part 51, Appendix M.

f. Emission Limitation:

Visible PE from the baghouse stack(s) shall not exceed 5% opacity.

Applicable Compliance Method:

If required, compliance with the visible emission limitation shall be demonstrated in accordance with Test Method 9 as set forth in "Appendix on Test Methods" in 40 CFR, Part 60 ("Standards of Performance for New Stationary Sources").

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**VI. Miscellaneous Requirements**

None

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**B. State Only Enforceable Section**

**I. 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.

**Operations, Property, and/or Equipment - (P478) - waste sand feeder and core breaker**

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
None	None

**2. Additional Terms and Conditions**

2.a None

**II. Operational Restrictions**

None

**III. Monitoring and/or Recordkeeping Requirements**

None

**IV. Reporting Requirements**

None

**V. Testing Requirements**

None

**VI. Miscellaneous Requirements**

None

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**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. State and Federally Enforceable Section**

**I. 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.

**Operations, Property, and/or Equipment - (P479) - cast iron liners blast cabinet**

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05(C)	<p>Particulate matter emissions less than or equal to 10 microns in size (PM10) shall not exceed 0.23 pound per hour (lb/hr) and 0.58 ton per year (tpy), based upon a rolling, 12-month summation of the monthly emissions.</p> <p>Visible particulate matter emissions (PE) shall not exceed 5% opacity, as a six-minute average.</p> <p>See A.I.2.a through A.I.2.d.</p>
OAC rule 3745-17-07(A) OAC rule 3745-17-11(B)	The emission limitations specified by these rules are less stringent than the emission limitations established pursuant to OAC rule 3745-31-05(C).

**2. Additional Terms and Conditions**

- 2.a This emissions unit includes one blast cabinet. The abatement system includes one baghouse and exhausts to a single stack.
- 2.b The rolling, 12-month limitation is a federally enforceable limitation established for the purpose of reducing emissions. The emission limitation is based on the federally enforceable restriction on sand usage (See A.II.1).
- 2.c All PE is in the form of PM10.
- 2.d The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to PM10 from this air contaminant source since the potential to emit is less than ten tons per year taking into account the federally enforceable restriction on aluminum usage and the use of a baghouse.

**II. Operational Restrictions**

1. The permittee shall operate the baghouse(s) at all times when this emissions unit is in

operation.

2. The maximum annual aluminum usage for this emissions units shall not exceed 26,775 tons, based upon a rolling, 12-month summation of the monthly quantities of aluminum used.

To ensure federal enforceability during the first 12 calendar months of operation following the issuance of this permit, the permittee shall not exceed the aluminum usage levels specified in the following table, for this emissions unit:

Month(s)	Maximum Allowable Cumulative Aluminum Usage (tons)
1	2,680
1-2	5,360
1-3	8,040
1-4	10,720
1-5	13,400
1-6	16,080
1-7	18,760
1-8	21,440
1-9	24,120
1-10	25,013
1-11	25,907
1-12	26,775

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual aluminum usage restriction shall be based upon a rolling, 12-month summation of the monthly quantity of aluminum poured in emissions unit P470 and P471 combined.

## II. Monitoring and/or Record keeping Requirements

1. The permittee shall collect and record the following information each month for this emissions unit:
  - a. the amount of aluminum processed\*, in tons;
  - b. for the first 12 months of operation following the issuance of this permit, the cumulative quantity of aluminum processed, in tons; and
  - c. after the first 12 months of operation following the issuance of this permit, the rolling, 12-month summation of the monthly amount of aluminum processed.

\*The amount of aluminum processed through this emissions unit is equivalent to the amount of aluminum poured in emissions units P470 and P471. The monitoring and record keeping associated with the aluminum processed in emissions unit P470 and P471 can be used to fulfill the requirements in this section.

2. In addition to the above information, the permittee shall also record the following information each month for this emissions units:

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- a. the calculated emission rate for PM10, in tons, (A.III.1.a x 0.86 lb/ton of aluminum processed x ton/2000 lbs x 0.05); and
  - b. the annual PM10 emission rate, in tons, based upon the rolling, 12-month summation of the monthly emission rates.
3. The permittee shall perform weekly\* checks when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, 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 date and time of the visible emission observation;
  - b. the identification of the stack observed;
  - c. the color of the emissions;
  - d. the total duration of any visible emission observation; and
  - e. the corrective actions, if any, taken to eliminate the visible emissions.
- \*once during each normal calendar week
4. The permittee shall maintain records documenting any time periods when the emissions unit was in operation and the baghouse was not operating.

**IV. Reporting Requirements**

1. The permittee shall submit quarterly deviation (excursion) reports, which identify all exceedances of the following:
  - a. for the first 12 calendar months of operation following the issuance of this permit, the maximum allowable cumulative aluminum usage restriction;
  - b. after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month aluminum usage restriction, and
  - c. the rolling, 12-month emission limitations for PM10.

These quarterly deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

2. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) by January 31 and July 31 of each year and shall cover the previous 6-month period.
3. The permittee shall submit deviation (excursion) reports that identify any time periods

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when the emissions unit was in operation and the baghouse(s) was(were) not operating. Each report shall be submitted within 30 days after the deviation occurs.

## V. Testing Requirements

1. Compliance with the emission limitations specified in Section A.1 of the terms and conditions of this permit shall be determined in accordance with the following method(s):

- a. Emission Limitation:

The amount of aluminum poured shall not exceed 26,775 tons per rolling, 12-month period for this emissions unit.

Compliance Method:

Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.

- b. Emission Limitations:

PM10 emission shall not exceed 0.23 lb/hr and 0.58 tpy, based upon a rolling, 12-month summation of the monthly emissions.

Compliance Method:

The hourly emission rate was established by multiplying the company-established emission factor of 0.86 lb/ton of metal by the maximum hourly aluminum usage rate of 5.25 tons per hour and applying a 95% control efficiency. If required, compliance shall be demonstrated based on the results of emission testing conducted in accordance with Methods 201 and 202 of 40 CFR Part 51, Appendix M.

Compliance with the annual limitations shall be demonstrated by the record keeping requirements specified in section A.III.2.

- c. Emission Limitation:

Visible PE from the baghouse stack(s) shall not exceed 5% opacity.

Applicable Compliance Method:

If required, compliance with the visible emission limitation shall be demonstrated in accordance with Test Method 9 as set forth in "Appendix on Test Methods" in 40 CFR, Part 60 ("Standards of Performance for New Stationary Sources").

## VI. Miscellaneous Requirements

None

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**B. State Only Enforceable Section**

**I. 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.

**Operations, Property, and/or Equipment -(P479) - cast iron liners blast cabinet**

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
None	None

**2. Additional Terms and Conditions**

2.a None

**II. Operational Restrictions**

None

**III. Monitoring and/or Recordkeeping Requirements**

None

**IV. Reporting Requirements**

None

**V. Testing Requirements**

None

**VI. Miscellaneous Requirements**

None

**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. State and Federally Enforceable Section**

**I. 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.

**Operations, Property, and/or Equipment - (P801) - precision sand core storage and assembly area**

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05(C) OAC rule 3745-31-10 through 20	Volatile organic compound (VOC) emissions shall not exceed 26.51 tons per year (tpy), based upon a rolling, 12-month summation of the monthly emissions (See A.I.2.c).
OAC rule 3745-21-07(G)	See A.I.2.d.

**2. Additional Terms and Conditions**

- 2.a This emissions unit is an assembly and storage area where sand cores are assembled into molds.
- 2.b Based on the "Prevention of Significant Deterioration" (PSD) analysis is conducted to ensure the application of "Best Available Control Technology" (BACT), it has been determined that no control technologies for VOC were cost effective.
- 2.c The rolling, 12-month emission limitation is a federally enforceable restriction established for the purpose of reducing emissions. The emission limitation is based on the federally enforceable restriction on sand usage (See A.II.1).
- 2.d This emissions unit is not subject to the requirements in OAC rule 3745-21-07(G) because no liquid organic material is employed in this emissions unit. "Liquid organic material" is defined in OAC rule 3745-21-01.

**II. Operational Restrictions**

- 1. The maximum annual sand processed in this emissions unit shall not exceed 133,875 tons, based upon a rolling, 12-month summation.

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

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<u>Month(s)</u>	<u>Maximum Allowable Cumulative Amount of Sand Processed (tons)</u>
1	13,400
1-2	26,800
1-3	40,200
1-4	53,600
1-5	67,000
1-6	80,400
1-7	93,800
1-8	107,200
1-9	120,600
1-10	125,067
1-11	129,534
1-12	133,875

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

**III. Monitoring and/or Recordkeeping Requirements**

1. The permittee shall collect and record the following information each month for this emissions units:
  - a. the quantity of sand processed\*, in tons;
  - b. for the first 12 months of operation following the issuance of this permit, the cumulative quantity of sand processed, in tons; and
  - c. after the first 12 months operation, the quantity of sand processed, in tons, based on a rolling, 12-month summation of the monthly sand processed.

\*The amount of sand processed through this emissions unit is equivalent to the amount of sand received in emissions unit P906. The monitoring and record keeping associated with the sand received in emissions unit P906 can be used to fulfill the requirements in this section.

2. In addition to the above information, the permittee shall also record the following information each month for this emissions units:
  - a. the calculated emission rate for VOC, in tons (A.III.1.a. x 0.396 lb of VOC/ton of sand x ton/2000 pounds ); and
  - b. the annual VOC emission rate, in tons, based upon the rolling, 12-month summation of the monthly emission rates.

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**IV. Reporting Requirements**

1. The permittee shall submit quarterly deviation (excursion) reports, which identify all exceedances of the following:
  - a. for the first 12 calendar months of operation following the issuance of this permit, the restriction on the maximum allowable cumulative quantity of sand processed;
  - b. after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month restriction on the quantity of sand processed; and
  - c. the rolling, 12-month emission limitation for VOC.

These quarterly deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

**V. Testing Requirements**

1. Compliance with the emission limitations specified in Section A.I.1 of the terms and conditions of this permit shall be determined in accordance with the following method(s):
  - a. Emission Limitation:  
The maximum annual sand usage shall not exceed 133,875 tons per rolling, 12-month period.  
  
Compliance Method:  
Compliance with the annual sand usage restriction shall be demonstrated by the record keeping requirements specified in Section A.III.1.
  - b. Emission Limitation:  
VOC emissions shall not exceed 26.51 tpy, based upon a rolling, 12-month summation of the monthly emissions.  
  
Compliance Method:  
The annual limitation was established by multiplying the company-supplied emission factor of 0.396 lb VOC/ton of sand by 133,875 tons sand per year and dividing by 2000 lbs/ton. If required, compliance with the lb/ton emission limitation shall be demonstrated based on the results of the emission testing conducted in accordance with Methods 1-4, 18, 25 or 25A of 40 CFR Part 60, Appendix A.

Compliance with the annual emission limitation shall be demonstrated by the record keeping requirements specified in Section A.III.2.

**VI. Miscellaneous Requirements**

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**GM Powertrain Group, Defiance Plant**

**DTI Application: 03 17252**

**Facility ID: 0320010001**

None

Emissions Unit ID: P801

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**B. State Only Enforceable Section**

**I. 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.

**Operations, Property, and/or Equipment -(P801) - precision sand core storage and assembly area**

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
None	None

**2. Additional Terms and Conditions**

2.a None

**II. Operational Restrictions**

None

**III. Monitoring and/or Recordkeeping Requirements**

None

**IV. Reporting Requirements**

None

**V. Testing Requirements**

None

**VI. Miscellaneous Requirements**

None

Issued: To be entered upon final issuance

**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. State and Federally Enforceable Section**

**I. 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.

**Operations, Property, and/or Equipment -(P906) - precision sand receiving and storage**

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-17-07(B)	Visible fugitive particulate emissions (PE) shall not exceed 20% opacity, as a three-minute average, except as provided by rule.
OAC rule 3745-17-08(B)(3)	The permittee shall utilize reasonable available control measures that are sufficient to minimize or eliminate visible emissions of fugitive dust. (See A.I.2.b.)
OAC rule 3745-31-05(C)	<p>Particulate matter emissions less than or equal to 10 microns in size (PM10) shall not exceed 1.17 tons per year (tpy), based upon a rolling, 12-month summation of the monthly emissions.</p> <p><u>600-ton receiving bin and two 60-ton receiving storage bins (Stack No. 2)</u> PM10 emissions shall not exceed 0.007 lb/ton of sand processed.</p> <p><u>20-ton intermediate bin and two 70-ton storage bins (Stack No. 3)</u> PM10 emissions shall not exceed 0.0105 lb/ton of sand processed.</p> <p>Fugitive PM10 emissions shall not exceed 0.58 tpy, based upon a rolling, 12-month summation of the monthly emissions.</p> <p>Visible PE shall not exceed 5% opacity, as a six-minute average.</p> <p>See A.I.2.c. and A.I.2.e.</p>
OAC rule 3745-17-07(A) OAC rule 3745-17-11(B)	The emission limitations specified by these rules are less stringent than the emission limitations established pursuant to OAC rule 3745-31-05(C).

**2. Additional Terms and Conditions**

- 2.a This emissions units includes the following material handling operations:

- i. one sand receiving station (fugitive);

Emissions Unit ID: P906

- ii. one exterior receiving storage silo (exhausted to Stack 2);
- iii. two receiving storage bins (exhausted to Stack 2);
- iv. one intermediate storage bin (exhausted to Stack 3);

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- v. two storage bins (exhausted to Stack 3); and
- vi. associated conveyors.

This emissions unit is partially abated with two dust collectors.

- 2.b** The requirements specified by this rule are equivalent to and/or less stringent than the requirements established pursuant to OAC rule 3745-31-05(C).
- 2.c** The rolling, 12-month emission limitations are federally enforceable restrictions established for the purpose of reducing emissions. The emission limitations are based on the federally enforceable restriction on the amount of sand received (See A.II.1).
- 2.d** All emissions of particulate matter are PM10.
- 2.e** The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to PM10 from this air contaminant source since the potential to emit is less than ten tons per year, taking into account the federally enforceable restriction on the amount of sand received and the use of dust collectors.

**II. Operational Restrictions**

- 1. The maximum annual sand received in this emissions unit shall not exceed 133,875 tons, based upon a rolling, 12-month summation.

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

<u>Month(s)</u>	<u>Maximum Allowable Cumulative Amount of Sand Received (tons)</u>
1	13,400
1-2	26,800
1-3	40,200
1-4	53,600
1-5	67,000
1-6	80,400
1-7	93,800
1-8	107,200
1-9	120,600
1-10	125,067
1-11	129,534
1-12	133,875

After the first 12 calendar months of operation following the issuance of this permit,

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compliance with the annual sand usage limitation shall be based upon a rolling, 12-month summation of monthly sand received.

**III. Monitoring and/or Recordkeeping Requirements**

1. The permittee shall collect and record the following information each month for this emissions units:
  - a. the quantity of sand received, in tons;
  - b. for the first 12 months of operation following the issuance of this permit, the cumulative quantity of sand processed, in tons; and
  - c. after the first 12 months operation, the quantity of sand processed, in tons, based on a rolling, 12-month summation of the sand processed.
2. In addition to the above information, the permittee shall also record the following information each month for this emissions units:
  - a. the calculated emission rate for PM10, in tons (A.III.1.a. x 0.0175 lb of PM10/ton of sand x ton/2000 pounds )
  - b. the calculated emission rate for fugitive PM10, in tons (A.III.1.a. x 0.0087 lb of PM10/ton of sand x ton/2000 pounds );
  - c. the annual PM10 emission rate, in tons, based upon the rolling, 12-month summation of the monthly emission rates; and
  - d. the annual fugitive PM10 emission rate, in tons, based upon the rolling, 12-month summation of the monthly emission rates.
3. The permittee shall perform weekly\* checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack and for any visible emissions of fugitive dust from the egress points (i.e., building windows, doors, roof monitors, etc.) serving 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 date and time of the visible emission observation;
  - b. the identification of the stack or egress observed;
  - c. the color of the emissions;
  - d. the total duration of any visible emission observation; and
  - e. the corrective actions, if any, taken to eliminate the visible emissions.

\*once during each normal calendar week

Emissions Unit ID: P906

#### IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack serving this emissions unit, (b) identify all days during which any visible emissions of fugitive dust were observed from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit, and (c) describe any corrective actions taken to minimize or eliminate the visible particulate emissions and/or visible fugitive dust emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous six-month periods.
2. The permittee shall submit quarterly deviation (excursion) reports, which identify all exceedances of the following:
  - a. for the first 12 calendar months of operation following the issuance of this permit, the maximum allowable cumulative sand throughput limitation;
  - b. after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month sand throughput limitation; and
  - c. the rolling, 12-month emission limitation for fugitive PM10 and stack PM10.

These quarterly deviation reports shall be submitted in accordance with the General Terms and Conditions of this permit.

#### V. 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 180 days after achieving the maximum production rate at which the emissions unit will be operated, but no later than June 30, 2010.
  - b. The emission testing shall be conducted to demonstrate compliance with the baghouse outlet emission rates of:
    - i. 0.0070 lb PM10/ton of sand processed for stack 2 emissions units.
    - ii. 0.0105 lb PM10/ton of sand processed for stack 3 emissions units.
  - c. The following test methods shall be employed to demonstrate compliance with the above emission limitations: for PM10, 40 CFR Part 51, Appendix M, Methods 201 and 202. Alternative U.S. EPA-approved test methods may be used with prior approval from the Ohio EPA, NWDO.
  - d. The test(s) shall be conducted while the emissions unit is operating at its maximum capacity, unless otherwise specified or approved by the Ohio EPA, NWDO.
  - e. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA, NWDO. The "Intent to

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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, NWDO's refusal to accept the results of the emission test(s).

Personnel from the Ohio EPA, NWDO 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 of the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA, NWDO 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 Ohio EPA, NWDO.

2. Compliance with the emission limitations in Section A.1 of these terms and conditions shall be determined in accordance with the following methods:
  - a. Emission Limitation:  
The maximum annual amount of sand received shall not exceed 133,875 tons per rolling, 12-month period.  
  
Compliance Method:  
Compliance shall be demonstrated by the record keeping requirements specified in section A.III.1.
  - b. Emission Limitation:  
stack PM10 emissions shall not exceed 1.17tpy, based on a rolling, 12-month summation of the monthly emissions.  
  
fugitive PM10 emissions shall not exceed 0.58tpy, based on a rolling, 12-month summation of the monthly emissions.  
  
Compliance Method:  
Compliance shall be demonstrated by the record keeping requirements specified in section A.III.2.
  - c. Emission Limitations:  
PM10 shall not exceed 0.007 lb/ton of sand received from stack 2 emissions units  
PM10 shall not exceed 0.0105 lb/ton of sand received from stack 3 emissions units.  
  
Applicable Compliance Method:

Emissions Unit ID: P906

Compliance shall be demonstrated based on the results of emission testing conducted in accordance with Methods 201 and 202 of 40 CFR Part 51, Appendix M.

- d. Emission Limitation:  
Visible PE from the baghouse stack(s) shall not exceed 5% opacity

Applicable Compliance Method:

If required, compliance shall be determined according to test Method 9 as set forth in the "Appendix on Test Methods" in 40 CFR Part 60 "Standards of Performance for New Stationary Sources."

- e. Emission Limitation:  
Visible fugitive PE shall not exceed 20% opacity, as a three-minute average, except as provided by rule, from the unloading operation at the sand receiving station.

Applicable Compliance Method:

If required, compliance with the visible emission limitation shall be determined in accordance with Test Method 9 as set forth in "Appendix on Test Methods" in 40 CFR, Part 60 ("Standards of Performance for New Stationary Sources"), as such Appendix existed on July 1, 2002, and the modifications listed in paragraphs (B)(3)(a) and (B)(3)(b) of OAC rule 3745-17-03.

## VI. Miscellaneous Requirements

None

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**B. State Only Enforceable Section**

**I. 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.

**Operations, Property, and/or Equipment -(P906) - precision sand receiving and storage**

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
None	None

**2. Additional Terms and Conditions**

2.a None

**II. Operational Restrictions**

None

**III. Monitoring and/or Recordkeeping Requirements**

None

**IV. Reporting Requirements**

None

**V. Testing Requirements**

None

**VI. Miscellaneous Requirements**

None

GM P

PTI A

Emissions Unit ID: P141

Issued: To be entered upon final issuance

**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)****A. State and Federally Enforceable Section****I. 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.

**Operations, Property, and/or Equipment -(P141) - ML3 mold facilities**

<b>Applicable Rules/Requirements</b>	<b>Applicable Emissions Limitations/Control Measures</b>
OAC rule 3745-31-05(C)	Particulate matter emissions less than or equal to 10 microns in size (PM10) shall not exceed 0.92 ton per year (tpy), based upon a rolling, 12-month summation of the monthly emissions.  See A.I.2.d and A.I.2.e.
OAC rule 3745-17-07(A)	Visible particulate matter emissions (PE) shall not exceed 20% opacity, as a six-minute average, except as provided by rule.
OAC rule 3745-17-11(B)	53.2 pounds of PE/hour

**2. Additional Terms and Conditions**

- 2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

- 2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.
- 2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this

Emissions Unit ID: P141

emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: 377

Dust collectors: none

- 2.d** The rolling, 12-month limitation is a federally enforceable restriction on the potential to emit established for the purpose of establishing a net decrease within the contemporaneous period for this permit to install.
- 2.e** The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to PM10 from this air contaminant source since the potential to emit is less than ten tons per year taking into account the federally enforceable restriction on the number of castings and the use of a baghouse.

## II. Operational Restrictions

1. The maximum annual number of castings poured shall not exceed 1.1 million, for the Mold 3 manufacturing line (ML3), which includes emissions units P141, P142, P149, P154, P248 and P264, based upon a rolling, 12-month summation of the monthly number of castings poured.

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

Month(s)	Maximum Allowable Cumulative Production (castings poured)
1	91,667
1-2	183,333
1-3	275,000
1-4	366,667
1-5	458,334
1-6	550,001
1-7	641,668
1-8	733,335
1-9	825,002
1-10	916,669
1-11	1,008,336
1-12	1,100,000

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

**Issued: To be entered upon final issuance****III. Monitoring and/or Recordkeeping Requirements**

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:
  - a. for uncontrolled stacks, once weekly\* during normal operations ;
  - b. for wet dust collectors, once weekly\* during normal operations; and
  - c. for dry dust collectors, once weekly\* during normal operations.

\*Once during each normal operating calendar week
2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, 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 date and time of the visible emission observation;
  - b. the identification of the stack observed;
  - c. the color of the emissions;
  - d. the total duration of any visible emission observation; and
  - e. the corrective actions, if any, taken to eliminate the visible emissions.
3. The permittee shall collect and record the following information each month for ML3, which includes emissions units P141, P142, P149, P154, P248 and P264:
  - a. the production rate for each month, number of castings poured;
  - b. for the first 12 calendar months of operation following the issuance of this permit, the cumulative production rate for each calendar month; and
  - c. after the first 12 calendar months operation following the issuance of this permit, the rolling, 12-month summation of the monthly production rates.
4. In addition to the above information, the permittee shall also record the following information each month for this emissions units:
  - a. the calculated emission rate for PM10, in tons (A.III.3.a x 1.676E-03 lb PM10/castings poured 1/2000 pounds); and
  - b. the annual PM10 emission rate, in tons, based upon, the 12-month summation of the monthly emission rates.

**IV. Reporting Requirements**

**Issue**

Emissions Unit ID: P141

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) by January 31 and July 31 of each year and shall cover the previous 6-month period.
2. The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the following:
  - a. the rolling, 12-month production rate limitation;
  - b. the rolling, 12-month emission limitation for PM10; and
  - c. for the first 12 calendar months of operation following the issuance of this permit, all exceedances of the maximum allowable cumulative production rate levels.

These reports shall be submitted in accordance with the General Terms and Conditions of this permit.

**V. Testing Requirements**

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:
  - a. Emission Limitations:  
53.2 lbs PE/hr and 0.020 gr/dscf (if applicable)

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly PE limitation based on the following formula:

$$E = \text{summation of } (F_i \times C_i^* \times 60 \text{ min/hr} \times 1 \text{ lb/7000 gr from each stack})$$

Where:

E= the PE rate in lbs/hr from the emissions unit;

F<sub>i</sub>= the flow rate from this emissions unit for each stack that this emissions unit is vented to, in dscf; and

C<sub>i</sub>= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

\*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit. If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 1-5 of 40 CFR, Part 60, Appendix A.

- b. Emission Limitation:  
Visible PE shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.

**GM P****PTI A**

Emissions Unit ID: P141

**Issued: To be entered upon final issuance**Applicable Compliance Method:

If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

c. Emission Limitation:

The number of castings poured shall not exceed 1.1 million, per rolling, 12-month period.

Applicable Compliance Method:

Compliance shall be demonstrated by the record keeping requirements specified in section A.III.3.

d. Emission Limitation:

PM10 shall not exceed 0.92 tpy, based on a rolling, 12-month summation of the monthly emissions.

Applicable Compliance Method:

Compliance shall be demonstrated by the record keeping requirements specified in section A.III.4.

**VI. Miscellaneous Requirements**

None

**GM P**

**PTI A**

Emissions Unit ID: P141

**Issued: To be entered upon final issuance**

**B. State Only Enforceable Section**

**I. 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.

**Operations, Property, and/or Equipment -(P141) - ML3 mold facilities**

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
None	None

**2. Additional Terms and Conditions**

2.a None

**II. Operational Restrictions**

None

**III. Monitoring and/or Recordkeeping Requirements**

None

**IV. Reporting Requirements**

None

**V. Testing Requirements**

None

**VI. Miscellaneous Requirements**

None

**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)****A. State and Federally Enforceable Section****I. 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.

**Operations, Property, and/or Equipment -(P142) - ML3 mold cooling**

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05(C)	<p>Particulate matter emissions less than or equal to 10 microns in size (PM10) shall not exceed 1.39 tons per year, based upon a rolling, 12-month summation of the monthly emissions.</p> <p>Volatile organic compound (VOC) emissions shall not exceed 8.10 tons per year, based upon a rolling, 12-month summation of the monthly emissions.</p> <p>See A.I.2.d.</p>
OAC rule 3745-17-07(A)	Visible particulate matter emissions (PE) shall not exceed 20% opacity, as a six-minute average, except as provided by rule.
OAC rule 3745-17-11(B)	35.4 pounds of PE/hour

**2. Additional Terms and Conditions**

- 2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

- 2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.
- 2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and

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dust collectors are associated with this emissions unit:

Uncontrolled stacks: 308 and 309

Dust collectors: DC079 Plt, DC-087 Plt1, DC-088 Plt1 and DC-089 Plt1

- 2.d** The rolling, 12-month limitation is a federally enforceable restriction on the potential to emit established for the purpose of establishing a net decrease within the contemporaneous period for this permit to install.

**II. Operational Restrictions**

1. The maximum annual number of castings poured shall not exceed 1.1 million, for the Mold 3 manufacturing line (ML3), which includes emissions units P141, P142, P149, P154, P248 and P264, based upon a rolling, 12-month summation of the monthly number of castings poured.

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

<u>Month(s)</u>	<u>Maximum Allowable Cumulative Production (castings poured)</u>
1	91,667
1-2	183,333
1-3	275,000
1-4	366,667
1-5	458,334
1-6	550,001
1-7	641,668
1-8	733,335
1-9	825,002
1-10	916,669
1-11	1,008,336
1-12	1,100,000

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

**III. Monitoring and/or Recordkeeping Requirements**

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:
  - a. for uncontrolled stacks, once weekly\* during normal operations ;
  - b. for wet dust collectors, once weekly\* during normal operations; and
  - c. for dry dust collectors, once weekly\* during normal operations.

\*Once during each normal operating calendar week
2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, 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 date and time of the visible emission observation;
  - b. the identification of the stack observed;
  - c. the color of the emissions;
  - d. the total duration of any visible emission observation; and
  - e. the corrective actions, if any, taken to eliminate the visible emissions.
3. The permittee shall collect and record the following information each month for ML3, which includes emissions units P141, P142, P149, P154, P248 and P264:
  - a. the production rate for each month, number of castings poured;
  - b. for the first 12 calendar months of operation following the issuance of this permit, the cumulative production rate for each calendar month; and
  - c. after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month summation of the production rates.
4. In addition to the above information, the permittee shall also record the following information each month for this emissions units:
  - a. the calculated emission rate for PM10, in tons (A.III.3.a x 2.529E-03 lb PM10/castings poured x 1/2000 pounds);
  - b. the calculated emission rate for VOC, in tons (A.III.3.a x 1.472E-02 lb of VOC/castings poured x 1/2000 pounds);
  - c. the annual PM10 emission rate, in tons, based upon, the 12-month summation of the monthly emission rates; and
  - d. the annual VOC emission rate, in tons, based upon, the 12-month summation of the monthly emission rates.

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**Issued: To be entered upon final issuance****IV. Reporting Requirements**

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) by January 31 and July 31 of each year and shall cover the previous 6-month period.
2. The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the following:
  - a. the rolling, 12-month production rate limitation;
  - b. the rolling, 12-month emission limitations for VOC and PM10; and
  - c. for the first 12 calendar months of operation following the issuance of this permit, all exceedances of the maximum allowable cumulative production rate levels.

These quarterly reports shall be submitted in accordance with the General Terms and Conditions of this permit.

**V. Testing Requirements**

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:
  - a. Emission Limitations:  
35.4 lbs PE/hr and .020 gr/dscf (if applicable)

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly PE limitation based on the following formula:

$E = \text{summation of } (F_i \times C_i^* \times 60 \text{ min/hr} \times 1 \text{ lb}/7000 \text{ gr from each stack})$

Where:

E= the PE rate in lbs/hr from the emissions unit;

F<sub>i</sub>= the flow rate from this emissions unit for each stack that this emissions unit is vented to, in dscf; and

C<sub>i</sub>= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

\*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions

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from the stack(s) associated with this emissions unit. If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 1-5 of 40 CFR, Part 60, Appendix A.

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- b. Emission Limitation:  
Visible PE shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.
- Applicable Compliance Method:  
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).
- c. Emission Limitation:  
The number of castings poured shall not exceed 1.1 million, per rolling, 12-month period.
- Applicable Compliance Method:  
Compliance shall be demonstrated by the record keeping requirements specified in section A.III.3.
- d. Emission Limitation:  
PM10 shall not exceed 1.39 tpy, based on a rolling, 12-month summation of the monthly emissions.
- Applicable Compliance Method:  
Compliance shall be demonstrated by the record keeping requirements specified in section A.III.4.
- e. Emission Limitation:  
VOC shall not exceed 8.10 tpy, based on a rolling, 12-month summation of the monthly emissions.
- Applicable Compliance Method:  
Compliance shall be demonstrated by the record keeping requirements specified in section A.III.4.

**VI. Miscellaneous Requirements**

None

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Issued: To be entered upon final issuance

**B. State Only Enforceable Section****I. 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.

**Operations, Property, and/or Equipment -(P142) - ML3 mold cooling**

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
None	None

**2. Additional Terms and Conditions**

2.a None

**II. Operational Restrictions**

None

**III. Monitoring and/or Recordkeeping Requirements**

None

**IV. Reporting Requirements**

None

**V. Testing Requirements**

None

**VI. Miscellaneous Requirements**

None

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PTI A

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Issued: To be entered upon final issuance

**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)****A. State and Federally Enforceable Section****I. 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.

**Operations, Property, and/or Equipment -(P149) - ML3 sand system**

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05(C)	Particulate matter emissions less than or equal to 10 microns in size (PM10) shall not exceed 6.14 tons per year, based upon a rolling, 12-month summation of the monthly emissions.  See A.I.2.d.
OAC rule 3745-17-07(A)	Visible particulate matter emissions (PE) shall not exceed 20% opacity, as a six-minute average, except as provided by rule.
OAC rule 3745-17-11(B)	45.0 pounds of PE/hour

**2. Additional Terms and Conditions**

- 2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

- 2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.
- 2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this

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emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: 308 and 309

Dust collectors: DC079 Pit, DC-087 Pit1, DC-088 Pit1 and DC-089 Pit1

- 2.d** The rolling, 12-month limitation is a federally enforceable restriction on the potential to emit established for the purpose of establishing a net decrease within the contemporaneous period for this permit to install.

## II. Operational Restrictions

1. The maximum annual number of castings poured shall not exceed 1.1 million, for the Mold 3 manufacturing line (ML3), which includes emissions units P141, P142, P149, P154, P248 and P264, based upon a rolling, 12-month summation of the monthly number of castings poured.

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

Month(s)	Maximum Allowable Cumulative Production (castings poured)
1	91,667
1-2	183,333
1-3	275,000
1-4	366,667
1-5	458,334
1-6	550,001
1-7	641,668
1-8	733,335
1-9	825,002
1-10	916,669
1-11	1,008,336
1-12	1,100,000

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

## III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

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- a. for uncontrolled stacks, once weekly\* during normal operations ;
- b. for wet dust collectors, once weekly\* during normal operations; and
- c. for dry dust collectors, once weekly\* during normal operations.

\*Once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, 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 date and time of the visible emission observation;
  - b. the identification of the stack observed;
  - c. the color of the emissions;
  - d. the total duration of any visible emission observation; and
  - e. the corrective actions, if any, taken to eliminate the visible emissions.
3. The permittee shall collect and record the following information each month for ML3, which includes emissions units P141, P142, P149, P154, P248 and P264:
  - a. the production rate for each month, number of castings poured;
  - b. for the first 12 calendar months of operation following the issuance of this permit, the cumulative production rate for each calendar month; and
  - c. after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month summation of the production rates.
4. In addition to the above information, the permittee shall also record the following information each month for this emissions units:
  - a. the calculated emission rate for PM10, in tons ( $A.III.3.a \times 1.117E-02$  lb PM10/castings poured); and
  - b. the annual PM10 emission rate, in tons, based upon, the 12-month summation of the monthly emission rates.

**IV. Reporting Requirements**

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) by January 31 and July 31 of each year and shall cover the previous 6-month period.

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2. The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the following:
  - a. the rolling, 12-month production rate limitation;
  - b. the rolling, 12-month emission limitation for PM10; and
  - c. for the first 12 calendar months of operation following the issuance of this permit, all exceedances of the maximum allowable cumulative production rate levels.

These reports shall be submitted in accordance with the General Terms and Conditions of this permit.

## V. Testing Requirements

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:
  - a. Emission Limitations:  
45.0 lbs PE/hr and .020 gr/dscf (if applicable)

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly PE limitation based on the following formula:

$$E = \text{summation of } (F_i \times C_i \times 60 \text{ min/hr} \times 1 \text{ lb}/7000 \text{ gr from each stack})$$

Where:

E= the PE rate in lbs/hr from the emissions unit;

F<sub>i</sub>= the flow rate from this emissions unit for each stack that this emissions unit is vented to, in dscf; and

C<sub>i</sub>= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

\*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit. If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 1-5 of 40 CFR, Part 60, Appendix A.

- b. Emission Limitation:  
Visible PE shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:

If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

- c. Emission Limitation:

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The number of castings poured shall not exceed 1.1 million, per rolling, 12-month period.

Applicable Compliance Method:

Compliance shall be demonstrated by the record keeping requirements specified in section A.III.3.

d. Emission Limitation:

PM10 shall not exceed 6.14 tpy, based on a rolling, 12-month summation of the monthly emissions.

Applicable Compliance Method:

Compliance shall be demonstrated by the record keeping requirements specified in section A.III.4.

**VI. Miscellaneous Requirements**

None

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PTI A

Emissions Unit ID: P149

Issued: To be entered upon final issuance

**B. State Only Enforceable Section****I. 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.

**Operations, Property, and/or Equipment -(P149) - ML3 sand system**

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
None	None

**2. Additional Terms and Conditions**

2.a None

**II. Operational Restrictions**

None

**III. Monitoring and/or Recordkeeping Requirements**

None

**IV. Reporting Requirements**

None

**V. Testing Requirements**

None

**VI. Miscellaneous Requirements**

None

**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)****A. State and Federally Enforceable Section****I. 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.

**Operations, Property, and/or Equipment - (P154) - ML3 sprue handling**

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05(C)	Particulate matter emissions less than or equal to 10 microns in size (PM10) shall not exceed 8.63 tons per year, based upon a rolling, 12-month summation of the monthly emissions.  See A.I.2.d.
OAC rule 3745-17-07(A)	Visible particulate matter emissions (PE) shall not exceed 20% opacity, as a six-minute average, except as provided by rule.
OAC rule 3745-17-11(B)	40.0 pounds of PE/hour

**2. Additional Terms and Conditions**

- 2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

- 2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.
- 2.c Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: none

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Dust collectors: DC025 Plt1, DC061 Plt1, DC-088 Plt1 and DC-089 Plt1

- 2.d** The rolling, 12-month limitation is a federally enforceable restriction on the potential to emit established for the purpose of establishing a net decrease within the contemporaneous period for this permit to install.

**II. Operational Restrictions**

- 1. The maximum annual number of castings poured shall not exceed 1.1 million, for the Mold 3 manufacturing line (ML3), which includes emissions units P141, P142, P149, P154, P248 and P264, based upon a rolling, 12-month summation of the monthly number of castings poured.

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

<u>Month(s)</u>	<u>Maximum Allowable Cumulative Production (castings poured)</u>
1	91,667
1-2	183,333
1-3	275,000
1-4	366,667
1-5	458,334
1-6	550,001
1-7	641,668
1-8	733,335
1-9	825,002
1-10	916,669
1-11	1,008,336
1-12	1,100,000

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

**III. Monitoring and/or Recordkeeping Requirements**

- 1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:

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- a. for uncontrolled stacks, once weekly\* during normal operations ;
- b. for wet dust collectors, once weekly\* during normal operations; and
- c. for dry dust collectors, once weekly\* during normal operations.

\*Once during each normal operating calendar week

2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, 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 date and time of the visible emission observation;
  - b. the identification of the stack observed;
  - c. the color of the emissions;
  - d. the total duration of any visible emission observation; and
  - e. the corrective actions, if any, taken to eliminate the visible emissions.
3. The permittee shall collect and record the following information each month for ML3, which includes emissions units P141, P142, P149, P154, P248 and P264:
  - a. the production rate for each month, number of castings poured;
  - b. for the first 12 calendar months of operation following the issuance of this permit, the cumulative production rate for each calendar month; and
  - c. after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month summation of the production rates.
4. In addition to the above information, the permittee shall also record the following information each month for this emissions units:
  - a. the calculated emission rate for PM10, in tons ( $A.III.3.a \times 1.569E-02 \text{ lb PM10/castings poured} \times 1/2000 \text{ pounds}$ ); and
  - b. the annual PM10 emission rate, in tons, based upon, the 12-month summation of the monthly emission rates.

#### IV. Reporting Requirements

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) by January 31 and July 31 of each year and shall cover the previous 6-month period.
2. The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the following:
  - a. the rolling, 12-month production rate limitation;

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- b. the rolling, 12-month emission limitation for PM10; and
- c. for the first 12 calendar months of operation following the issuance of this permit, all exceedances of the maximum allowable cumulative production rate levels.

These reports shall be submitted in accordance with the General Terms and Conditions of this permit.

**V. Testing Requirements**

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:

- a. Emission Limitations:  
40.0 lbs PE/hr and .020 gr/dscf (if applicable)

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly PE limitation based on the following formula:

$$E = \text{summation of } (F_i \times C_i \times 60 \text{ min/hr} \times 1 \text{ lb}/7000 \text{ gr from each stack})$$

Where:

E= the PE rate in lbs/hr from the emissions unit;

F<sub>i</sub>= the flow rate from this emissions unit for each stack that this emissions unit is vented to, in dscf; and

C<sub>i</sub>= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

\*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions from the stack(s) associated with this emissions unit. If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 1-5 of 40 CFR, Part 60, Appendix A.

- b. Emission Limitation:  
Visible PE shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:

If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

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- c. Emission Limitation:  
The number of castings poured shall not exceed 1.1 million, per rolling, 12-month period.
- Applicable Compliance Method:  
Compliance shall be demonstrated by the record keeping requirements specified in section A.III.3.
- d. Emission Limitation:  
PM10 shall not exceed 8.63 tpy, based on a rolling, 12-month summation of the monthly emissions.
- Applicable Compliance Method:  
Compliance shall be demonstrated by the record keeping requirements specified in section A.III.3.

**VI. Miscellaneous Requirements**

None

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PTI A

Emissions Unit ID: P154

Issued: To be entered upon final issuance

**B. State Only Enforceable Section****I. 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.

**Operations, Property, and/or Equipment - (P154) - ML3 sprue handling**

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
None	None

**2. Additional Terms and Conditions**

2.a None

**II. Operational Restrictions**

None

**III. Monitoring and/or Recordkeeping Requirements**

None

**IV. Reporting Requirements**

None

**V. Testing Requirements**

None

**VI. Miscellaneous Requirements**

None

GM P

PTI A

Emissions Unit ID: P248

Issued: To be entered upon final issuance

**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)****A. State and Federally Enforceable Section****I. 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.

**Operations, Property, and/or Equipment - (P248) - ML3 mold shakeout and casting cooling**

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-31-05(C)	Particulate matter emissions less than or equal to 10 microns in size (PM10) shall not exceed 3.60 tons per year, based upon a rolling, 12-month summation of the monthly emissions.  Volatile organic compound (VOC) emissions shall not exceed 8.40 tons per year, based upon a rolling, 12-month summation of the monthly emissions.  See A.I.2.d.
OAC rule 3745-17-07(A)	Visible particulate matter emissions (PE) shall not exceed 20% opacity, as a six-minute average, except as provided by rule.
OAC rule 3745-17-11(B)	43.70 pounds of PE/hour

**2. Additional Terms and Conditions**

- 2.a Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from the following dust collectors (listed in Table 2 of the Consent Order) shall be limited to 0.020 grain per dry standard cubic foot (dscf) of exhaust gases:

Plant 1 dust collectors:

DC-005B, DC-011B, DC-013A, DC-016, DC-034B, DC-035A, DC-044A, DC057A, DC064A, DC065A, DC067A, DC069A, DC071A, DC072A, DC079, DC080, DC081, DC083, DC086, DC087, DC088, and DC-089

Plant 2 dust collectors:

DC-001A, DC002A, DC-003A, DC004A, DC007A, DC008A, DC-009A, DC-011A, DC-013A, DC-014A, DC-022A, DC027, DC-029, and DC-030

- 2.b Pursuant to Consent Order No. 98 CV 33718, dated July 10, 1998, and as modified on September 8, 2004, the outlet concentration of PE from Plant 2 dust collectors DC-010A and DC-019A shall be limited to 0.050 grain per dry standard cubic foot (dscf) of exhaust gases.

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- 2.c** Nothing in this permit shall preclude the permittee from routing emissions from this emissions unit to other dust collectors or stacks, or to route emissions from other emissions units to the dust collectors and stacks associated with this emissions unit. As of the effective date of this permit, the following stacks and dust collectors are associated with this emissions unit:

Uncontrolled stacks: 118, 159, 316, 318, 321 and 379

Dust collectors: DC067A Plt1, DC079 Plt1, DC-087 Plt1, DC-088 Plt1 and DC-089 Plt1

- 2.d** The rolling, 12-month limitation is a federally enforceable restriction on the potential to emit established for the purpose of establishing a net decrease within the contemporaneous period for this permit to install.

## II. Operational Restrictions

1. The maximum annual number of castings poured shall not exceed 1.1 million, for the Mold 3 manufacturing line (ML3), which includes emissions units P141, P142, P149, P154, P248 and P264, based upon a rolling, 12-month summation of the monthly number of castings poured.

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

<u>Month(s)</u>	<u>Maximum Allowable Cumulative Production (castings poured)</u>
1	91,667
1-2	183,333
1-3	275,000
1-4	366,667
1-5	458,334
1-6	550,001
1-7	641,668
1-8	733,335
1-9	825,002
1-10	916,669
1-11	1,008,336
1-12	1,100,000

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

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Emissions Unit ID: P248

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**Issued: To be entered upon final issuance****III. Monitoring and/or Recordkeeping Requirements**

1. The permittee shall perform checks according to the following frequencies, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit:
  - a. for uncontrolled stacks, once weekly\* during normal operations ;
  - b. for wet dust collectors, once weekly\* during normal operations; and
  - c. for dry dust collectors, once weekly\* during normal operations.

\*Once during each normal operating calendar week
2. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, 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 date and time of the visible emission observation;
  - b. the identification of the stack observed;
  - c. the color of the emissions;
  - d. the total duration of any visible emission observation; and
  - e. the corrective actions, if any, taken to eliminate the visible emissions.
3. The permittee shall collect and record the following information each month for ML3, which includes emissions units P141, P142, P149, P154, P248 and P264:
  - a. the production rate for each month, number of castings poured;
  - b. for the first 12 calendar months of operation following the issuance of this permit, the cumulative production rate for each calendar month; and
  - c. after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month summation of the production rates.
4. In addition to the above information, the permittee shall also record the following information each month for this emissions units:
  - a. the calculated emission rate for PM10, in tons (A.III.3.a x 6.547E-03 lb PM10/castings poured x 1/2000 pounds);
  - b. the calculated emission rate for VOC, in tons (A.III.3.a x 1.527E-02 lb of VOC/castings poured x 1/2000 pounds);
  - c. the annual PM10 emission rate, in tons, based upon, the 12-month summation of the monthly emission rates; and

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- d. the annual VOC emission rate, in tons, based upon, the 12-month summation of the monthly emission rates.

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1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) by January 31 and July 31 of each year and shall cover the previous 6-month period.
2. The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the following:
  - a. the rolling, 12-month production rate limitation;
  - b. the rolling, 12-month emission limitations for VOC and PM10; and
  - c. for the first 12 calendar months of operation following the issuance of this permit, all exceedances of the maximum allowable cumulative production rate levels.

These reports shall be submitted in accordance with the General Terms and Conditions of this permit.

**V. Testing Requirements**

1. Compliance with the emissions limitations in Section A.I.1. of these terms and conditions shall be determined in accordance with the following methods:
  - a. Emission Limitations:  
43.70 lbs PE/hr and .020 gr/dscf (if applicable)

Applicable Compliance Method:

The permittee may demonstrate compliance with the hourly PE limitation based on the following formula:

$E = \text{summation of } (F_i \times C_i^* \times 60 \text{ min/hr} \times 1 \text{ lb/7000 gr from each stack})$

Where:

E= the PE rate in lbs/hr from the emissions unit;

F<sub>i</sub>= the flow rate from this emissions unit for each stack that this emissions unit is vented to, in dscf; and

C<sub>i</sub>= the outlet concentration of PE from each stack that this emissions unit is vented to, in gr/dscf.

\*Previous stack testing at the plant has shown that the stacks that had no visible emissions during the test, had outlet grain loadings of less than 0.020 gr/dscf.

Based on the monitoring and record keeping requirements specified in Sections A.III.1 and A.III.2, it will be assumed that this emissions unit is in compliance with the applicable particulate emission limitations if there are no visible emissions

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from the stack(s) associated with this emissions unit. If required, the permittee shall demonstrate compliance with the hourly allowable PE limitation and/or the grain loading limitation by testing in accordance with USEPA Methods 1-5 of 40 CFR, Part 60, Appendix A.

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- b. Emission Limitation:  
Visible PE shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.
- Applicable Compliance Method:  
If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).
- c. Emission Limitation:  
The number of castings poured shall not exceed 1.1 million, per rolling, 12-month period.
- Applicable Compliance Method:  
Compliance shall be demonstrated by the record keeping requirements specified in section A.III.3.
- d. Emission Limitation:  
PM10 shall not exceed 3.60 tpy, based on a rolling, 12-month summation of the monthly emissions..
- Applicable Compliance Method:  
Compliance shall be demonstrated by the record keeping requirements specified in section A.III.4.
- e. Emission Limitation:  
VOC shall not exceed 8.40 tpy, based on a rolling, 12-month summation of the monthly emissions.
- Applicable Compliance Method:  
Compliance shall be demonstrated by the record keeping requirements specified in section A.III.4.

**VI. Miscellaneous Requirements**

None

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Emissions Unit ID: P248

Issued: To be entered upon final issuance

**B. State Only Enforceable Section****I. 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.

**Operations, Property, and/or Equipment - (P248) - ML3 mold shakeout and casting cooling**

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
None	None

**2. Additional Terms and Conditions**

2.a None

**II. Operational Restrictions**

None

**III. Monitoring and/or Recordkeeping Requirements**

None

**IV. Reporting Requirements**

None

**V. Testing Requirements**

None

**VI. Miscellaneous Requirements**

None

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Emissions Unit ID: P264

Issued: To be entered upon final issuance

**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)****A. State and Federally Enforceable Section****I. 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.

**Operations, Property, and/or Equipment -(P264) - ML3 iron pour**

<b>Applicable Rules/Requirements</b>	<b>Applicable Emissions Limitations/Control Measures</b>
OAC rule 3745-31-05(C)	Particulate matter emissions less than or equal to 10 microns in size (PM10) shall not exceed 0.60 ton per year, based upon a rolling, 12-month summation of the monthly emissions.  Volatile organic compound (VOC) emissions shall not exceed 1.25 tons per year, based upon a rolling, 12-month summation of the monthly emissions.  See A.I.2.a.
OAC rule 3745-17-07(A)	Visible particulate matter emissions (PE) shall not exceed 20% opacity, as a six-minute average, except as provided by rule.
OAC rule 3745-17-11(B)	46.40 pounds of PE/hour
40 CFR Part 63 Subpart EEEEE (40 CFR 63.7680 -7765)	Comply with either limit: 0.010 grain per dry standard cubic foot of PE; or 0.0080 gr/dscf of total metal hazardous air pollutants (HAP). [40 CFR 63.7690(a)(5)]
40 CFR 63.1-15 (40 CFR 63.7760)	Table 1 of Subpart EEEEE of 40 CFR Part 63 - Applicability of General Provisions to Subpart EEEEE shows which parts of the General Provisions in 40 CFR 63.1-15 apply.

**2. Additional Terms and Conditions**

- 2.a The rolling, 12-month limitation is a federally enforceable restriction on the potential to emit established for the purpose of establishing a net decrease within the contemporaneous period for this permit to install.

**II. Operational Restrictions**

1. The maximum annual number of castings poured shall not exceed 1.1 million, for the Mold 3 manufacturing line (ML3), which includes emissions units P141, P142, P149,

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P154, P248 and P264, based upon a rolling, 12-month summation of the number of castings poured.

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

Month(s)	Maximum Allowable Cumulative Production (castings poured)
1	91,667
1-2	183,333
1-3	275,000
1-4	366,667
1-5	458,334
1-6	550,001
1-7	641,668
1-8	733,335
1-9	825,002
1-10	916,669
1-11	1,008,336
1-12	1,100,000

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

2. See 40 CFR Part 63, Subpart EEEEE (40 CFR 63.7680-7765).

### III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall perform checks, pursuant to A.III.1, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack(s) serving this emissions unit. The presence or absence of any visible emissions, excluding water vapor, 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 date and time of the visible emission observation;
  - b. the identification of the stack observed;
  - c. the color of the emissions;
  - d. the total duration of any visible emission observation; and
  - e. the corrective actions, if any, taken to eliminate the visible emissions.
2. The permittee shall collect and record the following information each month for ML3, which includes emissions units P141, P142, P149, P154, P248 and P264:
  - a. the production rate for each month, number of castings poured;
  - b. for the first 12 calendar months of operation following the issuance of this permit, the cumulative production rate for each calendar month; and

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- c. after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month summation of the production rates.
3. In addition to the above information, the permittee shall also record the following information each month for this emissions units:
  - a. the calculated emission rate for PM10, in tons (A.III.2.a x 1.088E-03 lb PM10/castings poured x 1/2000 pounds);
  - b. the calculated emission rate for VOC, in tons (A.III.2.a x 2.277E-03 lb of VOC/castings poured x 1/2000 pounds);
  - c. the annual PM10 emission rate, in tons, based upon, the 12-month summation of the monthly emission rates; and
  - d. the annual VOC emission rate, in tons, based upon, the 12-month summation of the monthly emission rates.
4. See 40 CFR Part 63, Subpart EEEEE (40 CFR 63.7680-7765).

**IV. Reporting Requirements**

1. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions, excluding water vapor, were observed from the stack(s) serving this emissions unit and (b) describe the corrective actions, if any, taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Northwest District Office) by January 31 and July 31 of each year and shall cover the previous 6-month period.
2. The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the following:
  - a. the rolling, 12-month production rate limitation;
  - b. the rolling, 12-month emission limitations for VOC and PM10; and
  - c. for the first 12 calendar months of operation following the issuance of this permit, the maximum allowable cumulative production rate levels.

These reports shall be submitted in accordance with the General Terms and Conditions of this permit.

3. See 40 CFR Part 63, Subpart EEEEE (40 CFR 63.7680-7765).

**V. Testing Requirements**

1. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:

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- a. The emission testing shall be conducted no less frequently than every five years after the initial compliance test. Testing for facility-wide fugitive opacity shall occur once every six months.
- b. The emission testing shall be conducted to demonstrate compliance with the allowable PE or metal HAPs and opacity (stack and fugitive) emission limitations.
- c. The following test methods shall be employed to demonstrate compliance with the above emission limitations:
  - i. for PE, Methods 1-5 of 40 CFR Part 60, Appendix A.
  - ii. for total metal HAPs, Methods 1-4 and 29 of 40 CFR Part 60, Appendix A.
  - iii. for opacity, Method 9 of 40 CFR Part 60, Appendix A.

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

- d. The test(s) shall be conducted while the emissions unit is operating at its maximum capacity, unless otherwise specified or approved by the Ohio EPA, NWDO. The minimum sample volume collected during each run shall be 60 dscf. The stack test shall be performed in accordance with the requirements established in 40 CFR Part 63.7732.
- e. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA, NWDO. 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, NWDO's refusal to accept the results of the emission test(s).

Personnel from the Ohio EPA, NWDO 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 of the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA, NWDO within 60 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 Ohio EPA, NWDO.

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

- a. Emission Limitations:  
0.010 gr/dscf of PE or 0.0080 gr/dscf of total metal HAP emissions

Applicable Compliance Method:

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Compliance shall be demonstrated based upon the results of emission testing conducted in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A for PE or Methods 1-4 and 29 of 40 CFR Part 60, Appendix A for total metal HAP emissions.

- b. Emission Limitation:  
46.40 lbs PE/hr

Applicable Compliance Method:

Compliance shall be demonstrated based upon the results of emission testing conducted in accordance with Methods 1-5 of 40 CFR Part 60, Appendix A.

- c. Emission Limitation:  
Visible PE shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:

If required, compliance with the visible PE limitation shall be determined in accordance with the methods specified in OAC rule 3745-17-03(B)(1).

- d. Emission Limitation:  
The number of castings poured shall not exceed 1.1 million, per rolling 12-month period.

Applicable Compliance Method:

Compliance shall be demonstrated by the record keeping requirements specified in section A.III.3.

- e. Emission Limitation:  
PM10 shall not exceed 0.60 ton per rolling, 12-month period.

Applicable Compliance Method:

Compliance shall be demonstrated by the record keeping requirements specified in section A.III.4.

- f. Emission Limitation:  
VOC shall not exceed 1.25 tons per rolling, 12-month period.

Applicable Compliance Method:

Compliance shall be demonstrated by the record keeping requirements specified in section A.III.4.

## VI. Miscellaneous Requirements

None

GM P

PTI A

Emissions Unit ID: P264

Issued: To be entered upon final issuance

**B. State Only Enforceable Section****I. 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.

**Operations, Property, and/or Equipment -(P264) - ML3 iron pour**

Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
None	None

**2. Additional Terms and Conditions**

2.a None

**II. Operational Restrictions**

None

**III. Monitoring and/or Recordkeeping Requirements**

None

**IV. Reporting Requirements**

None

**V. Testing Requirements**

None

**VI. Miscellaneous Requirements**

None