



John R. Kasich, Governor
 Mary Taylor, Lt. Governor
 Craig W. Butler, Director

8/31/2016

Mr. Ben Fogle
 GM Defiance Casting Operations
 26427 State Route 281 East
 Defiance, OH 43512

RE: DRAFT AIR POLLUTION PERMIT-TO-INSTALL
 Facility ID: 0320010001
 Permit Number: P0120980
 Permit Type: Initial Installation
 County: Defiance

Certified Mail

Yes	TOXIC REVIEW
No	PSD
Yes	SYNTHETIC MINOR TO AVOID MAJOR NSR
No	CEMS
No	MACT/GACT
Yes	NSPS
No	NESHAPS
Yes	NETTING
No	MAJOR NON-ATTAINMENT
Yes	MODELING SUBMITTED
No	MAJOR GHG
No	SYNTHETIC MINOR TO AVOID MAJOR GHG

Dear Permit Holder:

A draft of the Ohio Administrative Code (OAC) Chapter 3745-31 Air Pollution Permit-to-Install for the referenced facility has been issued for the emissions unit(s) listed in the Authorization section of 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 permit. A public notice will appear in the Ohio Environmental Protection Agency (EPA) Weekly Review and the local newspaper, Crescent-News. A copy of the public notice and the draft permit are enclosed. This permit can be accessed electronically on the Division of Air Pollution Control (DAPC) Web page, www.epa.ohio.gov/dapc by clicking the "Search for Permits" link under the Permitting topic on the Programs tab. Comments will be accepted as a marked-up copy of the draft permit or in narrative format. Any comments must be sent to the following:

Andrew Hall
 Permit Review/Development Section
 Ohio EPA, DAPC
 50 West Town Street, Suite 700
 P.O. Box 1049
 Columbus, Ohio 43216-1049

and Ohio EPA DAPC, Northwest District Office
 347 North Dunbridge Road
 Bowling Green, OH 43402

Comments and/or a request for a public hearing will be accepted within 30 days of the date the notice is published in the newspaper. You will be notified in writing if a public hearing is scheduled. A decision on issuing a final permit-to-install will be made after consideration of comments received and oral testimony if a public hearing is conducted. Any permit fee that will be due upon issuance of a final Permit-to-Install is indicated in the Authorization section. Please do not submit any payment now. If you have any questions, please contact Ohio EPA DAPC, Northwest District Office at (419)352-8461.

Sincerely,

Michael E. Hopkins, P.E.
 Assistant Chief, Permitting Section, DAPC

Cc: U.S. EPA Region 5 -Via E-Mail Notification
 Ohio EPA-NWDO; Michigan; Indiana

PUBLIC NOTICE

The following matters are the subject of this public notice by the Ohio Environmental Protection Agency. The complete public notice, including any additional instructions for submitting comments, requesting information, a public hearing, or filing an appeal may be obtained at: <http://epa.ohio.gov/actions.aspx> or Hearing Clerk, Ohio EPA, 50 W. Town St., Columbus, Ohio 43215. Ph: 614-644-2129 email: HClerk@epa.ohio.gov

Draft Air Pollution Permit-to-Install Initial Installation
GM Defiance Casting Operations

State Route 281 East., Defiance, OH 43512

ID#:P0120980

Date of Action: 8/31/2016

Permit Desc: Installation of a foundry sand reclamation system.

The permit and complete instructions for requesting information or submitting comments may be obtained at: <http://epa.ohio.gov/dapc/permitsonline.aspx> by entering the ID # or: Andrea Moore, Ohio EPA DAPC, Northwest District Office, 347 North Dunbridge Road, Bowling Green, OH 43402. Ph: (419)352-8461

Permit Strategy Write-Up

1. Check all that apply:

Synthetic Minor Determination

Netting Determination

2. Source Description:

GM Defiance Casting Operations (GM) in Defiance County is a manufacturer of automobile parts. GM is proposing to install a foundry sand reclamation system with the following new equipment:

- Screened sand transport for trucks and railcars with 9 tons per hour maximum capacity;
- Sand handling screener, bucket elevator, two ton hopper, two- four ton hoppers and two- five ton hoppers.
- Two sand reclamation units, each with a five tons per hour loading capacity, and each will have a six million Btu per hour natural gas burner for heating up the sand to remove volatile organic compounds, and one baghouse will serve as a common control device for particulate emissions from the two reclamation units;
- Two screened sand bins, each with a 50 tons storage capacity; and
- Reclaim sand bin, with a 20 tons storage capacity;

3. Facility Emissions and Attainment Status:

GM is a major Prevention of Significant Deterioration (PSD) facility for NO_x, VOC, CO, SO₂ and PM₁₀. Defiance County is classified as attainment for all pollutants.

4. Source Emissions:

The facility has requested federally enforceable restrictions on the sand throughput for each emissions unit to limit potential PM_{2.5} emissions to below the significance level of 10 tons per year for PSD. The table below summarizes the emission increases and decreases for the project based the installation/modification of emission units and the removal of emission units at the facility. The PM and PM₁₀ emissions are also shown in the table below for informational purposes, although emissions credits were not needed to stay below PSD significance levels for these two pollutants:

PROJECT EMISSION INCREASES/DECREASES

Table I

Operation. Property, and/or Equipment Description	Emissions Unit ID	Emissions Unit Project Status	PM	PM ₁₀	PM _{2.5}	SO ₂	NOx	VOC	CO
			(tpy)	(tpy)	(tpy)	(tpy)	(tpy)	(tpy)	(tpy)
Screened sand transport (truck and railcar)	F025	New Installation	0.34	0.34	0.34	0	0	0	0
Sand handling operations (sand screener, bucket elevator, 2-ton hopper, two 4-ton hoppers and two 5-ton hoppers)	F026	New Installation	3.00	3.00	3.00	0	0	0	0
Thermal sand reclaim unit #001 with natural gas fired fluidized bed chamber, 6 million Btu per hour maximum heat input and baghouse	P654	New Installation	3.57	3.57	3.57	0.03	2.63	3.50	2.63
Thermal sand reclaim unit #002 with natural gas fired fluidized bed chamber, 6 million Btu per hour maximum heat input and baghouse	P655	New Installation	3.57	3.57	3.57	0.03	2.63	3.50	2.63
50 ton screened sand bins (1 and 2) with bin vent filtration system	P656	New Installation	0.83	0.83	0.83	0	0	0	0
20 tons reclaim sand bin with bin vent filtration system	P657	New Installation	0.44	0.44	0.44	0	0	0	0
Project Emissions Increases			11.75	11.75	11.75	0.06	5.26	7.00	5.26
Total Emissions Decreases from Shut Down of Emissions Units (see Table II below)			0	1.83	1.83	0	0	0	0
Total Project Net Emissions Increases/Decreases			11.75	9.92	9.92	0.06	5.26	7.00	5.26
PSD Significant Emissions Threshold Levels			25	15	10	40	40	40	100

Table II (Emissions Decreases from Shutdown Emissions units)**

Emission UnitID	Name	PM (tpy)	PM10 (tpy)	PM2.5(tpy)	VOC(tpy)	SO2 (tpy)	N Ox (tpy)	CO (tpy)
P253	Plant 1 - No. 7 Blast Cabinet	1.30	1.23	1.23	0.00	0.00	0.00	0.00
P255	Plant 1 - Grinder north of No. 7 Blast Cabinet	0.63	0.60	0.60	0.00	0.00	0.00	0.00
Totals		1.93	1.83	1.83	0.00	0.00	0.00	0.00

*The emissions in the tables above represent the actual emissions from the removed emission units and the allowable emissions from the new/modified emission units.

**The 2-year averages are from 2006 through 2007 as selected for the 10-year period analyzed for 2006 through 2015.

5. Conclusion:

With the restrictions on sand throughput, and the removal of emission units P253 and P255, the net emissions increase from the installation of the emission units associated with this project will not trigger the PSD significance levels for PE, PM₁₀, PM_{2.5}, SO₂, VOC, CO and NO_x. Therefore, a PSD review is PE

6. Please provide additional notes or comments as necessary:

None

7. Total Permit Allowable Emissions Summary (for informational purposes only):

<u>Pollutant</u>	<u>Tons Per Year</u>
PE/PM ₁₀ /PM _{2.5}	11.75
NO _x	5.26
VOC	7.00
CO	5.26



DRAFT

**Division of Air Pollution Control
Permit-to-Install
for
GM Defiance Casting Operations**

Facility ID:	0320010001
Permit Number:	P0120980
Permit Type:	Initial Installation
Issued:	8/31/2016
Effective:	To be entered upon final issuance



Division of Air Pollution Control
Permit-to-Install
for
GM Defiance Casting Operations

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Draft Permit-to-Install
GM Defiance Casting Operations
Permit Number: P0120980
Facility ID: 0320010001
Effective Date: To be entered upon final issuance

Authorization

Facility ID: 0320010001
Facility Description: Foundry
Application Number(s): A0056117
Permit Number: P0120980
Permit Description: Installation of a foundry sand reclamation system
Permit Type: Initial Installation
Permit Fee: \$5,500.00 *DO NOT send payment at this time, subject to change before final issuance*
Issue Date: 8/31/2016
Effective Date: To be entered upon final issuance

This document constitutes issuance to:

GM Defiance Casting Operations
State Route 281 East
Defiance, OH 43512

of a Permit-to-Install for the emissions unit(s) identified on the following page.

Ohio Environmental Protection Agency (EPA) District Office or local air agency responsible for processing and administering your permit:

Ohio EPA DAPC, Northwest District Office
347 North Dunbridge Road
Bowling Green, OH 43402
(419)352-8461

The above named entity is hereby granted a Permit-to-Install for the emissions unit(s) listed in this section 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 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

Craig W. Butler
Director



Authorization (continued)

Permit Number: P0120980

Permit Description: Installation of a foundry sand reclamation system

Permits for the following Emissions Unit(s) or groups of Emissions Units are in this document as indicated below:

- | | |
|-----------------------------------|-------------------------------|
| Emissions Unit ID: | F025 |
| Company Equipment ID: | SSR Screened Sand Transport |
| Superseded Permit Number: | |
| General Permit Category and Type: | Not Applicable |
| Emissions Unit ID: | F026 |
| Company Equipment ID: | SSR Sand Handling |
| Superseded Permit Number: | |
| General Permit Category and Type: | Not Applicable |
| Emissions Unit ID: | P656 |
| Company Equipment ID: | SSR 50 Ton Screened Sand Bins |
| Superseded Permit Number: | |
| General Permit Category and Type: | Not Applicable |
| Emissions Unit ID: | P657 |
| Company Equipment ID: | SR 20 Ton Sand Bin |
| Superseded Permit Number: | |
| General Permit Category and Type: | Not Applicable |

Group Name: Sand Reclaim Units

Emissions Unit ID:	P654
Company Equipment ID:	SR-001
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	P655
Company Equipment ID:	SR-002
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable



Draft Permit-to-Install
GM Defiance Casting Operations
Permit Number: P0120980
Facility ID: 0320010001
Effective Date: To be entered upon final issuance

A. Standard Terms and Conditions

1. Federally Enforceable Standard Terms and Conditions

- a) All Standard Terms and Conditions are federally enforceable, with the exception of those listed below which are enforceable under State law only:
 - (1) Standard Term and Condition A.2.a), Severability Clause
 - (2) Standard Term and Condition A.3.c) through A. 3.e) General Requirements
 - (3) Standard Term and Condition A.6.c) and A. 6.d), Compliance Requirements
 - (4) Standard Term and Condition A.9., Reporting Requirements
 - (5) Standard Term and Condition A.10., Applicability
 - (6) Standard Term and Condition A.11.b) through A.11.e), Construction of New Source(s) and Authorization to Install
 - (7) Standard Term and Condition A.14., Public Disclosure
 - (8) Standard Term and Condition A.15., Additional Reporting Requirements When There Are No Deviations of Federally Enforceable Emission Limitations, Operational Restrictions, or Control Device Operating Parameter Limitations
 - (9) Standard Term and Condition A.16., Fees
 - (10) Standard Term and Condition A.17., Permit Transfers

2. Severability Clause

- a) 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.
- b) All terms and conditions designated in parts B and C of this permit are federally enforceable as a practical matter, if they are required under the Act, or any of 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. Terms and conditions in parts B and C of this permit shall not be federally enforceable and shall be enforceable under State law only, only if specifically identified in this permit as such.

3. General Requirements

- a) 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.

4. Monitoring and Related Record Keeping 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:
 - (1) The date, place (as defined in the permit), and time of sampling or measurements.
 - (2) The date(s) analyses were performed.
 - (3) The company or entity that performed the analyses.
 - (4) The analytical techniques or methods used.
 - (5) The results of such analyses.
 - (6) 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:
 - (1) Reports of any required monitoring and/or recordkeeping of federally enforceable information shall be submitted to the Ohio EPA DAPC, Northwest District Office.

- (2) 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 Ohio EPA DAPC, Northwest District Office. The written reports shall be submitted quarterly, by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. See A.15. below if no deviations occurred during the quarter.
 - (3) Written reports, which identify any deviations from the federally enforceable monitoring, recordkeeping, and reporting requirements contained in this permit shall be submitted to the Ohio EPA DAPC, Northwest District Office 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.
 - (4) This permit is for an emissions unit located at a Title V facility. 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.

5. Scheduled Maintenance/Malfunction Reporting

Any scheduled maintenance of air pollution control equipment shall be performed in accordance with paragraph (A) of OAC rule 3745-15-06. The malfunction, i.e., upset, of any emissions units or any associated air pollution control system(s) shall be reported to the Ohio EPA DAPC, Northwest District Office 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).

6. Compliance Requirements

- a) All applications, notifications or reports required by terms and conditions in this permit to be submitted or "reported in writing" are to be submitted to Ohio EPA through the Ohio EPA's eBusiness Center: Air Services web service ("Air Services"). Ohio EPA will accept hard copy submittals on an as-needed basis if the permittee cannot submit the required documents through the Ohio EPA eBusiness Center. In the event of an alternative hard copy submission in lieu of the eBusiness Center, the post-marked date or the date the document is delivered in person will be recognized as the date submitted. Electronic submission of applications, notifications or reports required to be submitted to Ohio EPA fulfills the requirement to submit the required information to the Director, the appropriate Ohio EPA District Office or contracted

local air agency, and/or any other individual or organization specifically identified as an additional recipient identified in this permit unless otherwise specified. Consistent with OAC rule 3745-15-03, the electronic signature date shall constitute the date that the required application, notification or report is considered to be "submitted". Any document requiring signature may be represented by entry of the personal identification number (PIN) by responsible official as part of the electronic submission process or by the scanned attestation document signed by the Authorized Representative that is attached to the electronically submitted written report.

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:
 - (1) 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.
 - (2) 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.
 - (3) Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit.
 - (4) 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 Ohio EPA DAPC, Northwest District Office 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:
 - (1) Dates for achieving the activities, milestones, or compliance required in any schedule of compliance, and dates when such activities, milestones, or compliance were achieved.
 - (2) An explanation of why any dates in any schedule of compliance were not or will not be met, and any preventive or corrective measures adopted.

7. Best Available Technology

As specified in OAC Rule 3745-31-05, new sources that must employ Best Available Technology (BAT) shall comply with the Applicable Emission Limitations/Control Measures identified as BAT for each subject emissions unit.

8. 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.

9. 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 Ohio EPA DAPC, Northwest District Office.
- 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 Ohio EPA DAPC, Northwest District Office. If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted quarterly, 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.)

10. 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) not exempt from the requirement to obtain a Permit-to-Install.

11. Construction of New Sources(s) and Authorization to Install

- a) 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 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.
- b) If applicable, authorization to install any new 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 has not entered into a binding contractual obligation to undertake and complete within a reasonable time a continuing program of installation. 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 permittee shows good cause for any such extension.

- c) The permittee may notify Ohio EPA of any emissions unit that is permanently shut down (i.e., the emissions unit has been physically removed from service or has been altered in such a way that it can no longer operate without a subsequent "modification" or "installation" as defined in OAC Chapter 3745-31) by submitting a certification from the authorized official that identifies the date on which the emissions unit was permanently shut down. Authorization to operate the affected emissions unit shall cease upon the date certified by the authorized official that the emissions unit was permanently shut down. At a minimum, notification of permanent shut down shall be made or confirmed by marking the affected emissions unit(s) as "permanently shut down" in "Air Services" along with the date the emissions unit(s) was permanently removed and/or disabled. Submitting the facility profile update electronically will constitute notifying the Director of the permanent shutdown of the affected emissions unit(s).
- d) The provisions of this permit shall cease to be enforceable for each affected emissions unit after the date on which an emissions unit is permanently shut down (i.e., emissions unit has been physically removed from service or has been altered in such a way that it can no longer operate without a subsequent "modification" or "installation" as defined in OAC Chapter 3745-31). All records relating to any permanently shutdown emissions unit, generated while the emissions unit was in operation, must be maintained in accordance with law. All reports required by this permit must be submitted for any period an affected emissions unit operated prior to permanent shut down. At a minimum, the permit requirements must be evaluated as part of the reporting requirements identified in this permit covering the last period the emissions unit operated.

Unless otherwise exempted, no emissions unit certified by the responsible official as being permanently shut down may resume operation without first applying for and obtaining a permit pursuant to OAC Chapter 3745-31 and OAC Chapter 3745-77 if the restarted operation is subject to one or more applicable requirements.

- e) The permittee shall comply with any residual requirements related to this permit, such as the requirement to submit a deviation report, air fee emission report, or other any reporting required by this permit for the period the operating provisions of this permit were enforceable, or as required by regulation or law. All reports shall be submitted in a form and manner prescribed by the Director. All records relating to this permit must be maintained in accordance with law.

12. Permit-To-Operate Application

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 operation of the proposed new or modified source(s) as authorized by this permit would be prohibited by the terms and conditions of an existing Title V permit, a Title V permit modification of such new or modified source(s) pursuant to OAC rule 3745-77-04(D) and OAC rule 3745-77-08(C)(3)(d) must be obtained before operating the source in a manner that would violate the existing Title V permit requirements.

13. Construction Compliance Certification

The applicant shall identify the following dates in the "Air Services" facility profile for each new emissions unit identified in this permit.

- a) Completion of initial installation date shall be entered upon completion of construction and prior to start-up.
- b) Commence operation after installation or latest modification date shall be entered within 90 days after commencing operation of the applicable emissions unit.

14. 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.

15. Additional Reporting Requirements When There Are No Deviations of Federally Enforceable Emission Limitations, Operational Restrictions, or Control Device Operating Parameter Limitations

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

16. 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 within thirty days of the issuance of the invoice.

17. Permit Transfers

Any transferee of this permit shall assume the responsibilities of the prior permit holder. The new owner must update and submit the ownership information via the "Owner/Contact Change" functionality in "Air Services" once the transfer is legally completed. The change must be submitted through "Air Services" within thirty days of the ownership transfer date.

18. 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.

19. Title IV Provisions

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.



Draft Permit-to-Install
GM Defiance Casting Operations
Permit Number: P0120980
Facility ID: 0320010001
Effective Date: To be entered upon final issuance

B. Facility-Wide Terms and Conditions



Draft Permit-to-Install
GM Defiance Casting Operations
Permit Number: P0120980
Facility ID: 0320010001

Effective Date: To be entered upon final issuance

1. All the following facility-wide terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only:
 - a) None.



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C. Emissions Unit Terms and Conditions



1. F025, SSR Screened Sand Transport

Operations, Property and/or Equipment Description:

SSR Screened Sand Transport (truck/railcar)

a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only.

(1) None.

b) Applicable Emissions Limitations and/or Control Requirements

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

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3) June 30, 2008	Fugitive particulate emissions (PE)/particulate matter less than 10 micron size (PM ₁₀)/particulate matter less than 2.5 micron size (PM _{2.5}) shall not exceed 0.34 ton per year, based upon a rolling, 12-month summation of the monthly emissions. See b)(2)b. and b)(2)d.
b.	OAC rule 3745-31-05(A)(3)(a)(ii) June 30, 2008	The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the PE/PM ₁₀ /PM _{2.5} emissions from this air contaminant source since the potential to emit is less than 10 tons/year taking into account the federally enforceable restriction in b)(1)c. below. See b)(2)c.
c.	OAC rule 3745-31-05(D)	Fugitive PE/PM ₁₀ /PM _{2.5} emissions shall not exceed 0.34 ton per year, based upon a rolling, 12-month summation of the monthly emissions. See b)(2)a. and b)(2)d.
d.	OAC rule 3745-17-07(B)	Visible fugitive particulate emissions shall not exceed 20% opacity as a three-minute average, except as provided by



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		rule.
e.	OAC rule 3745-17-08(B)(3)	See b)(2)e.

(2) Additional Terms and Conditions

- a. This permit establishes the following federally enforceable emission limitations for the purpose of limiting potential to emit (PTE) to avoid Prevention of Significant Deterioration (PSD) requirements. The federally enforceable emission limitations are based on the operational restrictions contained in c)(1) which require reasonable available control measures (RACM):
 - i. Fugitive PE/PM₁₀/PM_{2.5} emissions shall not exceed 0.34 ton per year, based upon a rolling, 12-month summation of the monthly emissions.
- b. This BAT emission limit applies until U.S. EPA approves Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption into the Ohio State Implementation Plan (SIP)).
- c. These requirements apply once U.S. EPA approves OAC paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) as part of the Ohio SIP.
- d. It is assumed that all particulate emissions are PM₁₀ and PM_{2.5}.
- e. 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 measures to ensure compliance:
 - i. Canopy over the loadout conveyor; and
 - ii. Use of sand with low silt content.

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

c) Operational Restrictions

- (1) The following operational restrictions have been included in this permit for the purpose of establishing federally enforceable requirements which limit PTE [See b)(2)a.]:
 - a. The maximum annual production rate shall not exceed 78,840 tons of sand loaded to truck and/or railcar, based upon a rolling, 12-month summation of the production rates.

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



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<u>Month</u>	<u>Maximum Allowable Cumulative Production (tons of sand)</u>
1-2	13,140
1-4	26,280
1-6	39,420
1-8	52,560
1-10	65,700
1-12	78,840

After the first 12 calendar months of operation or 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 production rates.

- b. The permittee shall operate the canopy over the loadout conveyor at all times when the emissions unit is in operation.

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall maintain monthly records of the following information:

- a. the production rate for each month, in tons of sand; and
- b. beginning after the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, the rolling, 12-month summation of the production rates.

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

- (2) 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 fugitive 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 location and color of the emissions;
- b. whether the emissions are representative of normal operations;
- c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
- d. the total duration of any visible emissions incident; and
- e. any corrective actions taken to minimize or eliminate the visible emissions.

*once during each normal calendar week

e) Reporting Requirements

- (1) The permittee shall submit quarterly deviation (excursion) reports, which identify all exceedances of the following:
 - a. all exceedances of the rolling, 12-month production rate limitation; and for the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, all exceedances of the maximum allowable cumulative production rate levels;
 - b. 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. any corrective actions taken to minimize or eliminate the visible emissions.

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

f) Testing Requirements

- (1) Compliance with the Emissions Limitations and/or Control Requirements specified in section b) of these terms and conditions shall be determined in accordance with the following methods:

a. Emission Limitation:

The maximum annual production rate shall not exceed 78,840 tons of sand loaded to truck and/or railcar, based upon a rolling, 12-month summation of the production rates.

Applicable Compliance Method:

Compliance with the annual emission limitation shall be demonstrated by the record keeping requirements specified in d)(1).

b. Emission Limitation:

Fugitive PE/PM₁₀/PM_{2.5} emissions shall not exceed 0.34 ton per year, based upon a rolling, 12-month summation of the monthly emissions

Applicable Compliance Method:

The annual emission limitation was developed by multiplying the *emission factor of 0.0087 lb/ton of sand by the annual sand throughput restriction of 78,840 tons per rolling 12-month period and dividing by 2,000 lbs/ton. Therefore, provided compliance is shown with the annual sand throughput restriction, compliance with the annual emission limitation shall also be demonstrated.

*The emission factor was developed by the following equation:



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$$\left[\frac{0.0013 \text{ lbs } PM_{2.5}^{(1)}}{\text{tons sand}} \div (1 - 0.85^{(2)}) \right]$$

Where:

⁽¹⁾ AP42 Table 11.19.1-1 (11/95) emission factor, controlled basis (scrubber)*

⁽²⁾ assumed control efficiency of scrubber = 85%, based on GM engineering estimate

*Since there is no scrubber used for this emissions unit, the emissions are conservatively estimated as uncontrolled.

c. Emission Limitation:

Visible fugitive particulate emissions shall not exceed 20% opacity as a three-minute average, except as provided by rule.

Applicable Compliance Method:

If required, compliance with the visible emission limitation shall be demonstrated in accordance OAC rule 3745-17-03(B)(3).

g) **Miscellaneous Requirements**

(1) None.

2. F026, SSR Sand Handling

Operations, Property and/or Equipment Description:

SSR Sand Handling Operations (Sand Screener, Bucket Elevator, 2-ton Hopper, Two 4-ton Hoppers and Two 5-ton Hoppers)

- a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only.
 - (1) None.
- b) Applicable Emissions Limitations and/or Control Requirements
 - (1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3) June 30, 2008	Fugitive particulate emissions (PE)/particulate matter less than 10 micron size (PM ₁₀)/particulate matter less than 2.5 micron size (PM _{2.5}) shall not exceed 3.0 tons per year, based upon a rolling, 12-month summation of the monthly emissions. See b)(2)b. and b)(2)d.
b.	OAC rule 3745-31-05(A)(3)(a)(ii) June 30, 2008	The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the PE/PM ₁₀ /PM _{2.5} emissions from this air contaminant source since the potential to emit is less than 10 tons/year taking into account the federally enforceable restriction in b)(1)c. below. See b)(2)c.
c.	OAC rule 3745-31-05(D)	Fugitive PE/PM ₁₀ /PM _{2.5} emissions shall not exceed 3.0 tons per year, based upon a rolling, 12-month summation of the monthly emissions. See b)(2)a. and b)(2)d.
d.	OAC rule 3745-17-07(B)	Visible fugitive particulate emissions shall not exceed 20% opacity as a three-



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		minute average, except as provided by rule.
e.	OAC rule 3745-17-08(B)(3)	See b)(2)e.

(2) Additional Terms and Conditions

- a. This permit establishes the following federally enforceable emission limitations for the purpose of limiting potential to emit (PTE) to avoid Prevention of Significant Deterioration (PSD) requirements. The federally enforceable emission limitations are based on the operational restrictions contained in c)(1) which require reasonable available control measures (RACM):
 - i. Fugitive PE/PM₁₀/PM_{2.5} emissions shall not exceed 3.0 tons per year, based upon a rolling, 12-month summation of the monthly emissions.
- b. This BAT emission limit applies until U.S. EPA approves Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption into the Ohio State Implementation Plan (SIP)).
- c. These requirements apply once U.S. EPA approves OAC paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) as part of the Ohio SIP.
- d. It is assumed that all particulate emissions are PM₁₀ and PM_{2.5}.
- e. 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 measures to ensure compliance:
 - i. Use of exhaust filtration system and bin vent for sand transport; and
 - ii. Use of sand with low silt content.

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

c) Operational Restrictions

- (1) The following operational restrictions have been included in this permit for the purpose of establishing federally enforceable requirements which limit PTE [See b)(2)a.]:
 - a. The maximum annual production rate shall not exceed 184,836 tons of sand throughput for the sand screener, based upon a rolling, 12-month summation of the production rates.



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To ensure enforceability during the first 12 calendar months of operation or 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</u>	<u>Maximum Allowable Cumulative Production (tons of sand)</u>
1-2	30,806
1-4	61,612
1-6	92,418
1-8	123,224
1-10	154,030
1-12	184,836

After the first 12 calendar months of operation or 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 production rates.

- b. The maximum annual production rate shall not exceed 166,440 tons of sand throughput for the bucket elevator and the 2-ton sand hopper, combined, based upon a rolling, 12-month summation of the production rates.

To ensure enforceability during the first 12 calendar months of operation or 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</u>	<u>Maximum Allowable Cumulative Production (tons of sand)</u>
1-2	27,740
1-4	55,480
1-6	83,220
1-8	110,960
1-10	138,700
1-12	166,440

After the first 12 calendar months of operation or 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 production rates.

- c. The maximum annual production rate shall not exceed 87,600 tons of sand throughput for the 4-ton sand hoppers and 5-ton sand hoppers, combined, based upon a rolling, 12-month summation of the production rates.

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



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<u>Month</u>	Maximum Allowable Cumulative Production <u>(tons of sand)</u>
1-2	14,600
1-4	29,200
1-6	43,800
1-8	58,400
1-10	73,000
1-12	87,600

After the first 12 calendar months of operation or 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 production rates.

- d. The permittee shall operate the exhaust filtration system and bin vent for sand transport at all times when the emissions unit is in operation.

d) **Monitoring and/or Recordkeeping Requirements**

(1) The permittee shall maintain monthly records of the following information:

- a. the production rate for each month, in tons of sand throughput for the sand screener, bucket elevator and all sand hoppers; and
- b. beginning after the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, the rolling, 12-month summation of the production rates.

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

(2) 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 fugitive 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 location and color of the emissions;
- b. whether the emissions are representative of normal operations;
- c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
- d. the total duration of any visible emissions incident; and

- e. any corrective actions taken to minimize or eliminate the visible emissions.

*once during each normal calendar week

e) Reporting Requirements

- (1) The permittee shall submit quarterly deviation (excursion) reports, which identify all exceedances of the following:
 - a. all exceedances of the rolling, 12-month production rate limitations; and for the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, all exceedances of the maximum allowable cumulative production rate levels;
 - b. 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. any corrective actions taken to minimize or eliminate the visible emissions.

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

f) Testing Requirements

- (1) Compliance with the Emissions Limitations and/or Control Requirements specified in section b) of these terms and conditions shall be determined in accordance with the following methods:
 - a. Emission Limitation:

The maximum annual production rate shall not exceed 184,836 tons of sand throughput for the sand screener, based upon a rolling, 12-month summation of the production rates.

Applicable Compliance Method:

Compliance with the annual emission limitation shall be demonstrated by the record keeping requirements specified in d)(1).
 - b. Emission Limitation:

The maximum annual production rate shall not exceed 166,440 tons of sand throughput for the bucket elevator and the 2-ton hopper, combined, based upon a rolling, 12-month summation of the production rates.

Applicable Compliance Method:

Compliance with the annual emission limitation shall be demonstrated by the record keeping requirements specified in d)(1).



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c. Emission Limitation:

The maximum annual production rate shall not exceed 87,600 tons of sand throughput for the 4-ton sand hoppers and 5-ton sand hoppers, combined, based upon a rolling, 12-month summation of the production rates.

Applicable Compliance Method:

Compliance with the annual emission limitation shall be demonstrated by the record keeping requirements specified in d)(1).

d. Emission Limitation:

Fugitive PE/PM₁₀/PM_{2.5} emissions shall not exceed 3.0 tons per year, based upon a rolling, 12-month summation of the monthly emissions

Applicable Compliance Method:

The annual emission limitation was developed by the following equation:

$$\frac{\left(0.0087 \frac{lb PM_{2.5}}{ton}\right)^{(1)} \times [(184,836)^{(2)} + (166,400 \times 2)^{(3)} + (87,600 \times 2)^{(4)}]}{2000 \frac{lbs}{ton}}$$

Where:

- (1) developed based on AP42 Table 11.19.1-1 (11/95) emission factor of 0.0013 lbs PM_{2.5}/ton sand divided by 0.15 for sand screening, bucket elevator and hoppers [The AP42 emission factor is a controlled number and this unit is uncontrolled; assumed control efficiency of 85%]
- (2) sand screening throughput restriction
- (3) bucket elevator and 2-ton hopper throughput restrictions
- (4) 4-ton hopper and 5-ton hopper throughput restrictions

Therefore, provided compliance is shown with the annual sand throughput restrictions, compliance with the annual emission limitation shall also be demonstrated.

e. Emission Limitation:

Visible fugitive particulate emissions shall not exceed 20% opacity as a three-minute average, except as provided by rule.

Applicable Compliance Method:

If required, compliance with the visible emission limitation shall be demonstrated in accordance OAC rule 3745-17-03(B)(3).

g) Miscellaneous Requirements



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(1) None.



3. P656, SSR 50 Ton Screened Sand Bins

Operations, Property and/or Equipment Description:

SSR 50 Ton Screened Sand Bins (1 and 2) with bin vent filtration system

a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only.

(1) None.

b) Applicable Emissions Limitations and/or Control Requirements

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

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3) June 30, 2008	Particulate emissions (PE)/particulate matter less than 10 micron size (PM ₁₀)/particulate matter less than 2.5 micron size (PM _{2.5}) shall not exceed 0.01 lb per ton of sand throughput. See b)(2)b. and b)(2)d.
b.	OAC rule 3745-31-05(A)(3)(a)(ii) June 30, 2008	The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the PE/PM ₁₀ /PM _{2.5} , emissions from this air contaminant source since the potential to emit is less than 10 tons/year taking into account the federally enforceable restriction in b)(1)c. below. See b)(2)c.
c.	OAC rule 3745-31-05(D)	PE/PM ₁₀ /PM _{2.5} emissions shall not exceed 0.01 lb per ton of sand throughput and 0.83 ton per rolling, 12-month period See b)(2)a. and b)(2)d.
d.	OAC rule 3745-17-07(A)	Visible particulate emissions from the bin vent stack associated with this source shall not exceed 20% opacity as a six-minute average, except as provided by rule.
e.	OAC rule 3745-17-11(B)	See b)(2)e.



(2) Additional Terms and Conditions

- a. This permit establishes the following federally enforceable emission limitations for the purpose of limiting potential to emit (PTE) to avoid Prevention of Significant Deterioration (PSD) requirements. The federally enforceable emission limitations are based on the operational restrictions contained in c)(1) which require control equipment:
 - i. PE/PM₁₀/PM_{2.5} emissions shall not exceed 0.01 lb per ton of sand throughput and 0.83 ton per rolling, 12-month period.
- b. This BAT emission limit applies until U.S. EPA approves Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption into the Ohio State Implementation Plan (SIP).
- c. These requirements apply once U.S. EPA approves OAC paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) as part of the Ohio SIP.
- d. It is assumed that all particulate emissions are PM₁₀ and PM_{2.5}.
- e. The particulate emissions limitation specified by this rule is less stringent than the particulate emissions limitation established by OAC rule 3745-31-05(D).

c) Operational Restrictions

(1) The following operational restrictions have been included in this permit for the purpose of establishing federally enforceable requirements which limit PTE [See b)(2)a.):

- a. The maximum annual production rate shall not exceed 166,440 tons of sand throughput, based upon a rolling, 12-month summation of the production rates.

To ensure enforceability during the first 12 calendar months of operation or 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</u>	Maximum Allowable Cumulative Production <u>(tons of sand)</u>
1-2	27,740
1-4	55,480
1-6	83,220
1-8	110,960
1-10	138,700
1-12	166,440

After the first 12 calendar months of operation or 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 production rates.

- b. The permittee shall operate the bin vent designed to meet 99.5 percent control efficiency at all times when the emissions unit is in operation.

d) **Monitoring and/or Recordkeeping Requirements**

- (1) The permittee shall maintain monthly records of the following information:

- a. the production rate for each month, in tons of sand throughput for the screened sand bins; and
- b. beginning after the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, the rolling, 12-month summation of the production rates.

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

- (2) The permittee shall perform daily checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the bin vent stacks 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 color of the emissions;
- b. whether the emissions are representative of normal operations;
- c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
- d. the total duration of any visible emissions incident; and
- e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emissions incident has occurred. The observer does not have to document the exact start and end times for the visible emissions incident under item (d) above or continue the daily check until the incident has ended. The observer may indicate that the visible emissions incident was continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.



e) Reporting Requirements

- (1) The permittee shall submit quarterly deviation (excursion) reports, which identify all exceedances of the following:
 - a. all exceedances of the rolling, 12-month production rate limitation; and for the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, all exceedances of the maximum allowable cumulative production rate levels;
 - b. all days during which any visible particulate emissions were observed from the bin vent stacks serving this emissions unit; and
 - c. any corrective actions taken to minimize or eliminate the visible particulate emissions.

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

f) Testing Requirements

- (1) Compliance with the Emissions Limitations and/or Control Requirements specified in section b) of these terms and conditions shall be determined in accordance with the following methods:

a. Emissions Limitation:

The maximum annual production rate shall not exceed 166,440 tons of sand throughput, based upon a rolling, 12-month summation of the production rates.

Applicable Compliance Method:

Compliance with the annual emission limitation shall be demonstrated by the record keeping requirements specified in d)(1).

b. Emissions Limitation:

PE/PM₁₀/PM_{2.5} shall not exceed 0.01 lb per ton of sand throughput

Applicable Compliance Method:

The emission limitation was developed by the following equation:

$$\left[\frac{2 \text{ lbs } PM_{2.5}^{(1)}}{\text{tons sand}} \times (1 - 0.995^{(2)}) \right]$$

Where:

⁽¹⁾ emission factor based on GM stack testing, uncontrolled basis
⁽²⁾ control efficiency of bin vent = 99.5%, based on GM engineering estimate



If required, compliance with the lb/ton emission limitation shall be demonstrated based on the results of emission testing conducted in accordance with Methods 1-4 of 40 CFR, Part 60, Appendix A, and Methods 201/201A and 202 of 40 CFR, Part 51, Appendix M or as amended. Alternative or equivalent methods can be used with the approval of the director.

c. Emissions Limitation:

PE/PM₁₀/PM_{2.5} emissions shall not exceed 0.83 ton per rolling, 12-month period

Applicable Compliance Method:

The annual emission limitation was developed by multiplying the company-supplied emission factor of 0.01 lb/ton of sand by the annual sand throughput restriction of 166,440 tons per rolling 12-month period and dividing by 2,000 lbs/ton. Therefore, provided compliance is shown with the annual sand throughput restriction, compliance with the annual emission limitation shall also be demonstrated.

d. Emissions Limitation:

Visible particulate emissions from the bin vent stack associated with this source shall not exceed 20% opacity as a six-minute average, except as provided by rule

Applicable Compliance Method:

If required, compliance with the stack visible particulate emissions limitation shall be determined through visible emissions observations performed in accordance with U.S. EPA Method 9.

g) Miscellaneous Requirements

- (1) None.

4. P657, SR 20 Ton Sand Bin

Operations, Property and/or Equipment Description:

SR 20 Ton Reclaim Sand Bin with bin vent filtration system

a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only.

(1) None.

b) Applicable Emissions Limitations and/or Control Requirements

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

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3) June 30, 2008	Particulate emissions (PE)/particulate matter less than 10 micron size (PM ₁₀)/particulate matter less than 2.5 micron size (PM _{2.5}) shall not exceed 0.01 lb per ton of sand throughput and 0.44 ton per rolling, 12-month period See b)(2)b. and b)(2)d.
b.	OAC rule 3745-31-05(A)(3)(a)(ii) June 30, 2008	The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the PE/PM ₁₀ /PM _{2.5} , emissions from this air contaminant source since the potential to emit is less than 10 tons/year taking into account the federally enforceable restriction in b)(1)c. below. See b)(2)c.
c.	OAC rule 3745-31-05(D)	PE/PM ₁₀ /PM _{2.5} emissions shall not exceed 0.01 lb per ton of sand throughput and 0.44 ton per rolling, 12-month period See b)(2)a. and b)(2)d.
d.	OAC rule 3745-17-07(A)	Visible particulate emissions from the bin vent stack associated with this source shall not exceed 20% opacity as a six-minute average, except as provided by rule.



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	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
e.	OAC rule 3745-17-11(B)	See b)(2)e.

(2) Additional Terms and Conditions

- a. This permit establishes the following federally enforceable emission limitations for the purpose of limiting potential to emit (PTE) to avoid Prevention of Significant Deterioration (PSD) requirements. The federally enforceable emission limitations are based on the operational restrictions contained in c)(1) which require control equipment:
 - i. PE/PM₁₀/PM_{2.5} emissions shall not exceed 0.01 lb per ton of sand throughput and 0.44 ton per rolling, 12-month period.
- b. This BAT emission limit applies until U.S. EPA approves Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption into the Ohio State Implementation Plan (SIP).
- c. These requirements apply once U.S. EPA approves OAC paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) as part of the Ohio SIP.
- d. It is assumed that all particulate emissions are PM₁₀ and PM_{2.5}.
- e. The particulate emissions limitation specified by this rule is less stringent than the particulate emissions limitation established by OAC rule 3745-31-05(D).

c) Operational Restrictions

(1) The following operational restrictions have been included in this permit for the purpose of establishing federally enforceable requirements which limit PTE [See b)(2)a.]:

- a. The maximum annual production rate shall not exceed 87,600 tons of sand throughput, based upon a rolling, 12-month summation of the production rates.

To ensure enforceability during the first 12 calendar months of operation or 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</u>	<u>Maximum Allowable Cumulative Production (tons of sand)</u>
1-2	14,600
1-4	29,200
1-6	43,800
1-8	58,400
1-10	73,000
1-12	87,600

After the first 12 calendar months of operation or 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 production rates.

- b. The permittee shall operate the bin vent designed to meet 99.5 percent control efficiency at all times when the emissions unit is in operation.
- d) **Monitoring and/or Recordkeeping Requirements**
- (1) The permittee shall maintain monthly records of the following information:
 - a. the production rate for each month, in tons of sand throughput for the reclaim sand bin; and
 - b. beginning after the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, the rolling, 12-month summation of the production rates.

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

- (2) The permittee shall perform daily checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the bin vent stack 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 color of the emissions;
 - b. whether the emissions are representative of normal operations;
 - c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
 - d. the total duration of any visible emissions incident; and
 - e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emissions incident has occurred. The observer does not have to document the exact start and end times for the visible emissions incident under item (d) above or continue the daily check until the incident has ended. The observer may indicate that the visible emissions incident was continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.



e) Reporting Requirements

- (1) The permittee shall submit quarterly deviation (excursion) reports, which identify all exceedances of the following:
 - a. all exceedances of the rolling, 12-month production rate limitation; and for the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, all exceedances of the maximum allowable cumulative production rate levels;
 - b. all days during which any visible particulate emissions were observed from the bin vent stack serving this emissions unit; and
 - c. any corrective actions taken to minimize or eliminate the visible particulate emissions.

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

f) Testing Requirements

- (1) Compliance with the Emissions Limitations and/or Control Requirements specified in section b) of these terms and conditions shall be determined in accordance with the following methods:

a. Emissions Limitation:

The maximum annual production rate shall not exceed 87,600 tons of sand throughput, based upon a rolling, 12-month summation of the production rates.

Applicable Compliance Method:

Compliance with the annual emission limitation shall be demonstrated by the record keeping requirements specified in d)(1).

b. Emissions Limitation:

PE/PM₁₀/PM_{2.5} shall not exceed 0.01 lb per ton of sand throughput

Applicable Compliance Method:

The emission limitation was developed by the following equation:

$$\left[\frac{2 \text{ lbs } PM_{2.5}^{(1)}}{\text{tons sand}} \times (1 - 0.995^{(2)}) \right]$$

Where:

⁽¹⁾ emission factor based on GM stack testing, uncontrolled basis
⁽²⁾ control efficiency of bin vent = 99.5%, based on GM engineering estimate



If required, compliance with the lb/ton emission limitation shall be demonstrated based on the results of emission testing conducted in accordance with Methods 1-4 of 40 CFR, Part 60, Appendix A, and Methods 201/201A and 202 of 40 CFR, Part 51, Appendix M or as amended. Alternative or equivalent methods can be used with the approval of the director.

c. Emissions Limitation:

PE/PM₁₀/PM_{2.5} emissions shall not exceed 0.44 ton per rolling, 12-month period

Applicable Compliance Method:

The annual emission limitation was developed by multiplying the company-supplied emission factor of 0.01 lb/ton of sand by the annual sand throughput restriction of 87,600 tons per rolling 12-month period and dividing by 2,000 lbs/ton. Therefore, provided compliance is shown with the annual sand throughput restriction, compliance with the annual emission limitation shall also be demonstrated.

d. Emissions Limitation:

Visible particulate emissions from the bin vent stack associated with this source shall not exceed 20% opacity as a six-minute average, except as provided by rule

Applicable Compliance Method:

If required, compliance with the stack visible particulate emissions limitation shall be determined through visible emissions observations performed in accordance with U.S. EPA Method 9.

g) Miscellaneous Requirements

(1) None.

5. Emissions Unit Group - Sand Reclaim Units: P654, P655

EU ID	Operations, Property and/or Equipment Description
P654	Thermal Sand Reclaim Unit #001 with natural gas fired fluidized bed chamber, 6 million Btu per hour maximum heat input and baghouse
P655	Thermal Sand Reclaim Unit #002 with natural gas fired fluidized bed chamber, 6 million Btu per hour maximum heat input and baghouse

- a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only:
 - (1) d)(4) through d)(7), and e)(3)
- b) Applicable Emissions Limitations and/or Control Requirements
 - (1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3) June 30, 2008	<p><u>Emissions from sand reclamation and natural gas combustion products, combined:</u></p> <p>Particulate emissions (PE)/particulate matter less than 10-micron size (PM₁₀)/particulate matter less than 2.5-micron size (PM_{2.5}) shall not exceed 0.163 lb per ton of sand throughput.</p> <p>Volatile organic compound (VOC) emissions shall not exceed 0.16 lb per ton of sand throughput.</p> <p><u>Emissions from natural gas combustion products only:</u></p> <p>Install a burner designed to meet:</p> <p>0.10 lb of nitrogen oxides (NOx) per million Btu of actual heat input; and</p> <p>0.10 lb of carbon monoxide (CO) per million Btu of actual heat input.</p>

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		See b)(2)b., b)(2)d. and b)(2)f.
b.	OAC rule 3745-31-05(A)(3)(a)(ii) June 30, 2008	The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the PE/PM ₁₀ /PM _{2.5} , NO _x , CO, VOC and sulfur dioxide (SO ₂) emissions from this air contaminant source since the potential to emit are each less than 10 tons/year taking into account the federally enforceable restriction in b)(1)c. below. See b)(2)c.
c.	OAC rule 3745-31-05(D)	<u>Emissions from sand reclamation and natural gas combustion products, combined:</u> PE/PM ₁₀ / PM _{2.5} emissions shall not exceed 0.163 lb per ton of sand throughput and 3.57 tons per rolling, 12-month period VOC emissions shall not exceed 0.16 lb per ton of sand throughput and 3.50 tons per rolling, 12-month period <u>Emissions from natural gas combustion products only:</u> NO _x emissions shall not exceed 0.10 lb per million Btu of actual heat input and 2.63 tons of NO _x /yr CO emissions shall not exceed 0.10 lb per million Btu of actual heat input and 2.63 tons of CO/yr See b)(2)a., b)(2)d. and b)(2)f.
d.	OAC rule 3745-17-07(A)	Visible particulate emissions from the baghouse stack associated with this source shall not exceed 20% opacity as a six-minute average, except as provided by rule.
e.	OAC rule 3745-17-11(B)	See b)(2)e.
f.	OAC rule 3745-114-01 ORC 3704.03(F)(4)	See d)(4) through d)(7) and e)(3)
g.	40 CFR, Part 63, Subpart UUU	Each permittee of any affected facility that



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	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
	40 CFR 60.732(a) 40 CFR 60.736	<p>is subject to the requirements of this subpart shall comply with the emission limitations set forth in this section on and after the date on which the initial performance test required by 40 CFR 60.8 is completed, but not later than 180 days after the initial startup, whichever date comes first. No emissions shall be discharged into the atmosphere from any affected facility that contains particulate matter in excess of 0.057 g/dscm (0.025 gr/dscf).</p> <p>See b)(2)g., b)(2)h. and f)(2)</p>

(2) Additional Terms and Conditions

- a. This permit establishes the following federally enforceable emission limitations for the purpose of limiting potential to emit (PTE) to avoid Prevention of Significant Deterioration (PSD) requirements. The federally enforceable emission limitations are based on the operational restrictions contained in c)(1) which require control equipment:
 - i. PE/PM₁₀/PM_{2.5} emissions shall not exceed 0.163 lb per ton of sand throughput and 3.57 tons per rolling, 12-month period;
 - ii. VOC emissions shall not exceed 0.16 lb per ton of sand throughput and 3.50 tons per rolling, 12-month period;
 - iii. NOx emissions shall not exceed 0.10 lb per million Btu of actual heat input and 2.63 tons of NOx/yr; and
 - i. CO emissions shall not exceed 0.10 lb per million Btu of actual heat input and 2.63 tons of CO/yr.
- b. This BAT emission limit applies until U.S. EPA approves Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption into the Ohio State Implementation Plan (SIP).
- c. These requirements apply once U.S. EPA approves OAC paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) as part of the Ohio SIP.
- d. It is assumed that all particulate emissions are PM₁₀ and PM_{2.5}.
- e. The particulate emissions limitation specified by this rule is less stringent than the particulate emissions limitation established by OAC rule 3745-31-05(D).



- f. The emissions of SO₂ from combustion of natural gas in this emissions unit are considered to be negligible.
- g. Pursuant to 40 CFR 60.731, emissions units P654 and P655 are considered a mineral processing plant, since industrial sand is processed through each thermal Sand Reclaim Unit and fluidized bed chamber. Therefore, the less stringent particulate emissions limitation in 40 CFR 60.732(a) is applicable for dryers installed in parallel, not in series.
- h. Pursuant to the U.S. EPA Applicability Determination Index, Control No. 0600020 dated April 3, 2006, opacity monitoring requirements in 40 CFR 60.734 are not applicable since the emissions of particulate matter are less than 11 tons per year for each emissions unit P654 and P655.

c) Operational Restrictions

(1) The following operational restrictions have been included in this permit for the purpose of establishing federally enforceable requirements which limit PTE [See b)(2)a.]:

- a. The maximum annual production rate shall not exceed 43,800 tons of sand throughput for each thermal sand reclaim unit, based upon a rolling, 12-month summation of the production rates.

To ensure enforceability during the first 12 calendar months of operation or 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</u>	Maximum Allowable Cumulative Production <u>(tons of sand)</u>
1-2	7,300
1-4	14,600
1-6	21,900
1-8	29,200
1-10	36,500
1-12	43,800

After the first 12 calendar months of operation or 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 production rates.

- b. The permittee shall operate the baghouse designed to meet 98 percent control efficiency at all times when the emissions unit is in operation.
- c. The permittee shall operate the fluidized bed chamber at all times when the emissions unit is in operation.
- d. The permittee shall burn only natural gas in this emissions unit.

d) Monitoring and/or Recordkeeping Requirements

(1) The permittee shall maintain monthly records of the following information:

- a. the production rate for each month, in tons of sand throughput for each thermal sand reclaim unit; and
- b. beginning after the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, the rolling, 12-month summation of the production rates.

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

(2) The permittee shall perform daily checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the baghouse stack 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 color of the emissions;
- b. whether the emissions are representative of normal operations;
- c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
- d. the total duration of any visible emissions incident; and
- e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emissions incident has occurred. The observer does not have to document the exact start and end times for the visible emissions incident under item (d) above or continue the daily check until the incident has ended. The observer may indicate that the visible emissions incident was continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

(3) For each day during which the permittee burns a fuel other than natural gas, the permittee shall maintain a record of the type and quantity of fuel burned in this emissions unit.

(4) The permit-to-install (PTI) application for this/these emissions unit(s), P654 and P655, was evaluated based on the actual materials and the design parameters of the emissions unit's(s') exhaust system, as specified by the permittee. The "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 SCREEN3, 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 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):

$$TLV/10 \times 8/X \times 5/Y = 4 TLV/XY = MAGLC$$

- 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):
 - i. Toxic Contaminant: Cresol (all isomers)
 TLV (mg/m3): 22.115
 Maximum Hourly Emission Rate (lbs/hr): 0.335
 Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 3.44
 MAGLC (ug/m3): 526.55
 - ii. Toxic Contaminant: Phenol
 TLV (mg/m3): 19.245

Maximum Hourly Emission Rate (lbs/hr): 0.382
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 3.92
MAGLC (ug/m3): 458.21

The permittee, has demonstrated that emissions of Cresol (all isomers) and Phenol, from emissions unit(s) P654 and P655, 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 air contaminant in accordance with the "Toxic Air Contaminant Statute", ORC 3704.03(F).

- (5) 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 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 "Toxic Air Contaminant Statute", ORC 3704.03(F), has been documented. If the change(s) meet(s) the definition of a "modification", the permittee shall apply for and obtain a final PTI prior to the change. The Director may consider any significant departure from the operations of the emissions unit, described in the permit application, as a modification that results in greater emissions than the emissions rate modeled to determine the ground level concentration; and he/she may require the permittee to submit a permit application for the increased emissions.

- (6) The permittee shall collect, record, and retain the following information for each toxic evaluation conducted to determine compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F):
- 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 the "Toxic Air Contaminant Statute", 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 the "Toxic Air Contaminant Statute", 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 the "Toxic Air Contaminant Statute", 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.
- (7) 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 the "Toxic Air Contaminant Statute", 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.
- e) Reporting Requirements
- (1) The permittee shall submit quarterly deviation (excursion) reports, which identify all exceedances of the following:
 - a. all exceedances of the rolling, 12-month production rate limitation; and for the first 12 calendar months of operation or the first 12 calendar months following the issuance of this permit, all exceedances of the maximum allowable cumulative production rate levels;
 - b. all days during which any visible particulate emissions were observed from the baghouse stack serving this emissions unit; and
 - c. any corrective actions taken to minimize or eliminate the visible particulate emissions.

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

- (2) The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than natural gas was burned in this emissions unit. Each report shall be submitted within 30 days after the deviation occurs.
- (3) The permittee shall submit annual reports that include any changes to any parameter or value used in the dispersion model used to demonstrate compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), through the predicted 1-hour maximum concentration. The report should include:
 - a. the original model input;



- b. the updated model input;
- c. the reason for the change(s) to the input parameter(s); and
- d. a summary of the results of the updated modeling, including the input changes; and
- e. a statement that the model results indicate that the 1-hour maximum ground-level concentration is less than 80% of the MAGLC.

If no changes to the emissions, emissions unit(s), or the exhaust stack have been made during the reporting period, then the report shall include a statement to that effect. This report shall be postmarked or delivered no later than January 31 following the end of each calendar year.

f) **Testing Requirements**

(1) Compliance with the Emissions Limitations and/or Control Requirements specified in section b) of these terms and conditions shall be determined in accordance with the following methods:

a. Emissions Limitation:

The maximum annual production rate shall not exceed 43,800 tons of sand throughput for each thermal sand reclaim unit, based upon a rolling, 12-month summation of the production rates.

Applicable Compliance Method:

Compliance with the annual emission limitation shall be demonstrated by the record keeping requirements specified in d)(1).

b. Emissions Limitation:

PE/PM₁₀/PM_{2.5} emissions shall not exceed 0.163 lb per ton of sand throughput

Applicable Compliance Method:

The lb/ton emission limitation was developed by the summation of emissions from sand reclamation and natural gas combustion. The emission limitation was calculated as follows:

$$\left[\frac{7.7 \text{ lbs } PM_{2.5}^{(1)}}{\text{tons sand}} \times (1 - 0.98^{(2)}) \right] + \left[\frac{\left(7.6 \text{ lbs } \frac{PM_{2.5}}{\text{mmscf}} \right)^{(3)} \left(6 \frac{\text{mmBtu}}{\text{hr}} \right)^{(4)}}{\left(1000 \frac{\text{BTU}}{\text{scf}} \right)^{(5)} \left(5 \text{ tons } \frac{\text{sand}}{\text{hr}} \right)^{(6)}} \right]$$

Where:

(1) emission factor based on GM stack testing, uncontrolled basis
 (2) control efficiency of baghouse = 98%, based on GM stack testing

- (3) emission factor based on AP-42, Table 1.4-2
- (4) maximum heat input of natural gas burner
- (5) heat content of natural gas
- (6) maximum hourly sand throughput

If required, compliance with the lb/ton emission limitation shall be demonstrated based on the results of emission testing conducted in accordance with Methods 1-4 of 40 CFR, Part 60, Appendix A, and Methods 201/201A and 202 of 40 CFR, Part 51, Appendix M or as amended. Alternative or equivalent methods can be used with the approval of the director.

c. Emissions Limitation:

PE/PM₁₀/PM_{2.5} emissions shall not exceed 3.57 tons per rolling, 12-month period

Applicable Compliance Method:

The annual emission limitation was developed by multiplying the company-supplied emission factor of 0.163 lb/ton of sand by the annual sand throughput restriction of 43,800 tons per rolling 12-month period and dividing by 2,000 lbs/ton. Therefore, provided compliance is shown with the annual sand throughput restriction, compliance with the annual emission limitation shall also be demonstrated.

d. Emissions Limitation:

VOC emissions shall not exceed 0.16 lb per ton of sand throughput

Applicable Compliance Method:

The lb/ton emission limitation was developed by the summation of emissions from sand reclamation and natural gas combustion. The emission limitation was calculated as follows:

$$\left[\frac{3 \text{ lbs VOC}^{(1)}}{\text{tons sand}} \times (1 - 0.95^{(2)}) \right] + \left[\frac{\left(6 \text{ lbs} \frac{\text{VOC}}{\text{mmscf}} \right)^{(3)} \left(6 \frac{\text{mmBtu}}{\text{hr}} \right)^{(4)}}{\left(1000 \frac{\text{BTU}}{\text{scf}} \right)^{(5)} \left(5 \text{ tons} \frac{\text{sand}}{\text{hr}} \right)^{(6)}} \right]$$

Where:

- (1) emission factor based on GM stack testing, uncontrolled basis
- (2) control efficiency of fluidized bed chamber = 95%, based on GM stack testing
- (3) emission factor based on AP-42, Table 1.4-2
- (4) maximum heat input of natural gas burner
- (5) heat content of natural gas
- (6) maximum hourly sand throughput

If required, compliance with the lb/ton emission limitation shall be demonstrated based on the results of emission testing conducted in accordance with Methods

1-4 and 18, 25 or 25A, as appropriate of 40 CFR, Part 60, Appendix A. Alternative or equivalent methods can be used with the approval of the director.

e. Emissions Limitation:

VOC emissions shall not exceed 3.50 tons per rolling, 12-month period

Applicable Compliance Method:

The annual emission limitation was developed by multiplying the company-supplied emission factor of 0.16 lb/ton of sand by the annual sand throughput restriction of 43,800 tons per rolling 12-month period and dividing by 2,000 lbs/ton. Therefore, provided compliance is shown with the annual sand throughput restriction, compliance with the annual emission limitation shall also be demonstrated.

f. Emissions Limitation:

NOx emissions shall not exceed 0.10 lb per million Btu of actual heat input

Applicable Compliance Method:

The lb/million Btu emission limitation was developed by dividing the AP-42 emission factor of 100 lb of NOx per million standard cubic feet (scf) by the heat content of natural gas of 1,000 Btu per scf.

If required, compliance with the lb/million Btu emission limitation shall be demonstrated based on the results of emission testing conducted in accordance with Methods 1-4 and 7 of 40 CFR, Part 60, Appendix A. Alternative or equivalent methods can be used with the approval of the director.

g. Emissions Limitation:

NOx emissions shall not exceed 2.63 tons of NOx/yr

Applicable Compliance Method:

The annual emissions limitation was developed by multiplying the short term emissions limitation of 0.10 lb of NOx per million Btu of actual heat input by the maximum heat input of 6 million Btu per hour, then multiplying by the maximum hours of operation of 8,760 hrs/yr and dividing by 2,000 lbs/ton.

Therefore, provided compliance is shown with the short term NOx emissions limitation, compliance with the annual emission limitation shall also be demonstrated.

h. Emissions Limitation:

CO emissions shall not exceed 0.10 lb per million Btu of actual heat input



Applicable Compliance Method:

The lb per million Btu emissions limitation was developed by dividing the AP-42 emission factor of 100 lb of CO per million standard cubic feet (scf) by the heat content of natural gas of 1,000 Btu per scf.

If required, compliance with the lb/million Btu emission limitation shall be demonstrated based on the results of emission testing conducted in accordance with Methods 1-4 and 10 of 40 CFR, Part 60, Appendix A. Alternative or equivalent methods can be used with the approval of the director.

i. Emissions Limitation:

CO emissions shall not exceed 2.63 tons of NOx/yr

Applicable Compliance Method:

The annual emissions limitation was developed by multiplying the short term emissions limitation of 0.10 lb of CO per million Btu of actual heat input by the maximum heat input of 6 million Btu per hour, then multiplying by the maximum hours of operation of 8,760 hrs/yr and dividing by 2,000 lbs/ton.

Therefore, provided compliance is shown with the short term CO emissions limitation, compliance with the annual emission limitation shall also be demonstrated.

j. Emissions Limitation:

Visible particulate emissions from the baghouse stack associated with this source shall not exceed 20% opacity as a six-minute average, except as provided by rule

Applicable Compliance Method:

If required, compliance with the stack visible particulate emissions limitation shall be determined through visible emissions observations performed in accordance with U.S. EPA Method 9.

(2) In conducting the performance tests required in 40 CFR 60.8, the permittee shall use the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in 40 CFR 60.8(b).

a. The permittee shall determine compliance with the particulate matter standards in 40 CFR 60.732 as follows:

i. Method 5 shall be used to determine the particulate matter concentration. The sampling time and volume for each test run shall be at least 2 hours and 1.70 dscm.



Draft Permit-to-Install
GM Defiance Casting Operations

Permit Number: P0120980

Facility ID: 0320010001

Effective Date: To be entered upon final issuance

g) Miscellaneous Requirements

(1) None.