Ohio Environmental Protection Agency

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

10/21/2016

Certified Mail

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

Mr. Timothy Anglin
BASF Corporation
120 PINE STREET
Elyria, OH 44035

RE: DRAFT AIR POLLUTION PERMIT-TO-INSTALL
Facility ID: 0247040195
Permit Number: P0121268
Permit Type: OAC Chapter 3745-31 Modification
County: Lorain

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, The Chronicle Telegram. 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, Northeast District Office
2110 East Aurora Road
Twinsburg, OH 44087

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, Northeast District Office at (330)963-1200.

Sincerely,

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

Cc: U.S. EPA Region 5 *-Via E-Mail Notification*
Ohio EPA-NEDO; Canada

Permit Strategy Write-Up

1. Check all that apply:

   Synthetic Minor Determination

   Netting Determination

   _X_ Federally enforceable air pollution control equipment

2. Source Description:

   The facility makes inorganic metal catalysts and pigments. The SIC is 2819 Industrial Inorganic Chemicals and the NAIC is 325188.

3. Facility Emissions and Attainment Status:

   The facility is currently classified as a Title V source for potential nitrogen oxide(s) NO_X emissions. The facility is major for HAPs emissions, considering that most emissions units do not have federally enforceable restrictions to use air pollution control equipment. The facility is located in Elyria, in Lorain County, which is in non-attainment with the two shorter term $PM_{2.5}$ standards, and the 2008 8-hour O_3 standard.

4. Source Emissions (emissions units):

   This PTI, in part, is to increase the allowable throughput for the rotary calciners (P009, P010, P102, and P103) and to revise the calculation methodologies for P131. As a result, the total potential particulate emissions for the group of emissions units combined was calculated at 60.4 tons/yr. The PTE was calculated using the rule-based OAC 3745-17-11 for allowable particulate emissions. PM_{10} emissions, for the group, were calculated at 14 tons/yr. Total potential particulate emissions for the group of emissions units combined, using federally enforceable control equipment, is 31.1 tons/yr and for PM_{10}, it's 8.7 tons/yr. PM-HAPs emissions will decrease proportionally with the decrease in particulate emissions.

5. Conclusion:

   For the purpose of reducing the PTE for future major source applicability, the permittee's PTE for PM emission and for PM_{10} emissions will be reduced by 29.3 tons/yr and 5.3 tons/yr respectively from rule-based allowable emissions limits as stated above with the use of federally enforceable air pollution control equipment. PM-HAPs emissions will decrease as a result of the use of control equipment.

6. Please provide additional notes or comments as necessary:

   None

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

Pollutant	Tons Per Year
PM	31.1
PM_{10}	8.7

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 OAC Chapter 3745-31 Modification
BASF Corporation
120 PINE STREET,, Elyria, OH 44035
ID#:P0121268
Date of Action: 10/21/2016
Permit Desc:Chapter 31 modification permit to increase the allowable throughput for the rotary calciners (P009, P010, P102, and P103), process NOx-generating products in the copper calciners (P006 and P095) and revise calculation methodologies for P131..
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: Anthony Becker, Ohio EPA DAPC, Northeast District Office, 2110 East Aurora Road, Twinsburg, OH 44087. Ph: (330)963-1200

DRAFT

Division of Air Pollution Control
Permit-to-Install
for
BASF Corporation

Facility ID:	0247040195
Permit Number:	P0121268
Permit Type:	OAC Chapter 3745-31 Modification
Issued:	10/21/2016
Effective:	To be entered upon final issuance

Ohio Environmental Protection Agency

Division of Air Pollution Control
Permit-to-Install
for
BASF Corporation

Table of Contents

Authorization

Facility ID:	0247040195
Facility Description:	Manufacturer of Industrial Inorganic Catalysts
Application Number(s):	A0056213
Permit Number:	P0121268
Permit Description:	Chapter 31 modification permit to increase the allowable throughput for the rotary calciners (P009, P010, P102, and P103), process NOx-generating products in the copper calciners (P006 and P095) and revise calculation methodologies for P131.
Permit Type:	OAC Chapter 3745-31 Modification
Permit Fee:	$2,600.00*DO NOT send payment at this time, subject to change before final issuance*
Issue Date:	10/21/2016
Effective Date:	To be entered upon final issuance

This document constitutes issuance to:

BASF Corporation
120 PINE STREET
Elyria, OH 44035

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, Northeast District Office
2110 East Aurora Road
Twinsburg, OH 44087
(330)963-1200

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: P0121268
Permit Description: Chapter 31 modification permit to increase the allowable throughput for the rotary calciners (P009, P010, P102, and P103), process NOx-generating products in the copper calciners (P006 and P095) and revise calculation methodologies for P131.

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

Emissions Unit ID:	**P006**
Company Equipment ID:	COPPER CALCINER 1 (E-10)
Superseded Permit Number:	P0119072
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	**P009**
Company Equipment ID:	ROTARY CALCINER #4 (E-13-1)
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	**P010**
Company Equipment ID:	ROTARY CALCINER #1 (E-14)
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	**P095**
Company Equipment ID:	Copper Calciner #2 (E-101)
Superseded Permit Number:	P0119072
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	**P102**
Company Equipment ID:	ROTARY CALCINER #2
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	**P103**
Company Equipment ID:	ROTARY CALCINER #3
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	**P131**
Company Equipment ID:	Copper Tablet Precursor Process
Superseded Permit Number:	P0115631
General Permit Category and Type:	Not Applicable

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, Northeast District Office.

(2) Quarterly written reports of (i) any deviations from federally enforceable emissionlimitations, operationalrestrictions, andcontroldeviceoperatingparameterlimitations, 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, Northeast 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, andreportingrequirements contained in this permit shall be submitted to the Ohio EPA DAPC, Northeast 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 theOhio EPA DAPC, Northeast District Officein 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, Northeast 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, Northeast 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 theOhio EPA DAPC, Northeast District Office. If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted quarterly, 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 beforeoperating 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 enteredupon 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.

B. Facility-Wide Terms and Conditions

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.

C. Emissions Unit Terms and Conditions

1. P006, COPPER CALCINER 1 (E-10)

Operations, Property and/or Equipment Description:

Copper Calciner #1 in Building 26, equipped with a dust collector (P006-1), dust collector (P006-2), bin vent filter (P006-Feed) and bin filter (P006-Product) for controlling particulate emissions. Dust collector (P006-1) is used to control process exhaust emissions from the calciner. Dust collector (P006-2) is used to control particulate emissions from drumming and packaging.

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	**Source Design Characteristic:** For Raw Material Feed – Feed Receiver, install a bin vent filter (P006-Feed) that is designed to meet 0.03 gr (PM_{10})/dscf. For Product Discharge from Calciner – Product Receiver, install a bin vent filter (P006-Product) that is designed to meet 0.03 gr (PM_{10})/dscf. **Design Efficiency:** For the Calcining Process, install a dust collector (P006-1) with a design control efficiency of at least 99% control of PM_{10}. For Product Drumming, install a dust collector (P006-2) with a design control efficiency of at least 99% control of PM_{10}. PM_{10}: Emissions of particulate matter with an aerodynamic diameter less than or equal to 10 micrometers. See b)(2)a and b)(2)e.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
b.	OAC rule 3745-31-05(A)(3) June 30, 2008	Nitrogen oxides (NO_x) emissions from all process operations, excluding NO_x emissions from natural gas combustion, shall not exceed 0.33 ton per month averaged over a 12-month rolling period. See b)(2)a and b)(2)g.
c.	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 emissions of PM_{10} and NO_x from this air contaminant source since the potential to emit is less than 10 tons per year. See b)(2)b.
d.	OAC rule 3745-17-11(B)	Particulate emissions (PE) from all process operations combined, excluding PE from natural gas combustion, shall not exceed 2.13 lbs/hr. See b)(2)c.
e.	OAC rule 3745-17-10(B)	PE from the natural gas combustion process shall not exceed 0.020 lb/mmBtu of actual heat input. See b)(2)(d) and c)(1).
f.	OAC rule 3745-17-07(A)	Visible PE from any stack serving this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by the rule.

(2) Additional Terms and Conditions

a. This Best Available Technology (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).

b. 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.

c. The allowable, hourly PE rate is based on Table I in OAC rule 3745-17-11 when the maximum process weight rate is 750 lbs/hr.

d. The calciner is a natural gas-fired unit that indirectly transfers heat to materials in this manufacturing process.

e. In order to ensure the source continues to operate as designed; the permittee shall operate this emissions unit in accordance with the company's designed estimates or manufacturer's recommendations and shall follow the company's or

manufacturer's recommended maintenance, at the recommended intervals. The permittee shall keep a record of the maintenance on this emissions unit along with company's or manufacturer's recommendations.

f. PE from this emissions unit, excluding PE from natural gas combustion, shall be vented to the bin vent filter(s) and dust collector(s) at all times the emissions unit is in operation.

g. The ton per month emission limitation is based upon the emissions unit's potential to emit. Therefore, no monitoring, record keeping and reporting requirements are necessary to ensure compliance with this emission limitation.

c) Operational Restrictions

(1) The permittee shall burn only natural gas in this emissions unit.

d) Monitoring and/or Recordkeeping Requirements

(1) 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.

(2) The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible PE from each stack (dust collector (P006-1), dust collector (P006-2), bin vent filter (P006-Feed) and bin filter (P006-Product)) 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. identification of the stack(s);
b. the color of the emissions;
c. whether the emissions are representative of normal operations;
d. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
e. the total duration of any visible emissions incident; and
f. 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 weekly 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 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.

(2) The permittee shall submit semiannual written reports that identify:

a. all days during which any visible PE were observed from any stack (dust collector (P006-1), dust collector (P006-2), bin vent filter (P006-Feed) and bin filter (P006-Product)) serving this emissions unit; and

b. any corrective actions taken to minimize or eliminate the visible PE.

These reports shall be submitted to the Director (the Ohio EPA Northeast District Office) by January 31 and July 31 of each year and shall cover the previous 6-month period.

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:

PE from all process operations combined, excluding PE from natural gas combustion, shall not exceed 2.13 lbs/hr.

Applicable Compliance Method:

Compliance is based on the summation of calculated, hourly PE rates from the following equations:

Raw material feed – bin vent filter (P006-Feed):

E = (A)*(B)*(1/C)*(60)

where:

E = PE, in lbs/hr;
A = source design characteristic or most recent stack emission test, in gr/dscf;
B = maximum designed flow rate, in scfm;
C = 7,000 grains per pound; and
60 = 60 minutes per hour.

Product receiver – bin vent filter (P006-Product):

E = (A)*(B)*(1/C)*(60)

where:

E = PE, in lbs/hr;
A = source design characteristic or most recent stack emission test, in gr/dscf;
B = maximum designed flow rate of dust collector, or from the most recent stack test, in dscfm;
C = 7,000 grains per pound; and
60 = 60 minutes per hour.

Calcining exhaust – dust collector (P006-1):

E = A*B*(1 - (1.0)(0.99))

where:

E = PE, in lbs/hr;
A = uncontrolled mass emission rate, 120 lbs of PE/ton (AP-42 section 11.25, Fire Clay Processing, Table 11.25-7, January, 1995);
B = maximum process weight rate, 0.375 ton/hr;
1.0 = fractional estimated capture efficiency, as provided in application; and
0.99 = fractional estimated control efficiency, as provided in application.

Product drumming – dust collector (P006-2):

E = A*B*(1 - (0.95)(0.99))

where:

E = PE, in lbs/hr;
A = uncontrolled mass emission rate, 0.12 lb of PE/ton (AP-42 section 11.24, Metallic Minerals Processing, Table 11.24-2, August, 1982);
B = maximum process weight rate, 0.375 ton/hr;
0.95 = fractional estimated capture efficiency, as provided in application; and
0.99 = fractional estimated control efficiency, as provided in application.

If required, the permittee shall demonstrate compliance with this emission limitation through emission tests performed in accordance with the following methods:

For PE: Methods 1 through 5 of 40 CFR Part 60, Appendix A.

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

b. Emission Limitation:

PE from the natural gas combustion process shall not exceed 0.020 lb/mmBtu of actual heat input.

Applicable Compliance Method:

Compliance is based on the following equation:

Natural gas combustion:

E = A/B

where:

E = PE rate, in lb/mmBtu of actual heat input;
A = emission factor, which is 7.6 lbs PE/PM_{10} per million cubic foot of natural gas fuel flow per (AP-42 section 1.4, Natural Gas Combustion, Table 1.4-2, July, 1998); and
B = heat content of natural gas, which is 1020 Btu/cf.

c. Emission Limitation:

Visible PE from any stack serving this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by the rule.

Applicable Compliance Method:

If required, compliance with the stack visible PE limitation shall be demonstrated through visible emission observations performed in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Method 9.

d. Source Design Characteristic:

For Raw Material Feed – Feed Receiver, install a bin vent filter that is designed to meet 0.03 gr PM_{10}/dscf. The source design characteristic was established based on the information provided by the permittee in permit application #A0056213.

For Product Discharge from Calciner – Product Receiver, install a bin vent filter that is designed to meet 0.03 gr PM_{10}/dscf.The source design characteristic was established based on the information provided by the permittee in permit application #A0056213.

e. Design Efficiency:

For the Calcining Process, install a dust collector with a design control efficiency of at least 99% control of PM_{10}. The design control efficiency was established based on the information provided by the permittee in permit application #A0056213.

For Product Drumming, install a dust collector with a design control efficiency of at least 99% control of PM_{10}. The design control efficiency was established based on the information provided by the permittee in permit application #A0056213.

f. Emission Limitation:

NO_x emissions from all process operations, excluding NO_x emissions from natural gas combustion, shall not exceed 0.33 ton per month averaged over a 12-month rolling period.

Applicable Compliance Method:

The monthly average emission limitation was established by multiplying the maximum hourly NO_x process emission rate (0.89 lb/hr), as determined by methodologies provided in application A0056213, by 8760 hours/yr and then dividing by 12 months/yr and 2000 lbs/ton.

g) Miscellaneous Requirements

(1) None.

2. P009, ROTARY CALCINER #4 (E-13-1)

Operations, Property and/or Equipment Description:

Rotary Calciner #4 in Building 16, equipped with a dust collector (P009-1), dust collector (P009-3) and wet scrubber (Tri-Mer). Wet scrubber (Tri-Mer) is used to control particulate emissions and NO_x emissions from the process exhaust of the calciner. Wet scrubber (Tri-Mer) is use when producing batches having NO_x generating materials. Dust collector (P009-3) is used to control particulate emissions when producing non-NO_x generating materials. Dust collector (P009-3) is also used for product discharge and packaging. Dust collector (P009-1) is used for the feed hopper and material handling. [P009 is not currently connected to the dust collector (CTO/SCR collector) and the selective catalytic reduction (SCR) system for controlling particulate emissions and NO_x emissions, but may be connected for future use.]

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	**Design Efficiency:** For Raw Material Feed and Handling, install a dust collector (P009-1) with a design control efficiency of at least 99% control of PM_{10}. For the exhaust of the Calciner, Product Discharge and Handling, install a dust collector (P009-3) with a design control efficiency of at least 99% control of PM_{10}. For the exhaust of the Calciner in NO_x service, install a dust collector (CTO/SCR collector) with a design control efficiency of at least 99% control of PM_{10}. For the exhaust of the Calciner in NO_x service, install a wet scrubber (Tri-Mer) with a design control efficiency of at least 95% control of PM_{10}.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		PM_{10}: Emissions of particulate matter with an aerodynamic diameter less than or equal to 10 micrometers. See b)(2)a 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 emissions of PM_{10} from this air contaminant source since the potential to emit is less than 10 tons per year. See b)(2)b.
c.	OAC rule 3745-31-05(F)	See b)(2)c and c)(2).
d.	OAC rule 3745-17-11(B)	Particulate emissions (PE) from all process operations combined, excluding PE from natural gas combustion, shall not exceed 3.07 lbs/hr. See b)(2)d.
e.	OAC rule 3745-17-10(B)	PE from the natural gas combustion process shall not exceed 0.020 lb/mmBtu of actual heat input. See b)(2)e and c)(1).
f.	OAC rule 3745-17-07(A)	Visible PE from any stack serving this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by the rule.
g.	OAC rule 3745-110-03(R)(1)	Calciners P009, P010, P080, P102 and P103 shall not exceed the NO_x emission limitation of 1.86 lbs/hr (200.0 ppmvd), excluding NO_x emissions from natural gas combustion, when operating the selective catalytic reduction (SCR) system.
h.	OAC rule 3745-110-03(R)(2)	Calciners P009, P010, P080, P102 and P103 shall not exceed the NO_x emission limitation of 3.4 lbs/hr (250.0 ppmvd), excluding NO_x emissions from natural gas combustion, when operating the caustic/chemical Tri-Mer scrubber.

(2) Additional Terms and Conditions

a. This Best Available Technology (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).

b. 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.

c. This permit establishes the following legally and practically enforceable emission limitations. The legally and practically enforceable emission limitations are voluntary restrictions established under OAC rule 3745-31-05(F) and are based on the operational restrictions contained in c)(2) which requires the use of bin vent filters and dust collectors:

i. PE from all process operations combined, excluding PE from natural gas combustion, shall not exceed 1.71 lbs/hr; and

ii. PM_{10} emissions from all process operations combined, excluding PM_{10} from natural gas combustion, shall not exceed 0.43 lb/hr.

d. The allowable, hourly PE rate is based on Table I in OAC rule 3745-17-11 when the maximum process weight rate is 1300 lbs/hr.

e. The calciner is a natural gas-fired unit that indirectly transfers heat to materials in this manufacturing process.

f. In order to ensure the source continues to operate as designed; the permittee shall operate this emissions unit in accordance with the company's designed estimates or manufacturer's recommendations and shall follow the company's or manufacturer's recommended maintenance, at the recommended intervals. The permittee shall keep a record of the maintenance on this emissions unit along with company's or manufacturer's recommendations.

g. PE from this emissions unit, excluding PE from natural gas combustion, shall be vented to the dust collector (P009-1) and dust collector (P009-3) at all times the emissions unit is in operation and when processing batches having NO_x generating materials the exhaust gases from the calciner shall be vented to the wet scrubber (Tri-Mer).

If the permittee installs ductwork from the calciner to the dust collector (SCR collector) and SCR system, the PE shall be vented to the dust collector (SCR collector) at all times the emissions unit is in operation, when the permittee chooses the SCR system as the control option for processing batches having NO_x generating materials.

h. Whenever processing batches having NO_x generating materials, the exhaust gases from the calciner shall be vented to the wet scrubber (Tri-Mer) at all times the emissions unit is in operation.

If the permittee installs ductwork from the calciner to the SCR system, the exhaust gases from the calciner shall be vented to either the wet scrubber (Tri-Mer) or the SCR system at all times the emissions unit is in operation whenever processing batches having NO_x generating materials.

The following terms will be in effect at the time ductwork is installed from the calciner to the SCR system and exhaust gases from the calciner are controlled by the SCR system when processing batches having NO_x generating materials: b)(2)i, b)(2)j, d)(7)a, d)(9), d)(10), e)(5) and f)(1)d.

i. Each continuous NO_x monitoring system shall be certified to meet the requirements of 40 CFR Part 60, Appendix B, Performance Specifications 2 and 6. At least 45 days before commencing certification testing of the continuous NO_x monitoring system(s), the permittee shall develop and maintain a written quality assurance/quality control plan designed to ensure continuous valid and representative readings of NO_x emissions from the continuous monitor(s), in units of the applicable standard(s). The plan shall follow the requirements of 40 CFR Part 60, Appendix F. The quality assurance/quality control plan and a logbook dedicated to the continuous NO_x monitoring system must be kept on site and available for inspection during regular office hours.

The plan shall include the requirement to conduct quarterly cylinder gas audits or relative accuracy audits as required in 40 CFR Part 60; and to conduct relative accuracy test audits in units of the standard(s), in accordance with and at the frequencies required per 40 CFR Part 60.

j. The continuous emission monitoring system consists of all the equipment used to acquire data to provide a record of emissions and includes the sample extraction and transport hardware, sample conditioning hardware, analyzers, and data recording/processing hardware and software.

c) Operational Restrictions

(1) The permittee shall burn only natural gas in this emissions unit.

(2) The following operational restrictions have been included in this permit for the purpose of establishing the following legally and practically enforceable requirements: [See b)(2)c.]

a. For Raw Material Feed and Handling, design, install and operate capture and control equipment having at least a 99% capture efficiency and at least a 99% control efficiency (dust collector) for the capture and removal of PE/PM_{10} emissions from operations of the Raw Material Feed and Handling;

b. For the exhaust of the Calciner, Product Discharge and Handling, install and operate capture and control equipment having at least a 99% capture efficiency and at least a 99% control efficiency (dust collector) for the capture and removal of PE/PM_{10} emissions from operations of the Calciner, Product Discharge and Handling;

c. For the exhaust of the Calciner in NO_x service, design, install and operate capture and control equipment having at least a 100% capture efficiency and at least a 99% control efficiency (dust collector) for the capture and removal of PE/PM_{10} emissions from operations of the Calciner in NO_x service; and

d. For the exhaust of the Calciner in NO_x service, design, install and operate capture and control equipment having at least a 100% capture efficiency and at least a 95% control efficiency (scrubber) for the capture and removal of PE/PM_{10} emissions from operations of the Calciner in NO_x service.

d) Monitoring and/or Recordkeeping Requirements

(1) 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.

(2) The permittee shall maintain daily records of the following information for this emissions unit:

a. the number and identification of each batch produced having NO_x generating materials;

b. an operating log when batches having NO_x generating materials are processed in this emissions unit; and

c. a log of the downtime for each capture (collection) system, the wet scrubber (Tri-Mer), SCR system and the associated monitoring equipment for the NO_x control equipment when batches having NO_x generating materials are processed in this emissions unit.

(3) In order to maintain compliance with the applicable emission limitation(s) contained in this permit, the acceptable range(s) and/or limit(s) for the wet scrubber (Tri-Mer) that shall be maintained in order to demonstrate compliance whenever a batch having NO_x generating materials is processed shall be as follows:

a. the acceptable range for the pressure drop across the first stage the wet scrubber (Tri-Mer) shall be between 0.05 to 3 inches of water;

b. the acceptable range for the pressure drop across the second stage the wet scrubber (Tri-Mer) shall be between 0.2 to 5 inches of water;

c. the acceptable range for the pressure drop across the third stage the wet scrubber (Tri-Mer) shall be between 0.2 to 6 inches of water;

d. the acceptable scrubber liquid flow rate to each stage of the wet scrubber (Tri-Mer) shall not be less than 50 gallons per minute; and

e. the acceptable pH of the scrubber liquid at each stage of the wet scrubber (Tri-Mer) shall not be less than 9.

(4) The permittee shall properly install, operate, and maintain equipment to continuously monitor the following control equipment parameters for the wet scrubber (Tri-Mer) during operation of this emission unit when processing batches having NO_x generating materials, including periods of startup and shutdown**:**

a. the pressure drop across each stage of the scrubber**,** in inches of water;

b. the scrubber liquid flow rate to each stage of the scrubber, in gallons per minute; and
c. the pH of the scrubber liquid at each stage of the scrubber.

The permittee shall record the pressure drop across each stage of the scrubber, the scrubber flow rate at each stage of the scrubber, and pH at each stage of the scrubber on a daily basis. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s), with any modifications deemed necessary by the permittee.

(5) Whenever the monitored value of the control equipment parameter(s) deviate(s) from the range(s) or limit(s) established in accordance with this permit for the wet scrubber (Tri-Mer), the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation:

a. the date and time the deviation began;
b. the magnitude of the deviation at that time;
c. the date the investigation was conducted;
d. the name(s) of the personnel who conducted the investigation; and
e. the findings and recommendations.

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

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

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

The range(s) or limit(s) on the control equipment parameter(s) (pressure drop, liquid flow rate and pH) are effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the Ohio EPA Northeast District Office. The permittee may request revisions to the permitted control equipment parameter range(s) or limit(s) based upon information obtained during future performance tests that demonstrate compliance with the allowable emission rate(s) of the controlled pollutant(s). In addition, approved revisions to the parameter range(s) and limit(s) will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of a minor permit modification.

(6) The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible PE from each stack (dust collector (P009-1), dust collector (P009-3) and when in NO_x service: wet scrubber (Tri-Mer) or dust collector (CTO/SCR collector)) 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. identification of the stack(s);
b. the color of the emissions;
c. whether the emissions are representative of normal operations;
d. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
e. the total duration of any visible emissions incident; and
f. 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 weekly 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.

(7) The permittee shall properly install, operate, and maintain equipment to continuously monitor the pressure drop, in inches of water, across each dust collector when the controlled emissions unit(s) is/are in operation, including periods of startup and shutdown. The permittee shall record the pressure drop across the dust collector on a weekly basis. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s), with any modifications deemed necessary by the permittee.

a. If connected to the SCR, in order to maintain compliance with the applicable emission limitation(s) contained in this permit, the acceptable range established for the pressure drop across the dust collector (CTO/SCR collector) is between 0.1 to 5 inches of water.

b. In order to maintain compliance with the applicable emission limitation(s) contained in this permit, the acceptable range established for the pressure drop across the dust collector (P009-1) is between 0.1 to 5 inches of water.

c. In order to maintain compliance with the applicable emission limitation(s) contained in this permit, the acceptable range established for the pressure drop across the dust collector (P009-3) is between 0.1 to 5 inches of water.

(8) Whenever the monitored value for the pressure drop deviates from the limit or range established in accordance with this permit for the dust collector (CTO/SCR collector), dust collector (P009-1) or dust collector (P009-3), the permittee shall promptly

investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation:

a. the date and time the deviation began;
b. the magnitude of the deviation at that time;
c. the date the investigation was conducted;
d. the name(s) of the personnel who conducted the investigation; and
e. the findings and recommendations.

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

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

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

This range or limit on the pressure drop across the dust collector is effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the Ohio EPA Northeast District Office. The permittee may request revisions to the permitted limit or range for the pressure drop based upon information obtained during future testing that demonstrate compliance with the allowable PE rate for the controlled emissions unit(s). In addition, approved revisions to the range or limit will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of a minor permit modification.

(9) For calciners P009, P010, P080, P092, P102 and P103, the permittee shall submit information detailing the proposed location of the sampling site in accordance with the siting requirements in 40 CFR Part 60, Appendix B, Performance Specification 2. The Ohio EPA, Central Office shall approve the proposed sampling site and certify that the continuous NO_x monitoring system meets the requirements of Performance Specifications 2 and 6. Once received, the letter(s)/document(s) of certification shall be maintained on-site and shall be made available to the Director (the Ohio EPA Northeast District Office) upon request.

(10) For calciners P009, P010, P080, P092, P102 and P103 when in NO_x service using the SCR system, the permittee shall operate and maintain equipment to continuously monitor and record NO_x emissions from the emissions unit(s)in units of the applicable

standard(s). The continuous monitoring and recording equipment shall comply with the requirements specified in 40 CFR Part 60.

The permittee shall maintain records of all data obtained by the continuous NO_x monitoring system including, but not limited to:

a. emissions of NO_x in parts per million for each cycle time of the analyzer, with no resolution less than one data point per minute required;

b. emissions of NO_x in units of the applicable standard(s) in the appropriate averaging period;

c. results of quarterly cylinder gas audits;

d. results of daily zero/span calibration checks and the magnitude of manual calibration adjustments;

e. results of required relative accuracy test audit(s), including results in units of the applicable standard(s);

f. hours of operation of the emissions unit, continuous NO_x monitoring system, and control equipment;

g. the date, time, and hours of operation of the emissions unit without the control equipment and/or the continuous NO_x monitoring system;

h. the date, time, and hours of operation of the emissions unit during any malfunction of the control equipment and/or the continuous NO_x monitoring system; and

i. the reason (if known) and the corrective actions taken (if any) for each such event in (g) and (h).

All valid data points generated and recorded by the continuous emission monitoring and data acquisition and handling system shall be used in the calculation of the pollutant concentration and/or emission rate over the appropriate averaging period.

e) Reporting Requirements

(1) 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.

(2) The permittee shall submit quarterly deviation (excursion) reports that identify the following:

a. any period of time (start time and date, and end time and date) when this emissions unit was processing a batch(es), having NO_x generating materials and the exhaust gases from the calciner were not vented to the wet scrubber (Tri-Mer);

b. each period of time (start time and date, and end time and date) when the pressure drop across any stage of the wet scrubber (Tri-Mer), the liquid flow rate, or the liquid pH at any stage of the scrubber was/were outside of the acceptable range(s) or limit(s);

c. each incident of deviation described in "a" or "b" (above) where a prompt investigation was not conducted;

d. each incident of deviation described in "a" or "b" where prompt corrective action, that would bring the emissions unit(s) into compliance and/or the control equipment parameter(s) into compliance with the acceptable range(s) or limit(s), was determined to be necessary and was not taken; and

e. each incident of deviation described in "a" or "b" where proper records were not maintained for the investigation and/or the corrective action(s).

The quarterly deviation (excursion) reports shall be submitted in accordance with the reporting requirements of the Standard Terms and Conditions of this permit.

(3) The permittee shall submit semiannual written reports that identify:

a. all days during which any visible PE were observed from any stack (dust collector (P009-1), dust collector (P009-3), wet scrubber (Tri-Mer) and dust collector (CTO/SCR collector)) serving this emissions unit; and

b. any corrective actions taken to minimize or eliminate the visible PE.

These reports shall be submitted to the Director (the Ohio EPA Northeast District Office) by January 31 and July 31 of each year and shall cover the previous 6-month period.

(4) The permittee shall submit quarterly deviation (excursion) reports that identify the following occurrences:

a. each period of time (start time and date, and end time and date) when the pressure drop across the dust collector(s) ((CTO/SCR collector), dust collector (P009-1) or dust collector (P009-3)) was outside of the acceptable range;

b. any period of time (start time and date, and end time and date) when the emissions unit(s) was/were in operation and the process emissions were not vented to the dust collector(s);

c. each incident of deviation described in “a” or “b” (above) where a prompt investigation was not conducted;

d. each incident of deviation described in “a” or “b” where prompt corrective action, that would bring the pressure drop into compliance with the acceptable range, was determined to be necessary and was not taken; and

e. each incident of deviation described in “a” or “b” where proper records were not maintained for the investigation and/or the corrective action(s), as identified in the monitoring and record keeping requirements of this permit.

The quarterly deviation (excursion) reports shall be submitted in accordance with the reporting requirements of the Standard Terms and Conditions of this permit.

(5) The permittee shall comply with the following quarterly reporting requirements for the calciners P009, P010, P080, P092, P102 and P103 when in NO_x service using the SCR system and the continuous NO_x monitoring system:

a. Pursuant to the monitoring, record keeping, and reporting requirements for continuous monitoring systems contained in 40 CFR 60.7 and 60.13(h) and the requirements established in this permit, the permittee shall submit reports within 30 days following the end of each calendar quarter to the Ohio EPA Northeast District Office documenting all instances of NO_x emissions in excess of any applicable limit specified in this permit.

The report shall document the date, commencement and completion times, duration, and magnitude of each exceedance, as well as the reason (if known) and the corrective actions taken (if any) for each exceedance and which calciner(s) was/were operating at the time of each exceedance. Excess emissions shall be reported in units of the applicable standard(s).

b. These quarterly reports shall be submitted by January 30, April 30, July 30, and October 30 of each year and shall include the following:

i. the facility name and address;

ii. the manufacturer and model number of the continuous NO_x and other associated monitors;

iii. a description of any change in the equipment that comprises the continuous emission monitoring system (CEMS), including any change to the hardware, changes to the software that may affect CEMS readings, and/or changes in the location of the CEMS sample probe;

iv. the excess emissions report (EER)*, i.e., a summary of any exceedances during the calendar quarter, as specified above, for calciners P009, P010, P080, P092, P102 and P103 when in NO_x service using the SCR system;

v. the total NO_x emissions for the calendar quarter (tons) from calciners P009, P010, P080, P092, P102 and P103 when in NO_x service using the SCR system;

vi. the total operating time (hours) when any calciner P009, P010, P080, P092, P102 and P103 operated when in NO_x service using the SCR system;

vii. the total operating time of the continuous NO_x monitoring system while any calciner P009, P010, P080, P092, P102 and P103 operated when in NO_x service using the SCR system;

viii. results and dates of quarterly cylinder gas audits;

ix. unless previously submitted, results and dates of the relative accuracy test audit(s), including results in units of the applicable standard(s), (during appropriate quarter(s));

x. unless previously submitted, the results of any relative accuracy test audit showing the continuous NO_x monitor out-of-control and the compliant results following any corrective actions;

xi. the date, time, and duration of any/each malfunction** of the continuous NO_x monitoring system, emissions unit(s), and/or control equipment;

xii. the date, time, and duration of any downtime** of the continuous NO_x monitoring system and/or control equipment while the emissions unit(s) was in operation; and

xiii. the reason (if known) and the corrective actions taken (if any) for each event in (b)(xi) and (xii).

Each report shall address the operations conducted and data obtained during the previous calendar quarter.

* where no excess emissions have occurred or the continuous monitoring system(s) has/have not been inoperative, repaired, or adjusted during the calendar quarter, such information shall be documented in the EER quarterly report

** each downtime and malfunction event shall be reported regardless of whether there is an exceedance of any applicable limit

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:

PE from all process operations combined, excluding PE from natural gas combustion, shall not exceed 3.07 lbs/hr.

PE from all process operations combined, excluding PE from natural gas combustion, shall not exceed 1.71 lbs/hr.

PM_{10} emissions from all process operations combined, excluding PM_{10} emissions from natural gas combustion, shall not exceed 0.43 lb/hr.

Applicable Compliance Method:

Compliance is based on the summation of calculated, hourly emission rates from the following equations for each pollutant:

Raw material feed and handling – dust collector (P009-1):

E = A*B*(1 - (0.99)(0.99))(2)

where:

E = PE or PM_{10} emissions, in lbs/hr;
A = uncontrolled mass emission rate, 0.12 lb of PE/ton, 0.06 lb of PM_{10}/ton (AP-42 section 11.24, Metallic Minerals Processing, Table 11.24-2, August, 1982);
B = maximum process weight rate, 0.65 ton/hr;
0.99 = fractional estimated capture efficiency, as provided in application;
0.99 = fractional estimated control efficiency, as provided in application; and
2 = number of transfer points.

Product discharge and packaging –dust collector (P009-3):

E = A*B*(1 - (0.99)(0.99))(2)

where:

E = PE or PM_{10} emissions, in lbs/hr;
A = uncontrolled mass emission rate, 0.12 lb of PE/ton, 0.06 lb of PM_{10}/ton (AP-42 section 11.24, Metallic Minerals Processing, Table 11.24-2, August, 1982);
B = maximum process weight rate, 0.65 tonhr;
0.99 = fractional estimated capture efficiency, as provided in application;
0.99 = fractional estimated control efficiency, as provided in application; and
2 = number of transfer points.

Calcining exhaust – Tri-Mer scrubber, dust collector (P009-3) or SCR unit and dust collector (CTO/SCR collector)
(least efficient of multiple control options):

E = A*B*(1 - (1.0)(0.95))

where:

E = PE or PM_{10} emissions, in lbs/hr;
A = uncontrolled mass emission rate, 52 lbs of PE/ton, 13 lbs of PM_{10}/ton (site specific emissions factor developed by the facility, 7/2016);
B = maximum process weight rate, 0.65 ton/hr;
1.0 = fractional estimated capture efficiency, as provided in application; and
0.95 = fractional estimated control efficiency, as provided in application.

If required, the permittee shall demonstrate compliance with this emission limitation through emission tests performed in accordance with the following methods:

for PE: Methods 1 through 5 of 40 CFR Part 60, Appendix A; and
for PM_{10}: Method 201 or 202A and 202 of 40 CFR Part 51, Appendix M.

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

b. Emission Limitation:

PE from the natural gas combustion process shall not exceed 0.020 lb/mmBtu of actual heat input.

Applicable Compliance Method:

Compliance is based on the following equation:

Natural gas combustion:

E = A/B

where:

E = PE rate, in lb/mmBtu of actual heat input;
A = emission factor, which is 7.6 lbs PE/PM_{10} per million cubic foot of natural gas fuel flow per (AP-42 section 1.4, Natural Gas Combustion, Table 1.4-2, July, 1998); and
B = heat content of natural gas, which is 1020 Btu/cf.

c. Emission Limitation:

Visible PE from any stack serving this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by the rule.

Applicable Compliance Method:

If required, compliance with the stack visible PE limitation shall be demonstrated through visible emission observations performed in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Method 9.

d. Testing requirements for continuous NO_x monitoring systems:

The permittee has one continuous NO_x monitoring system for monitoring emissions from the exhaust of the SCR system. The SCR system is used to control NO_x emissions from calciners P009, P010, P080, P092, P102 and P103. Not all calciners are currently connected by ductwork to the SCR, but may be connected in the future.

For calciners that are connected to the SCR system (P009, P010, P080, P092, P102 and/or P103), within 3-months after the issuance of the permit, the permittee shall conduct certification tests of the continuous NO_x monitoring system in units of the applicable standard(s), to demonstrate compliance with 40 CFR Part 60, Appendix B, Performance Specifications 2 and 6; and ORC section 3704.03(I).

Personnel from the Ohio EPA Central Office and Ohio EPA Northeast District Office shall be notified 30 days prior to initiation of the applicable tests and shall be permitted to examine equipment and witness the certification tests. Two copies of the test results shall be submitted to Ohio EPA, one copy to Ohio EPA Northeast District Office and one copy to Ohio EPA Central Office, and pursuant to OAC rule 3745-15-04, within 30 days after the test is completed.

Certification of the continuous NO_x monitoring system shall be granted upon determination by the Ohio EPA, Central Office that the system meets the requirements of 40 CFR Part 60, Appendix B, Performance Specifications 2 and 6; and ORC section 3704.03(I).

Ongoing compliance with the NO_x emission limitations contained in this permit, 40 CFR Part 60, and any other applicable standard(s) shall be demonstrated through the data collected as required in the monitoring and record keeping section of this permit and through demonstration of compliance with the quality assurance/quality control plan, which shall meet the testing and recertification requirements of 40 CFR Part 60.

e. Emission Limitation:

Calciners P009, P010, P080, P102 and P103 shall not exceed the NO_x emissionlimitation of 1.86 lbs/hr (200.0 ppmvd), excluding NO_x emissions from natural gas combustion, when operating the selective catalytic reduction (SCR) system.

Applicable Compliance Method:

Ongoing compliance with the NO_x emission limitation contained in this permit, 40 CFR Part 60 and any other applicable standard(s) shall be demonstrated through the data collected as required in the monitoring and record keeping section of this permit and through demonstration of compliance with the quality assurance/quality control plan, which shall meet the testing and recertification requirements of 40 CFR Part 60.

f. Emission Limitation:

Calciners P009, P010, P080, P102 and P103 shall not exceed the NO_x emission limitation of 3.4 lbs/hr (250.0 ppmvd), excluding NO_x emissions from natural gas combustion, when operating the caustic/chemical Tri-Mer scrubber.

Applicable Compliance Method:

If required, the permittee shall demonstrate compliance with this emission limitation through emission tests performed in accordance with the following methods:

for NO_x: Methods 1 through 4 and Method 7 or 7E of 40 CFR Part 60, Appendix A.

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

g. Design Efficiency:

For Raw Material Feed and Handling, install a dust collector (P009-1) with a design control efficiency of at least 99% control of PM_{10}. The design control efficiency was established based on the information provided by the permittee in permit application #A0056213.

For the exhaust of the Calciner, Product Discharge and Handling, install a dust collector (P009-3) with a design control efficiency of at least 99% control of PM_{10}. The design control efficiency was established based on the information provided by the permittee in permit application #A0056213.

For the exhaust of the Calciner in NO_x service, install a dust collector (CTO/SCR collector) with a design control efficiency of at least 99% control of PM_{10}. The design control efficiency was established based on the information provided by the permittee in permit application #A0056213.

For the exhaust of the Calciner in NO_x service, install a wet scrubber (Tri-Mer)with a design control efficiency of at least 95% control of PM_{10}. The design control efficiency was established based on the information provided by the permittee in permit application #A0056213.

g) Miscellaneous Requirements

(1) None.

3. P010, ROTARY CALCINER #1 (E-14)

Operations, Property and/or Equipment Description:

Rotary Calciner #1 in Building 31, equipped with a wet scrubber (Tri-Mer) and wet scrubber (P010-1/F-1). Wet scrubber (Tri-Mer) is used to control particulate emissions and NO_x emissions from the process exhaust of the calciner. Wet scrubber (Tri-Mer) is use when producing product batches containing NO_x generating materials. Wet scrubber (P010-1/F-1) is used to control particulate emissions from the process exhaust of the calciner when producing non-NO_x generating materials. Wet scrubber (P010-1/F-1) is also used to control particulate emissions from the feed hopper, feed material handling, product discharge, screening and packaging. [P010 is not currently connected to the dust collector (CTO/SCR collector) and the selective catalytic reduction (SCR) system for controlling particulate emissions and NO_x emissions, but may be connected for future use.]

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	**Design Efficiency:** For the exhaust of the Calciner, Raw Material Feed and Handling and Product Discharge and Handling, install a wet scrubber (P010-1/F-1) with a design control efficiency of at least 95% control of PM_{10}. For the exhaust of the Calciner in NO_x service, install a dust collector (CTO/SCR collector) with a design control efficiency of at least 99% control of PM_{10}. For the exhaust of the Calciner in NO_x service, install a wet scrubber (Tri-Mer) with a design control efficiency of at least 95% control of PM_{10}. PM_{10}: Emissions of particulate matter with

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		an aerodynamic diameter less than or equal to 10 micrometers. See b)(2)a 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 emissions of PM_{10} from this air contaminant source since the potential to emit is less than 10 tons per year. See b)(2)b.
c.	OAC rule 3745-31-05(F)	See b)(2)c and c)(2).
d.	OAC rule 3745-17-11(B)	Particulate emissions (PE) from all process operations combined, excluding PE from natural gas combustion, shall not exceed 3.07 lbs/hr. See b)(2)d.
e.	OAC rule 3745-17-10(B)	PE from the natural gas combustion process shall not exceed 0.020 lb/mmBtu of actual heat input. See b)(2)e and c)(1).
f.	OAC rule 3745-17-07(A)	Visible PE from any stack serving this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by the rule.
g.	OAC rule 3745-110-03(R)(1)	Calciners P009, P010, P080, P102 and P103 shall not exceed the NO_x emission limitation of 1.86 lbs/hr (200.0 ppmvd), excluding NO_x emissions from natural gas combustion, when operating the selective catalytic reduction (SCR) system.
h.	OAC rule 3745-110-03(R)(2)	Calciners P009, P010, P080, P102 and P103 shall not exceed the NO_x emission limitation of 3.4 lbs/hr (250.0 ppmvd), excluding NO_x emissions from natural gas combustion, when operating the caustic/chemical Tri-Mer scrubber.

(2) Additional Terms and Conditions

a. This Best Available Technology (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).

b. 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.

c. This permit establishes the following legally and practically enforceable emission limitations. The legally and practically enforceable emission limitations are voluntary restrictions established under OAC rule 3745-31-05(F) and are based on the operational restrictions contained in c)(2) which requires the use of bin vent filters and dust collectors:

i. PE from all process operations combined, excluding PE from natural gas combustion, shall not exceed 1.71 lbs/hr; and

ii. PM_{10} emissions from all process operations combined, excluding PM_{10} from natural gas combustion, shall not exceed 0.43 lb/hr.

d. The allowable, hourly PE rate is based on Table I in OAC rule 3745-17-11 when the maximum process weight rate is 1300 lbs/hr.

e. The calciner is a natural gas-fired unit that indirectly transfers heat to materials in this manufacturing process.

f. In order to ensure the source continues to operate as designed; the permittee shall operate this emissions unit in accordance with the company's designed estimates or manufacturer's recommendations and shall follow the company's or manufacturer's recommended maintenance, at the recommended intervals. The permittee shall keep a record of the maintenance on this emissions unit along with company's or manufacturer's recommendations.

g. PE from this emissions unit, excluding PE from natural gas combustion, shall be vented to the wet scrubber (P010-1/F-1) at all times the emissions unit is in operation and when processing batches having NO_x generating materials the exhaust gases from the calciner shall be vented to the wet scrubber (Tri-Mer).

If the permittee installs ductwork from the calciner to the dust collector (SCR collector) and SCR system, PE shall be vented to the dust collector (SCR collector) at all times the emissions unit is in operation, when the permittee chooses the SCR system as the control option for processing batches having NO_x generating materials.

h. Whenever processing batches having NO_x generating materials, the exhaust gases from the calciner shall be vented to the wet scrubber (Tri-Mer) at all times the emissions unit is in operation.

If the permittee installs ductwork from the calciner to the SCR system, the exhaust gases from the calciner shall be vented to either the wet scrubber (Tri-Mer) or the SCR system at all times the emissions unit is in operation whenever processing batches having NO_x generating materials.

The following terms will be in effect at the time ductwork is installed from the calciner to the SCR system and exhaust gases from the calciner are controlled by the SCR system when processing batches having NO_x generating materials: b)(2)i, b)(2)j, d)(9)a, d)(10), d)(11), d)(12), e)(4), e)(5) and f)(1)d.

i. Each continuous NO_x monitoring system shall be certified to meet the requirements of 40 CFR Part 60, Appendix B, Performance Specifications 2 and 6. At least 45 days before commencing certification testing of the continuous NO_x monitoring system(s), the permittee shall develop and maintain a written quality assurance/quality control plan designed to ensure continuous valid and representative readings of NO_x emissions from the continuous monitor(s), in units of the applicable standard(s). The plan shall follow the requirements of 40 CFR Part 60, Appendix F. The quality assurance/quality control plan and a logbook dedicated to the continuous NO_x monitoring system must be kept on site and available for inspection during regular office hours.

The plan shall include the requirement to conduct quarterly cylinder gas audits or relative accuracy audits as required in 40 CFR Part 60; and to conduct relative accuracy test audits in units of the standard(s), in accordance with and at the frequencies required per 40 CFR Part 60.

j. The continuous emission monitoring system consists of all the equipment used to acquire data to provide a record of emissions and includes the sample extraction and transport hardware, sample conditioning hardware, analyzers, and data recording/processing hardware and software.

c) Operational Restrictions

(1) The permittee shall burn only natural gas in this emissions unit.

(2) The following operational restrictions have been included in this permit for the purpose of establishing the following legally and practically enforceable requirements: [See b)(2)c.]

a. For the exhaust of the Calciner, Raw Material Feed and Handling and Product Discharge and Handling, design, install and operate capture and control equipment having at least a 100% capture efficiency and at least a 95% control efficiency (dust collector) for the capture and removal of PE/PM_{10} emissions from operations of the Calciner, Raw Material Feed and Handling and Product Discharge and Handling;

b. For the exhaust of the Calciner in NO_x service, install and operate capture and control equipment having at least a 100% capture efficiency and at least a 99% control efficiency (dust collector) for the capture and removal of PE/PM_{10} emissions from operations of the Calciner in NO_x service; and

c. For the exhaust of the Calciner in NO_x service, design, install and operate capture and control equipment having at least a 100% capture efficiency and at least a 95% control efficiency (scrubber) for the capture and removal of PE/PM_{10} emissions from operations of the Calciner in NO_x service.

d) Monitoring and/or Recordkeeping Requirements

(1) 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.

(2) The permittee shall maintain daily records of the following information for this emissions unit:

a. the number and identification of each batch produced having NO_x generating materials;

b. an operating log when batches having NO_x generating materials are processed in this emissions unit; and

c. a log of the downtime for each capture (collection) system, the wet scrubber (Tri-Mer), SCR system and the associated monitoring equipment for the NO_x control equipment when batches having NO_x generating materials are processed in this emissions unit.

(3) In order to maintain compliance with the applicable emission limitation(s) contained in this permit, the acceptable range(s) and/or limit(s) for the wet scrubber (Tri-Mer), that shall be maintained in order to demonstrate compliance whenever a batch having NO_x generating materials is processed shall be as follows:

a. the acceptable range for the pressure drop across the first stage the wet scrubber (Tri-Mer) shall be between 0.05 to 3 inches of water;

b. the acceptable range for the pressure drop across the second stage the wet scrubber (Tri-Mer) shall be between 0.2 to 5 inches of water;

c. the acceptable range for the pressure drop across the third stage the wet scrubber (Tri-Mer) shall be between 0.2 to 6 inches of water;

d. the acceptable scrubber liquid flow rate to each stage of the wet scrubber (Tri-Mer) shall not be less than 50 gallons per minute; and

e. the acceptable pH of the scrubber liquid at each stage of the wet scrubber (Tri-Mer) shall not be less than 9.

(4) The permittee shall properly install, operate, and maintain equipment to continuously monitor the following control equipment parameters for the wet scrubber (Tri-Mer) during operation of this emission unit when processing batches having NO_x generating materials, including periods of startup and shutdown:

a. the pressure drop across each stage of the scrubber, in inches of water;
b. the scrubber liquid flow rate to each stage of the scrubber, in gallons per minute; and
c. the pH of the scrubber liquid at each stage of the scrubber.

The permittee shall record the pressure drop across each stage of the scrubber, the scrubber flow rate at each stage of the scrubber, and pH at each stage of the scrubber on a daily basis. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s), with any modifications deemed necessary by the permittee.

(5) Whenever the monitored value of the control equipment parameter(s) deviate(s) from the range(s) or limit(s) established in accordance with this permit for the wet scrubber (Tri-Mer), the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation:

a. the date and time the deviation began;
b. the magnitude of the deviation at that time;
c. the date the investigation was conducted;
d. the name(s) of the personnel who conducted the investigation; and
e. the findings and recommendations.

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

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

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

The range(s) or limit(s) on the control equipment parameter(s) (pressure drop, liquid flow rate and pH) are effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the Ohio EPA Northeast District Office. The permittee may request revisions to the permitted control equipment parameter range(s) or limit(s) based upon information obtained during future performance tests that demonstrate compliance with the allowable emission rate(s) of the controlled pollutant(s). In addition, approved revisions to the parameter range(s) and limit(s) will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of a minor permit modification.

(6) In order to maintain compliance with the applicable emission limitation(s) contained in this permit, the acceptable range(s) and/or limit(s) for the wet scrubber (P010-1/F-1) that shall be maintained in order to demonstrate compliance when a product batch of non-NO_x generating materials is processed at this emissions unitand the scrubber is employed to control PE shall be as follows:

a. a pressure drop range of 0.1 to 7 inches of water across the packing of the wet scrubber (P010-1/F-1); and

b. the scrubber liquid flow rate of wet scrubber (P010-1/F-1) shall not be less than 25 gallons per minute.

(7) For the wet scrubber (P010-1/F-1), the permittee shall properly install, operate, and maintain equipment to continuously monitor the pressure drop across the scrubber (in inches of water column) and the scrubber liquid flow rate (in gallons per minute) when non-NO_x generating materials are processed at this emissions unit and the scrubber is employed to control PE, including periods of startup and shutdown. The permittee shall record the pressure drop across the scrubber and the scrubber flow rate on a daily basis. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s), with any modifications deemed necessary by the permittee.

Whenever the monitored value of the control equipment parameter(s) deviate(s) from the range or limit established in accordance with this permit, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation:

a. the date and time the deviation began;
b. the magnitude of the deviation at that time;
c. the date the investigation was conducted;
d. the name(s) of the personnel who conducted the investigation; and
e. the findings and recommendations.

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

f. a description of the corrective action;
g. the date corrective action was completed;
h. the date and time the deviation ended;
i. the total period of time (in minutes) during which there was a deviation;
j. the values of the control equipment parameter(s) immediately before and immediately after the corrective action(s) was/were implemented; and
k. the name(s) of the personnel who performed the work.

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

The range(s) or limit(s) on the control equipment parameter(s) are effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the Ohio EPA Northeast District Office. The permittee may request revisions to the permitted control equipment parameter range(s) or limit(s) based upon information obtained during future performance tests that demonstrate compliance with the allowable emission rate(s) of the controlled pollutant(s). In addition, approved revisions to the parameter range(s) and limit(s) will not constitute a relaxation of the monitoring

requirements of this permit and may be incorporated into this permit by means of a minor permit modification.

(8) The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible PE from each stack (wet scrubber (P010-1/F-1), and when in NO_x service: wet scrubber (Tri-Mer) or SCR system) 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. identification of the stack(s);
b. the color of the emissions;
c. whether the emissions are representative of normal operations;
d. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
e. the total duration of any visible emissions incident; and
f. 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 weekly 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.

(9) The permittee shall properly install, operate, and maintain equipment to continuously monitor the pressure drop, in inches of water, across each dust collector when the controlled emissions unit(s) is/are in operation, including periods of startup and shutdown. The permittee shall record the pressure drop across the dust collector on a weekly basis. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s), with any modifications deemed necessary by the permittee.

a. In order to maintain compliance with the applicable emission limitation(s) contained in this permit, the acceptable range established for the pressure drop across the dust collector (CTO/SCR collector) is between 0.1 to 5 inches of water.

(10) Whenever the monitored value for the pressure drop deviates from the limit or range established in accordance with this permit for dust collector (CTO/SCR collector), the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation:

a. the date and time the deviation began;
b. the magnitude of the deviation at that time;
c. the date the investigation was conducted;

d. the name(s) of the personnel who conducted the investigation; and
e. the findings and recommendations.

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

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

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

This range or limit on the pressure drop across the dust collector is effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the Ohio EPA Northeast District Office. The permittee may request revisions to the permitted limit or range for the pressure drop based upon information obtained during future testing that demonstrate compliance with the allowable PE rate for the controlled emissions unit(s). In addition, approved revisions to the range or limit will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of a minor permit modification.

(11) For calciners P009, P010, P080, P092, P102 and P103, the permittee shall submit information detailing the proposed location of the sampling site in accordance with the siting requirements in 40 CFR Part 60, Appendix B, Performance Specification 2. The Ohio EPA, Central Office shall approve the proposed sampling site and certify that the continuous NO_x monitoring system meets the requirements of Performance Specifications 2 and 6. Once received, the letter(s)/document(s) of certification shall be maintained on-site and shall be made available to the Director (the Ohio EPA Northeast District Office) upon request.

(12) For calciners P009, P010, P080, P092, P102 and P103 when in NOx service using the SCR system, the permittee shall operate and maintain equipment to continuously monitor and record NO_x emissions from the emissions unit(s)in units of the applicable standard(s). The continuous monitoring and recording equipment shall comply with the requirements specified in 40 CFR Part 60.

The permittee shall maintain records of all data obtained by the continuous NO_x monitoring system including, but not limited to:

a. emissions of NO_x in parts per million for each cycle time of the analyzer, with no resolution less than one data point per minute required;

b. emissions of NO_x in units of the applicable standard(s) in the appropriate averaging period;

c. results of quarterly cylinder gas audits;

d. results of daily zero/span calibration checks and the magnitude of manual calibration adjustments;

e. results of required relative accuracy test audit(s), including results in units of the applicable standard(s);

f. hours of operation of the emissions unit, continuous NO_x monitoring system, and control equipment;

g. the date, time, and hours of operation of the emissions unit without the control equipment and/or the continuous NO_x monitoring system;

h. the date, time, and hours of operation of the emissions unit during any malfunction of the control equipment and/or the continuous NO_x monitoring system; and

i. the reason (if known) and the corrective actions taken (if any) for each such event in (g) and (h).

All valid data points generated and recorded by the continuous emission monitoring and data acquisition and handling system shall be used in the calculation of the pollutant concentration and/or emission rate over the appropriate averaging period.

e) Reporting Requirements

(1) 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.

(2) The permittee shall submit quarterly deviation (excursion) reports that identify the following:

a. any period of time (start time and date, and end time and date) when this emissions unit was processing a batch(es), having NO_x generating materials and the exhaust gases from the calciner were not vented to the wet scrubber (Tri-Mer);

b. each period of time (start time and date, and end time and date) when the pressure drop across any stage of the wet scrubber (Tri-Mer), the liquid flow rate, or the liquid pH at any stage of the scrubber was/were outside of the acceptable range(s) or limit(s);

c. each incident of deviation described in "a" or "b" (above) where a prompt investigation was not conducted;

d. each incident of deviation described in "a" or "b" where prompt corrective action, that would bring the emissions unit(s) into compliance and/or the control equipment parameter(s) into compliance with the acceptable range(s) or limit(s), was determined to be necessary and was not taken; and

e. each incident of deviation described in "a" or "b" where proper records were not maintained for the investigation and/or the corrective action(s).

The quarterly deviation (excursion) reports shall be submitted in accordance with the reporting requirements of the Standard Terms and Conditions of this permit.

(3) The permittee shall submit semiannual written reports that identify:

a. all days during which any visible PE were observed from any stack (wet scrubber (P010-1/F-1), wet scrubber (Tri-Mer) and SCR system) serving this emissions unit; and

b. any corrective actions taken to minimize or eliminate the visible PE.

These reports shall be submitted to the Director (the Ohio EPA Northeast District Office) by January 31 and July 31 of each year and shall cover the previous 6-month period.

(4) The permittee shall submit quarterly deviation (excursion) reports that identify the following occurrences:

a. each period of time (start time and date, and end time and date) when the pressure drop across the dust collector(s) (CTO/SCR collector) was outside of the acceptable range;

b. any period of time (start time and date, and end time and date) when the emissions unit(s) was/were in operation and the process emissions were not vented to the dust collector(s);

c. each incident of deviation described in “a” or “b” (above) where a prompt investigation was not conducted;

d. each incident of deviation described in “a” or “b” where prompt corrective action, that would bring the pressure drop into compliance with the acceptable range, was determined to be necessary and was not taken; and

e. each incident of deviation described in “a” or “b” where proper records were not maintained for the investigation and/or the corrective action(s), as identified in the monitoring and recordkeeping requirements of this permit.

The quarterly deviation (excursion) reports shall be submitted in accordance with the reporting requirements of the Standard Terms and Conditions of this permit.

(5) The permittee shall comply with the following quarterly reporting requirements for the calciners P009, P010, P080, P092, P102 and P103 when in NO_x service using the SCR system and the continuous NO_x monitoring system:

a. Pursuant to the monitoring, record keeping, and reporting requirements for continuous monitoring systems contained in 40 CFR 60.7 and 60.13(h) and the requirements established in this permit, the permittee shall submit reports within 30 days following the end of each calendar quarter to the Ohio EPA Northeast District Office documenting all instances of NO_x emissions in excess of any applicable limit specified in this permit.

The report shall document the date, commencement and completion times, duration, and magnitude of each exceedance, as well as the reason (if known) and the corrective actions taken (if any) for each exceedance and which calciner(s) was/were operating at the time of each exceedance. Excess emissions shall be reported in units of the applicable standard(s).

b. These quarterly reports shall be submitted by January 30, April 30, July 30, and October 30 of each year and shall include the following:

i. the facility name and address;

ii. the manufacturer and model number of the continuous NO_x and other associated monitors;

iii. a description of any change in the equipment that comprises the continuous emission monitoring system (CEMS), including any change to the hardware, changes to the software that may affect CEMS readings, and/or changes in the location of the CEMS sample probe;

iv. the excess emissions report (EER)*, i.e., a summary of any exceedances during the calendar quarter, as specified above, for calciners P009, P010, P080, P092, P102 and P103 when in NO_x service using the SCR system;

v. the total NO_x emissions for the calendar quarter (tons) from calciners P009, P010, P080, P092, P102 and P103 when in NO_x service using the SCR system;

vi. the total operating time (hours) when any calciner P009, P010, P080, P092, P102 and P103 operated when in NO_x service using the SCR system;

vii. the total operating time of the continuous NO_x monitoring system while any calciner P009, P010, P080, P092, P102 and P103 operated when in NO_x service using the SCR system;

viii. results and dates of quarterly cylinder gas audits;

ix. unless previously submitted, results and dates of the relative accuracy test audit(s), including results in units of the applicable standard(s), (during appropriate quarter(s));

x. unless previously submitted, the results of any relative accuracy test audit showing the continuous NO_x monitor out-of-control and the compliant results following any corrective actions;

xi. the date, time, and duration of any/each malfunction** of the continuous NO_x monitoring system, emissions unit(s), and/or control equipment;

xii. the date, time, and duration of any downtime** of the continuous NO_x monitoring system and/or control equipment while the emissions unit(s) was in operation; and

xiii. the reason (if known) and the corrective actions taken (if any) for each event in (b)(xi) and (xii).

Each report shall address the operations conducted and data obtained during the previous calendar quarter.

* where no excess emissions have occurred or the continuous monitoring system(s) has/have not been inoperative, repaired, or adjusted during the calendar quarter, such information shall be documented in the EER quarterly report

** each downtime and malfunction event shall be reported regardless of whether there is an exceedance of any applicable limit

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:

PE from all process operations combined, excluding PE from natural gas combustion, shall not exceed 3.07 lbs/hr.

PE from all process operations combined, excluding PE from natural gas combustion, shall not exceed 1.71 lbs/hr.

The PM_{10} emissions from all process operations combined, excluding PM_{10} emissions from natural gas combustion, shall not exceed 0.43 lb/hr.

Applicable Compliance Method:

Compliance is based on the summation of calculated, hourly emission rates from the following equations for each pollutant:

Raw material feed and handling – wet scrubber (P010-1/F-1):

E = A*B*(1 - (1.00)(0.95))(2)

where:

E = PE or PM_{10} emissions, in lbs/hr;
A = uncontrolled mass emission rate, 0.12 lb of PE/ton, 0.06 lb of PM_{10}/ton (AP-42 section 11.24, Metallic Minerals Processing, Table 11.24-2, August, 1982);
B = maximum process weight rate, 0.65 ton/hr;
1.00 = fractional estimated capture efficiency, as provided in application;
0.95 = fractional estimated control efficiency, as provided in application; and
2 = number of transfer points.

Product discharge, screening and packaging –wet scrubber (P010-1/F-1):

E = A*B*(1 - (1.00)(0.95))(3)

where:

E = PE or PM_{10} emissions, in lbs/hr;
A = uncontrolled mass emission rate, 0.12 lb of PE/ton, 0.06 lb of PM_{10}/ton (AP-42 section 11.24, Metallic Minerals Processing, Table 11.24-2, August, 1982);
B = maximum process weight rate, 0.65 ton/hr;
1.00 = fractional estimated capture efficiency, as provided in application;
0.95 = fractional estimated control efficiency, as provided in application; and
3 = number of transfer points.

Calcining exhaust – Tri-Mer scrubber, F-1 scrubber or SCR unit and dust collector (CTO/SCR collector)
(least efficient of multiple control options):

E = A*B*(1 - (1.0)(0.95))

where:

E = PE or PM_{10} emissions, in lbs/hr;
A = uncontrolled mass emission rate, 52 lbs of PE/ton, 13 lbs of PM_{10}/ton (site specific emissions factor developed by the facility, 7/2016);
B = maximum process weight rate, 0.65 ton/hr;
1.0 = fractional estimated capture efficiency, as provided in application; and
0.95 = fractional estimated control efficiency, as provided in application.

If required, the permittee shall demonstrate compliance with this emission limitation through emission tests performed in accordance with the following methods:

for PE: Methods 1 through 5 of 40 CFR Part 60, Appendix A; and
for PM_{10}: Method 201 or 202A and 202 of 40 CFR Part 51, Appendix M.

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

b. Emission Limitation:

PE from the natural gas combustion process shall not exceed 0.020 lb/mmBtu of actual heat input.

Applicable Compliance Method:

Compliance is based on the following equation:

Natural gas combustion:

E = A/B

where:

E = PE rate, in lb/mmBtu of actual heat input;
A = emission factor, which is 7.6 lbs PE/PM_{10} per million cubic foot of natural gas fuel flow per (AP-42 section 1.4, Natural Gas Combustion, Table 1.4-2, July, 1998); and
B = heat content of natural gas, which is 1020 Btu/cf.

c. Emission Limitation:

Visible PE from any stack serving this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by the rule.

Applicable Compliance Method:

If required, compliance with the stack visible PE limitation shall be demonstrated through visible emission observations performed in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Method 9.

d. Testing requirements for continuous NO_x monitoring systems:

The permittee has one continuous NO_x monitoring system for monitoring emissions from the exhaust of the SCR system. The SCR system is used to control NO_x emissions from calciners P009, P010, P080, P092, P102 and P103. Not all calciners are currently connected by ductwork to the SCR, but may be connected in the future.

For calciners that are connected to the SCR system (P009, P010, P080, P092, P102 and/or P103), within 3-months after the issuance of the permit, the permittee shall conduct certification tests of the continuous NO_x monitoring system in units of the applicable standard(s), to demonstrate compliance with 40 CFR Part 60, Appendix B, Performance Specifications 2 and 6; and ORC section 3704.03(I).

Personnel from the Ohio EPA Central Office and the Ohio EPA Northeast District Office shall be notified 30 days prior to initiation of the applicable tests and shall be permitted to examine equipment and witness the certification tests. Two copies of the test results shall be submitted to Ohio EPA, one copy to the Ohio EPA Northeast District Office and one copy to Ohio EPA Central Office, and pursuant to OAC rule 3745-15-04, within 30 days after the test is completed.

Certification of the continuous NO_x monitoring system shall be granted upon determination by the Ohio EPA, Central Office that the system meets the requirements of 40 CFR Part 60, Appendix B, Performance Specifications 2 and 6; and ORC section 3704.03(I).

Ongoing compliance with the NO_x emission limitations contained in this permit, 40 CFR Part 60, and any other applicable standard(s) shall be demonstrated through the data collected as required in the monitoring and record keeping section of this permit and through demonstration of compliance with the quality assurance/quality control plan, which shall meet the testing and recertification requirements of 40 CFR Part 60.

e. Emission Limitation:

Calciners P009, P010, P080, P102 and P103 shall not exceed the NO_x emission limitation of 1.86 lbs/hr (200.0 ppmvd), excluding NO_x emissions from natural gas combustion, when operating the selective catalytic reduction (SCR) system.

Applicable Compliance Method:

Ongoing compliance with the NO_x emission limitation contained in this permit, 40 CFR Part 60 and any other applicable standard(s) shall be demonstrated through the data collected as required in the monitoring and record keeping section of this permit and through demonstration of compliance with the quality assurance/quality control plan, which shall meet the testing and recertification requirements of 40 CFR Part 60.

f. Emission Limitation:

Calciners P009, P010, P080, P102 and P103 shall not exceed the NO_x emission limitation of 3.4 lbs/hr (250.0 ppmvd), excluding NO_x emissions from natural gas combustion, when operating the caustic/chemical Tri-Mer scrubber.

Applicable Compliance Method:

If required, the permittee shall demonstrate compliance with this emission limitation through emission tests performed in accordance with the following methods:

for NO_x: Methods 1 through 4 and 7 or 7E of 40 CFR Part 60, Appendix A.

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

g. Design Efficiency:

For the exhaust of the Calciner, Raw Material Feed and Handling and Product Discharge and Handling, install a wet scrubber (P010-1/F-1) with a design control efficiency of at least 95% control of PM_{10}. The design control efficiency was established based on the information provided by the permittee in permit application #A0056213.

For the exhaust of the Calciner in NO_x service, install a dust collector (CTO/SCR collector) with a design control efficiency of at least 99% control of PM_{10}. The design control efficiency was established based on the information provided by the permittee in permit application #A0056213.

For the exhaust of the Calciner in NO_x service, install a wet scrubber (Tri-Mer) with a design control efficiency of at least 95% control of PM_{10}. The design control efficiency was established based on the information provided by the permittee in permit application #A0056213.

g) Miscellaneous Requirements

(1) None.

4. P095, Copper Calciner #2 (E-101)

Operations, Property and/or Equipment Description:

Rotary Calciner #2 in Building 26, equipped with a feed hopper dust collector (P095-A), dust collector (P095-B) for the exhaust of the calciner and dust collector (P095-C) for product discharge and packaging.

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	**Design Efficiency:** For Raw Material Feed, install a dust collector (P095-A) with a design control efficiency of at least 99% control of PM_{10}. For the exhaust of the Calciner, install a dust collector (P095-B) with a design control efficiency of at least 99% control of PM_{10}. For Product Drumming, install a dust collector (P095-C) with a design control efficiency of at least 99% control of PM_{10}. PM_{10}: Emissions of particulate matter with an aerodynamic diameter less than or equal to 10 micrometers. See b)(2)a and b)(2)e.
b.	OAC rule 3745-31-05(A)(3) June 30, 2008	Nitrogen oxides (NO_x) emissions from all process operations, excluding NO_x emissions from natural gas combustion, shall not exceed 0.33 ton per month averaged over a 12-month rolling period. See b)(2)a and b)(2)g.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
c.	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 emissions of PM_{10} and NO_x from this air contaminant source since the potential to emit is less than 10 tons per year. See b)(2)b.
d.	OAC rule 3745-17-11(B)	Particulate emissions (PE) from all process operations combined, excluding PE from natural gas combustion, shall not exceed 2.13 lbs/hr. See b)(2)c.
e.	OAC rule 3745-17-10(B)	PE from the natural gas combustion process shall not exceed 0.020 lb/mmBtu of actual heat input. See b)(2)d and c)(1).
f.	OAC rule 3745-17-07(A)	Visible PE from any stack serving this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by the rule.

(2) Additional Terms and Conditions

a. This Best Available Technology (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).

b. 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.

c. The allowable, hourly PE rate is based on Table I in OAC rule 3745-17-11 when the maximum process weight rate is 750 lbs/hr.

d. The calciner is a natural gas-fired unit that indirectly transfers heat to materials in this manufacturing process.

e. In order to ensure the source continues to operate as designed; the permittee shall operate this emissions unit in accordance with the company's designed estimates or manufacturer's recommendations and shall follow the company's or manufacturer's recommended maintenance, at the recommended intervals. The permittee shall keep a record of the maintenance on this emissions unit along with company's or manufacturer's recommendations.

f. PE from this emissions unit, excluding PE from natural gas combustion, shall be vented to the dust collector(s) at all times the emissions unit is in operation.

g. The ton per month emission limitation is based upon the emissions unit's potential to emit. Therefore, no monitoring, recordkeeping and reporting requirements are necessary to ensure compliance with this emission limitation.

c) Operational Restrictions

(1) The permittee shall burn only natural gas in this emissions unit.

d) Monitoring and/or Recordkeeping Requirements

(1) 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.

(2) The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible PE from each stack (dust collector (P095-A), dust collector (P095-B) and dust collector (P095-C)) 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. identification of the stack(s);
b. the color of the emissions;
c. whether the emissions are representative of normal operations;
d. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
e. the total duration of any visible emissions incident; and
f. 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 weekly 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 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.

(2) The permittee shall submit semiannual written reports that identify:

a. all days during which any visible PE were observed from any stack (dust collector (P095-A), dust collector (P095-B) and dust collector (P095-C)) serving this emissions unit; and

b. any corrective actions taken to minimize or eliminate the visible PE.

These reports shall be submitted to the Director (the Ohio EPA Northeast District Office) by January 31 and July 31 of each year and shall cover the previous 6-month period.

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:

PE from all process operations combined, excluding PE from natural gas combustion, shall not exceed 2.13 lbs/hr.

Applicable Compliance Method:

Compliance is based on the summation of calculated, hourly PE rates from the following equations:

Raw material feed – feed hopper dust collector (P095-A):

E = A*B*(1 - (1.0)(0.99))(1)

where:

E = PE, in lbs/hr;
A = uncontrolled mass emission rate, 0.12 lb of PE/ton (AP-42 section 11.24, Metallic Minerals Processing, Table 11.24-2, August, 1982);
B = maximum process weight rate, 0.375 ton/hr;
1.0 = fractional estimated capture efficiency, as provided in application;
0.99 = fractional estimated control efficiency, as provided in application; and
1 = number of transfer points.

Product discharge and packaging –dust collector (P095-C):

E = A*B*(1 - (1.0)(0.99))(1)

where:

E = PE, in lbs/hr;
A = uncontrolled mass emission rate, 0.12 lb of PE/ton (AP-42 section 11.24, Metallic Minerals Processing, Table 11.24-2, August, 1982);
B = maximum process weight rate, 0.375 ton/hr;
1.0 = fractional estimated capture efficiency, as provided in application;

0.99 = fractional estimated control efficiency, as provided in application; and
1 = number of transfer points.

Calcining exhaust – dust collector (P095-B):

E = A*B*(1 - (1.0)(0.99))

where:

E = PE, in lbs/hr;
A = uncontrolled mass emission rate, 120 lbs of PE/ton (AP-42 section 11.25, Fire Clay Processing, Table 11.25-7, January, 1995);
B = maximum process weight rate, 0.375 ton/hr;
1.0 = fractional estimated capture efficiency, as provided in application; and
0.99 = fractional estimated control efficiency, as provided in application.

If required, the permittee shall demonstrate compliance with this emission limitation through emission tests performed in accordance with the following methods:

for PE: Methods 1 through 5 of 40 CFR Part 60, Appendix A.

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

b. Emission Limitation:

PE from the natural gas combustion process shall not exceed 0.020 lb/mmBtu of actual heat input.

Applicable Compliance Method:

Compliance is based on the following equation:

Natural gas combustion:

E = A/B

where:

E = PE rate, in lb/mmBtu of actual heat input;
A = emission factor, which is 7.6 lbs PE/PM_{10} per million cubic foot of natural gas fuel flow per (AP-42 section 1.4, Natural Gas Combustion, Table 1.4-2, July, 1998); and
B = heat content of natural gas, which is 1020 Btu/cf.

c. Emission Limitation:

Visible PE from any stack serving this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by the rule.

Applicable Compliance Method:

If required, compliance with the stack visible PE limitation shall be demonstrated through visible emission observations performed in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Method 9.

d. Design Efficiency:

For Raw Material Feed, install a dust collector with a design control efficiency of at least 99% control of PM_{10}. The design control efficiency was established based on the information provided by the permittee in permit application #A0056213.

For Product Drumming, install a dust collector with a design control efficiency of at least 99% control of PM_{10}. The design control efficiency was established based on the information provided by the permittee in permit application #A0056213.

For the Calcining Process, install a dust collector with a design control efficiency of at least 99% control of PM_{10}. The design control efficiency was established based on the information provided by the permittee in permit application #A0056213.

e. Emission Limitation:

NO_x emissions from all process operations, excluding NO_x emissions from natural gas combustion, shall not exceed 0.33 ton per month averaged over a 12-month rolling period.

Applicable Compliance Method:

The monthly average emission limitation was established by multiplying the maximum hourly NO_x process emission rate (0.89 lb/hr), as determined by methodologies provided in application #A0056213, by 8760 hours/yr and then dividing by 12 months/yr and 2000 lbs/ton.

g) Miscellaneous Requirements

(1) None.

5. P102, ROTARY CALCINER #2

Operations, Property and/or Equipment Description:

Rotary Calciner #2 in Building 31, equipped with a dust collector (CTO/SCR collector), selective catalytic reduction (SCR) system, wet scrubber (Tri-Mer), wet scrubber (P010-1/F-1) and dust collector (DC #2). Dust collector (CTO/SCR collector) and SCR system are in series, used to control particulate emissions and NO_x emissions, respectively from the process exhaust of the calciner. Wet scrubber (Tri-Mer) is used to control particulate emissions and NO_x emissions from the process exhaust of the calciner. Either the SCR system or wet scrubber (Tri-Mer) is utilized when producing NO_x generating materials. Wet scrubber (P010-1/F-1) is used to control particulate emissions from the process exhaust of the calciner when producing non-NO_x generating materials. Dust collector (DC #2) is also used for feed hopper, feed material handling, product discharge, screening and packaging.

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	**Design Efficiency:** For Raw Material Feed and Handling and for Product Discharge, Screening, Packaging and Handling, install a dust collector (DC #2) with a design control efficiency of at least 99% control of PM_{10}. For the exhaust of the Calciner, install a wet scrubber (P010-1/F-1) with a design control efficiency of at least 95% control of PM_{10}. For the exhaust of the Calciner in NO_x service, install a dust collector (CTO/SCR collector) with a design control efficiency of at least 99% control of PM_{10}. For the exhaust of the Calciner in NO_x service, install a wet scrubber (Tri-Mer)

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		with a design control efficiency of at least 95% control of PM_{10}. PM_{10}: Emissions of particulate matter with an aerodynamic diameter less than or equal to 10 micrometers. See b)(2)a 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 emissions of PM_{10} from this air contaminant source since the potential to emit is less than 10 tons per year. See b)(2)b.
c.	OAC rule 3745-31-05(F)	See b)(2)c and c)(2).
d.	OAC rule 3745-17-11(B)	The particulate emissions (PE) from all process operations combined, excluding PE from natural gas combustion, shall not exceed 3.07 lbs/hr. See b)(2)d.
e.	OAC rule 3745-17-10(B)	PE from the natural gas combustion process shall not exceed 0.020 lb/mmBtu of actual heat input. See b)(2)e and c)(1).
f.	OAC rule 3745-17-07(A)	Visible PE from any stack serving this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by the rule.
g.	OAC rule 3745-110-03(R)(1)	Calciners P009, P010, P080, P102 and P103 shall not exceed the NO_x emission limitation of 1.86 lbs/hr (200.0 ppmvd), excluding NO_x emissions from natural gas combustion, when operating the selective catalytic reduction (SCR) system.
h.	OAC rule 3745-110-03(R)(2)	Calciners P009, P010, P080, P102 and P103 shall not exceed the NO_x emission limitation of 3.4 lbs/hr (250.0 ppmvd), excluding NO_x emissions from natural gas combustion, when operating the caustic/ chemical Tri-Mer scrubber.

(2) Additional Terms and Conditions

a. This Best Available Technology (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).

b. 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.

c. This permit establishes the following legally and practically enforceable emission limitations. The legally and practically enforceable emission limitations are voluntary restrictions established under OAC rule 3745-31-05(F) and are based on the operational restrictions contained in c)(2) which requires the use of bin vent filters and dust collectors:

i. PE from all process operations combined, excluding PE from natural gas combustion, shall not exceed 1.71 lbs/hr; and

ii. PM_{10} emissions from all process operations combined, excluding PM_{10} emissions from natural gas combustion, shall not exceed 0.43 lb/hr.

d. The allowable, hourly PE rate is based on Table I in OAC rule 3745-17-11 when the maximum process weight rate is 1300 lbs/hr.

e. The calciner is a natural gas-fired unit that indirectly transfers heat to materials in this manufacturing process.

f. In order to ensure the source continues to operate as designed; the permittee shall operate this emissions unit in accordance with the company's designed estimates or manufacturer's recommendations and shall follow the company's or manufacturer's recommended maintenance, at the recommended intervals. The permittee shall keep a record of the maintenance on this emissions unit along with company's or manufacturer's recommendations.

g. PE from this emissions unit, excluding PE from natural gas combustion, shall be vented to the dust collector (DC #2) and either dust collector (CTO/SCR collector), wet scrubber (Tri-Mer) or wet scrubber (P010-1/F-1) at all times the emissions unit is in operation.

h. Whenever processing batches having NO_x generating materials, the exhaust gases from the calciner shall be vented to either the wet scrubber (Tri-Mer) or the SCR system at all times the emissions unit is in operation.

i. Each continuous NO_x monitoring system shall be certified to meet the requirements of 40 CFR Part 60, Appendix B, Performance Specifications 2 and 6. At least 45 days before commencing certification testing of the continuous NO_x monitoring system(s), the permittee shall develop and maintain a written quality assurance/quality control plan designed to ensure continuous valid and representative readings of NO_x emissions from the continuous monitor(s), in units of the applicable standard(s). The plan shall follow the requirements of 40 CFR Part 60, Appendix F. The quality assurance/quality control plan and a logbook dedicated to the continuous NO_x monitoring system must be kept on site and available for inspection during regular office hours.

The plan shall include the requirement to conduct quarterly cylinder gas audits or relative accuracy audits as required in 40 CFR Part 60 and to conduct relative accuracy test audits in units of the standard(s), in accordance with and at the frequencies required per 40 CFR Part 60.

j. The continuous emission monitoring system consists of all the equipment used to acquire data to provide a record of emissions and includes the sample extraction and transport hardware, sample conditioning hardware, analyzers, and data recording/processing hardware and software.

c) Operational Restrictions

(1) The permittee shall burn only natural gas in this emissions unit.

(2) The following operational restrictions have been included in this permit for the purpose of establishing the following legally and practically enforceable requirements: [See b)(2)f.]

a. For Raw Material Feed and Handling and for Product Discharge, Screening, Packaging and Handling, design, install and operate capture and control equipment having at least a 99% capture efficiency and at least a 99% control efficiency (dust collector) for the capture and removal of PE/PM_{10} emissions from operations of the Raw Material Feed and Handling and for Product Discharge, Screening, Packaging and Handling;

b. For the exhaust of the Calciner, Raw Material Feed and Handling and Product Discharge and Handling, design, install and operate capture and control equipment having at least a 100% capture efficiency and at least a 95% control efficiency (scrubber) for the capture and removal of PE/PM_{10} emissions from operations of the Calciner, Raw Material Feed and Handling and Product Discharge and Handling;

c. For the exhaust of the Calciner in NO_x service, install and operate capture and control equipment having at least a 100% capture efficiency and at least a 99% control efficiency (dust collector) for the capture and removal of PE/PM_{10} emissions from operations of the Calciner in NO_x service; and

d. For the exhaust of the Calciner in NO_x service, design, install and operate capture and control equipment having at least a 100% capture efficiency and at least a 95% control efficiency (scrubber) for the capture and removal of PE/PM_{10} emissions from operations of the Calciner in NO_x service.

d) Monitoring and/or Recordkeeping Requirements

(1) 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.

(2) The permittee shall maintain daily records of the following information for this emissions unit:

a. the number and identification of each batch produced having NO_x generating materials;

b. an operating log when batches having NO_x generating materials are processed in this emissions unit; and

c. a log of the downtime for each capture (collection) system, the wet scrubber (Tri-Mer), SCR system and the associated monitoring equipment for the NO_x control equipment when batches having NO_x generating materials are processed in this emissions unit.

(3) In order to maintain compliance with the applicable emission limitation(s) contained in this permit, the acceptable range(s) and/or limit(s) for the wet scrubber (Tri-Mer), that shall be maintained in order to demonstrate compliance, whenever a batch, having NO_x generating materials, is processed shall be as follows:

a. the acceptable range for the pressure drop across the first stage the wet scrubber (Tri-Mer) shall be between 0.05 to 3 inches of water;

b. the acceptable range for the pressure drop across the second stage the wet scrubber (Tri-Mer) shall be between 0.2 to 5 inches of water;

c. the acceptable range for the pressure drop across the third stage the wet scrubber (Tri-Mer) shall be between 0.2 to 6 inches of water;

d. the acceptable scrubber liquid flow rate to each stage of the wet scrubber (Tri-Mer) shall not be less than 50 gallons per minute; and

e. the acceptable pH of the scrubber liquid at each stage of the wet scrubber (Tri-Mer) shall not be less than 9.

(4) The permittee shall properly install, operate, and maintain equipment to continuously monitor the following control equipment parameters for the wet scrubber (Tri-Mer), during operation of this emission unit, when processing batches, having NO_x generating materials, including periods of startup and shutdown:

a. the pressure drop across each stage of the scrubber, in inches of water;
b. the scrubber liquid flow rate to each stage of the scrubber, in gallons per minute; and
c. the pH of the scrubber liquid at each stage of the scrubber.

The permittee shall record the pressure drop across each stage of the scrubber, the scrubber flow rate at each stage of the scrubber, and pH at each stage of the scrubber on a daily basis. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s), with any modifications deemed necessary by the permittee.

(5) Whenever the monitored value of the control equipment parameter(s) deviate(s) from the range(s) or limit(s) established in accordance with this permit for the wet scrubber (Tri-

Mer), the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation:

a. the date and time the deviation began;
b. the magnitude of the deviation at that time;
c. the date the investigation was conducted;
d. the name(s) of the personnel who conducted the investigation; and
e. the findings and recommendations.

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

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

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

The range(s) or limit(s) on the control equipment parameter(s) (pressure drop, liquid flow rate and pH) are effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the Ohio EPA Northeast District Office. The permittee may request revisions to the permitted control equipment parameter range(s) or limit(s) based upon information obtained during future performance tests that demonstrate compliance with the allowable emission rate(s) of the controlled pollutant(s). In addition, approved revisions to the parameter range(s) and limit(s) will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of a minor permit modification.

(6) In order to maintain compliance with the applicable emission limitation(s) contained in this permit, the acceptable range(s) and/or limit(s) for the wet scrubber (P010-1/F-1), that shall be maintained in order to demonstrate compliance, whenever the scrubber is employed to control PE, shall be as follows:

a. the acceptable range for the pressure drop across the wet scrubber (P010-1/F-1) shall be between 0.1 to 7 inches of water; and

b. the acceptable scrubber liquid flow rate of the wet scrubber (P010-1/F-1) shall not be less than 25 gallons per minute.

(7) The permittee shall properly install, operate, and maintain equipment to continuously monitor the following control equipment parameters for the wet scrubber (P010-1/F-1),during operation of this emission unit, when processing batches, having non-NO_x generating materials, including periods of startup and shutdown**:**

a. the pressure drop across each stage of the scrubber**,** in inches of water; and
b. the scrubber liquid flow rate to each stage of the scrubber, in gallons per minute.

The permittee shall record the pressure drop across the scrubber and the scrubber flow rate of the scrubber on a daily basis. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s), with any modifications deemed necessary by the permittee.

(8) Whenever the monitored value of the control equipment parameter(s) deviate(s) from the range(s) or limit(s) established in accordance with this permit for wet scrubber (P010-1/F-1), the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation:

a. the date and time the deviation began;
b. the magnitude of the deviation at that time;
c. the date the investigation was conducted;
d. the name(s) of the personnel who conducted the investigation; and
e. the findings and recommendations.

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

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

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

The range(s) or limit(s) on the control equipment parameter(s) (pressure drop and liquid flow rate) are effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the Ohio EPA Northeast District Office. The permittee may request revisions to the permitted control equipment parameter range(s) or limit(s) based upon information obtained during future performance tests that demonstrate compliance with the allowable emission rate(s) of the controlled

pollutant(s). In addition, approved revisions to the parameter range(s) and limit(s) will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of a minor permit modification.

(9) The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible PE from each stack (dust collector (DC #2), wet scrubber (P010-1/F-1) and wet scrubber (Tri-Mer) or dust collector (CTO/SCR collector)) 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. identification of the stack(s);
b. the color of the emissions;
c. whether the emissions are representative of normal operations;
d. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
e. the total duration of any visible emissions incident; and
f. 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 weekly 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.

(10) The permittee shall properly install, operate, and maintain equipment to continuously monitor the pressure drop, in inches of water, across each dust collector when the controlled emissions unit(s) is/are in operation, including periods of startup and shutdown. The permittee shall record the pressure drop across the dust collector on a weekly basis. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s), with any modifications deemed necessary by the permittee.

a. In order to maintain compliance with the applicable emission limitation(s) contained in this permit, the acceptable range established for the pressure drop across the dust collector (DC #2) is between 0.1 to 5 inches of water.

b. In order to maintain compliance with the applicable emission limitation(s) contained in this permit, the acceptable range established for the pressure drop across the dust collector (CTO/SCR collector) is between 0.1 to 5 inches of water.

(11) Whenever the monitored value for the pressure drop deviates from the limit or range established in accordance with this permit for the dust collector (DC #2) or dust collector

(CTO/SCR collector), the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation:

a. the date and time the deviation began;
b. the magnitude of the deviation at that time;
c. the date the investigation was conducted;
d. the name(s) of the personnel who conducted the investigation; and
e. the findings and recommendations.

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

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

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

This range or limit on the pressure drop across the dust collector is effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the Ohio EPA Northeast District Office. The permittee may request revisions to the permitted limit or range for the pressure drop based upon information obtained during future testing that demonstrate compliance with the allowable PE rate for the controlled emissions unit(s). In addition, approved revisions to the range or limit will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of a minor permit modification.

(12) For calciners P009, P010, P080, P092, P102 and P103, the permittee shall submit information detailing the proposed location of the sampling site in accordance with the siting requirements in 40 CFR Part 60, Appendix B, Performance Specification 2. The Ohio EPA, Central Office shall approve the proposed sampling site and certify that the continuous NO_x monitoring system meets the requirements of Performance Specifications 2 and 6. Once received, the letter(s)/document(s) of certification shall be maintained on-site and shall be made available to the Director (the Ohio EPA Northeast District Office) upon request.

(13) For calciners P009, P010, P080, P092, P102 and P103 when in NO_x service using the SCR system, the permittee shall operate and maintain equipment to continuously monitor and record NO_x emissions from the emissions unit(s)in units of the applicable

standard(s). The continuous monitoring and recording equipment shall comply with the requirements specified in 40 CFR Part 60.

The permittee shall maintain records of all data obtained by the continuous NO_x monitoring system including, but not limited to:

a. emissions of NO_x in parts per million for each cycle time of the analyzer, with no resolution less than one data point per minute required;

b. emissions of NO_x in units of the applicable standard(s) in the appropriate averaging period;

c. results of quarterly cylinder gas audits;

d. results of daily zero/span calibration checks and the magnitude of manual calibration adjustments;

e. results of required relative accuracy test audit(s), including results in units of the applicable standard(s);

f. hours of operation of the emissions unit, continuous NO_x monitoring system, and control equipment;

g. the date, time, and hours of operation of the emissions unit without the control equipment and/or the continuous NO_x monitoring system;

h. the date, time, and hours of operation of the emissions unit during any malfunction of the control equipment and/or the continuous NO_x monitoring system; and

i. the reason (if known) and the corrective actions taken (if any) for each such event in (g) and (h).

All valid data points generated and recorded by the continuous emission monitoring and data acquisition and handling system shall be used in the calculation of the pollutant concentration and/or emission rate over the appropriate averaging period.

e) Reporting Requirements

(1) 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.

(2) The permittee shall submit quarterly deviation (excursion) reports that identify the following:

a. any period of time (start time and date, and end time and date) when this emissions unit was processing a batch(es), having NO_x generating materials and the exhaust gases from the calciner were not vented to the wet scrubber (Tri-Mer);

b. each period of time (start time and date, and end time and date) when the pressure drop across any stage of the wet scrubber (Tri-Mer), the liquid flow rate, or the liquid pH at any stage of the scrubber was/were outside of the acceptable range(s) or limit(s);

c. each incident of deviation described in "a" or "b" (above) where a prompt investigation was not conducted;

d. each incident of deviation described in "a" or "b" where prompt corrective action, that would bring the emissions unit(s) into compliance and/or the control equipment parameter(s) into compliance with the acceptable range(s) or limit(s), was determined to be necessary and was not taken; and

e. each incident of deviation described in "a" or "b" where proper records were not maintained for the investigation and/or the corrective action(s).

The quarterly deviation (excursion) reports shall be submitted in accordance with the reporting requirements of the Standard Terms and Conditions of this permit.

(3) The permittee shall submit quarterly deviation (excursion) reports that identify the following:

a. any period of time (start time and date, and end time and date) when this emissions unit was in operation and the process emissions were not vented to the wet scrubber (P010-1/F-1);

b. each period of time (start time and date, and end time and date) when the pressure drop across of the wet scrubber (P010-1/F-1) or the liquid flow rate of the scrubber was/were outside of the acceptable range(s) or limit(s);

c. each incident of deviation described in "a" or "b" (above) where a prompt investigation was not conducted;

d. each incident of deviation described in "a" or "b" where prompt corrective action, that would bring the emissions unit(s) into compliance and/or the control equipment parameter(s) into compliance with the acceptable range(s) or limit(s), was determined to be necessary and was not taken; and

e. each incident of deviation described in "a" or "b" where proper records were not maintained for the investigation and/or the corrective action(s).

The quarterly deviation (excursion) reports shall be submitted in accordance with the reporting requirements of the Standard Terms and Conditions of this permit.

(4) The permittee shall submit semiannual written reports that identify:

a. all days during which any visible PE were observed from any stack (dust collector (DC #2), wet scrubber (P010-1/F-1), wet scrubber (Tri-Mer) and dust collector (CTO/SCR collector)) serving this emissions unit; and

b. any corrective actions taken to minimize or eliminate the visible PE.

These reports shall be submitted to the Director (the Ohio EPA Northeast District Office) by January 31 and July 31 of each year and shall cover the previous 6-month period.

(5) The permittee shall submit quarterly deviation (excursion) reports that identify the following occurrences:

a. each period of time (start time and date, and end time and date) when the pressure drop across the dust collector(s) (dust collector (DC #2) or (CTO/SCR collector)) was outside of the acceptable range;

b. any period of time (start time and date, and end time and date) when the emissions unit(s) was/were in operation and the process emissions were not vented to the dust collector(s);

c. each incident of deviation described in “a” or “b” (above) where a prompt investigation was not conducted;

d. each incident of deviation described in “a” or “b” where prompt corrective action, that would bring the pressure drop into compliance with the acceptable range, was determined to be necessary and was not taken; and

e. each incident of deviation described in “a” or “b” where proper records were not maintained for the investigation and/or the corrective action(s), as identified in the monitoring and recordkeeping requirements of this permit.

The quarterly deviation (excursion) reports shall be submitted in accordance with the reporting requirements of the Standard Terms and Conditions of this permit.

(6) The permittee shall comply with the following quarterly reporting requirements for the calciners P009, P010, P080, P092, P102 and P103 when in NO_x service using the SCR system and the continuous NO_x monitoring system:

a. Pursuant to the monitoring, recordkeeping, and reporting requirements for continuous monitoring systems contained in 40 CFR 60.7 and 60.13(h) and the requirements established in this permit, the permittee shall submit reports within 30 days following the end of each calendar quarter to the Ohio EPA Northeast District Office, documenting all instances of NO_x emissions in excess of any applicable limit specified in this permit.

The report shall document the date, commencement and completion times, duration, and magnitude of each exceedance, as well as the reason (if known) and the corrective actions taken (if any) for each exceedance and which calciner(s) was/were operating at the time of each exceedance. Excess emissions shall be reported in units of the applicable standard(s).

b. These quarterly reports shall be submitted by January 30, April 30, July 30, and October 30 of each year and shall include the following:

i. the facility name and address;

ii. the manufacturer and model number of the continuous NO_x and other associated monitors;

iii. a description of any change in the equipment that comprises the continuous emission monitoring system (CEMS), including any change to the hardware, changes to the software that may affect CEMS readings, and/or changes in the location of the CEMS sample probe;

iv. the excess emissions report (EER)*, i.e., a summary of any exceedances during the calendar quarter, as specified above, for calciners P009, P010, P080, P092, P102 and P103 when in NO_x service using the SCR system;

v. the total NO_x emissions for the calendar quarter (tons) from calciners P009, P010, P080, P092, P102 and P103 when in NO_x service using the SCR system;

vi. the total operating time (hours) when any calciner P009, P010, P080, P092, P102 and P103 operated when in NO_x service using the SCR system;

vii. the total operating time of the continuous NO_x monitoring system while any calciner P009, P010, P080, P092, P102 and P103 operated when in NO_x service using the SCR system;

viii. results and dates of quarterly cylinder gas audits;

ix. unless previously submitted, results and dates of the relative accuracy test audit(s), including results in units of the applicable standard(s), (during appropriate quarter(s));

x. unless previously submitted, the results of any relative accuracy test audit showing the continuous NO_x monitor out-of-control and the compliant results following any corrective actions;

xi. the date, time, and duration of any/each malfunction** of the continuous NO_x monitoring system, emissions unit(s), and/or control equipment;

xii. the date, time, and duration of any downtime** of the continuous NO_x monitoring system and/or control equipment while the emissions unit(s) was in operation; and

xiii. the reason (if known) and the corrective actions taken (if any) for each event in (b)(xi) and (xii).

Each report shall address the operations conducted and data obtained during the previous calendar quarter.

* where no excess emissions have occurred or the continuous monitoring system(s) has/have not been inoperative, repaired, or adjusted during the calendar quarter, such information shall be documented in the EER quarterly report

** each downtime and malfunction event shall be reported regardless of whether there is an exceedance of any applicable limit

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:

PE from all process operations combined, excluding PE from natural gas combustion, shall not exceed 3.07 lbs/hr.

PE from all process operations combined, excluding PE from natural gas combustion, shall not exceed 1.71 lbs/hr.

The PM_{10} emissions from all process operations combined, excluding PM_{10} emissions from natural gas combustion, shall not exceed 0.43 lb/hr.

Applicable Compliance Method:

Compliance is based on the summation of calculated, hourly emission rates from the following equations for each pollutant:

Raw material feed and handling – dust collector (DC #2):

E = A*B*(1 - (1.00)(0.99))(2)

where:

E = PE or PM_{10} emissions, in lbs/hr;
A = uncontrolled mass emission rate, 0.12 lb of PE/ton, 0.06 lb of PM_{10}/ton (AP-42 section 11.24, Metallic Minerals Processing, Table 11.24-2, August, 1982);
B = maximum process weight rate, 0.65 ton/hr;
1.00 = fractional estimated capture efficiency, as provided in application;
0.99 = fractional estimated control efficiency, as provided in application; and
2 = number of transfer points.

Product discharge, screening and packaging –dust collector (DC #2):

E = A*B*(1 - (1.00)(0.99))(3)

where:

E = PE or PM_{10} emissions, in lbs/hr;
A = uncontrolled mass emission rate, 0.12 lb of PE/ton, 0.06 lb of PM_{10}/ton (AP-42 section 11.24, Metallic Minerals Processing, Table 11.24-2, August, 1982);
B = maximum process weight rate, 0.65 ton/hr;
1.00 = fractional estimated capture efficiency, as provided in application;

0.99 = fractional estimated control efficiency, as provided in application; and
3 = number of transfer points.

Calcining exhaust – Tri-Mer scrubber, P010-1/F-1 scrubber or SCR unit and dust collector (CTO/SCR collector)
(least efficient of multiple control options):

E = A*B*(1 - (1.0)(0.95))

where:

E = PE or PM_{10} emissions, in lbs/hr;
A = uncontrolled mass emission rate, 52 lbs of PE/ton, 13 lbs of PM_{10}/ton (site specific emissions factor developed by the facility, 7/2016);
B = maximum process weight rate, 0.65 ton/hr;
1.0 = fractional estimated capture efficiency, as provided in application; and
0.95 = fractional estimated control efficiency, as provided in application.

If required, the permittee shall demonstrate compliance with this emission limitation through emission tests performed in accordance with the following methods:

for PE: Methods 1 through 5 of 40 CFR Part 60, Appendix A; and
for PM_{10}: Method 201 or 202A and 202 of 40 CFR Part 51, Appendix M.

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

b. Emission Limitation:

PE from the natural gas combustion process shall not exceed 0.020 lb/mmBtu of actual heat input.

Applicable Compliance Method:

Compliance is based on the following equation:

Natural gas combustion:

E = A/B

where:

E = PE rate, in lb/mmBtu of actual heat input;
A = emission factor, which is 7.6 lbs PE/PM_{10} per million cubic foot of natural gas fuel flow per (AP-42 section 1.4, Natural Gas Combustion, Table 1.4-2, July, 1998); and
B = heat content of natural gas, which is 1020 Btu/cf.

c. Emission Limitation:

Visible PE from any stack serving this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by the rule.

Applicable Compliance Method:

If required, compliance with the stack visible PE limitation shall be demonstrated through visible emission observations performed in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Method 9.

d. Testing requirements for continuous NO_x monitoring systems:

The permittee has one continuous NO_x monitoring system for monitoring emissions from the exhaust of the SCR system. The SCR system is used to control NO_x emissions from calciners P009, P010, P080, P092, P102 and P103. Not all calciners are currently connected by ductwork to the SCR, but may be connected in the future.

For calciners that are connected to the SCR system (P009, P010, P080, P092, P102 and/or P103), within 3-months after the issuance of the permit, the permittee shall conduct certification tests of the continuous NO_x monitoring system in units of the applicable standard(s), to demonstrate compliance with 40 CFR Part 60, Appendix B, Performance Specifications 2 and 6 and ORC section 3704.03(I).

Personnel from the Ohio EPA Central Office and the Ohio EPA Northeast District Office shall be notified 30 days prior to initiation of the applicable tests and shall be permitted to examine equipment and witness the certification tests. Two copies of the test results shall be submitted to Ohio EPA, one copy to the Ohio EPA Northeast District Office and one copy to Ohio EPA Central Office and, pursuant to OAC rule 3745-15-04, within 30 days after the test is completed.

Certification of the continuous NO_x monitoring system shall be granted upon determination by the Ohio EPA Central Office that the system meets the requirements of 40 CFR Part 60, Appendix B, Performance Specifications 2 and 6 and ORC section 3704.03(I).

Ongoing compliance with the NO_x emission limitations contained in this permit, 40 CFR Part 60, and any other applicable standard(s) shall be demonstrated through the data collected as required in the monitoring and record keeping section of this permit and through demonstration of compliance with the quality assurance/quality control plan, which shall meet the testing and recertification requirements of 40 CFR Part 60.

e. Emission Limitation:

Calciners P009, P010, P080, P102 and P103 shall not exceed the NO_x emission limitation of 1.86 lbs/hr (200.0 ppmvd), excluding NO_x emissions from natural gas combustion, when operating the selective catalytic reduction (SCR) system.

Applicable Compliance Method:

Ongoing compliance with the NO_x emission limitation contained in this permit, 40 CFR Part 60 and any other applicable standard(s) shall be demonstrated through the data collected as required in the monitoring and record keeping section of this permit and through demonstration of compliance with the quality assurance/quality control plan, which shall meet the testing and recertification requirements of 40 CFR Part 60.

f. Emission Limitation:

Calciners P009, P010, P080, P102 and P103 shall not exceed the NO_x emission limitation of 3.4 lbs/hr (250.0 ppmvd), excluding NO_x emissions from natural gas combustion, when operating the caustic/chemical Tri-Mer scrubber.

Applicable Compliance Method:

If required, the permittee shall demonstrate compliance with this emission limitation through emission tests performed in accordance with the following methods:

For NO_x: Methods 1 through 4 and 7 or 7E of 40 CFR Part 60, Appendix A.

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

g. Design Efficiency:

For Raw Material Feed and Handling and for Product Discharge, Screening, Packaging and Handling, install a dust collector (DC #2) with a design control efficiency of at least 99% control of PM_{10}. The design control efficiency was established based on the information provided by the permittee in permit application #A0056213.

For the exhaust of the Calciner, install a wet scrubber (P010-1/F-1) with a design control efficiency of at least 95% control of PM_{10}. The design control efficiency was established based on the information provided by the permittee in permit application #A0056213.

For the exhaust of the Calciner in NO_x service, install a dust collector (CTO/SCR collector) with a design control efficiency of at least 99% control of PM_{10}. The design control efficiency was established based on the information provided by the permittee in permit application #A0056213.

For the exhaust of the Calciner in NO_x service, install a wet scrubber (Tri-Mer) with a design control efficiency of at least 95% control of PM_{10}. The design control efficiency was established based on the information provided by the permittee in permit application #A0056213.

g) Miscellaneous Requirements

(1) None.

6. P103, ROTARY CALCINER #3

Operations, Property and/or Equipment Description:

Rotary Calciner #3 in Building 31, equipped with a dust collector (CTO/SCR collector), selective catalytic reduction (SCR) system, wet scrubber (Tri-Mer), wet scrubber (P010-1/F-1) and dust collector (DC #3). Dust collector (CTO/SCR collector) and SCR system are in series, used to control particulate emissions and NO_x emissions, respectively from the process exhaust of the calciner. Wet scrubber (Tri-Mer) is used to control particulate emissions and NO_x emissions from the process exhaust of the calciner. Either the SCR system or wet scrubber (Tri-Mer) is utilized when producing NO_x generating materials. Wet scrubber (P010-1/F-1) is used to control particulate emissions from the process exhaust of the calciner when producing non-NO_x generating materials. Dust collector (DC #3) is also used for feed hopper, feed material handling, product discharge, screening and packaging.

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	**Design Efficiency:** For Raw Material Feed and Handling and for Product Discharge, Screening, Packaging and Handling, install a dust collector (DC #3) with a design control efficiency of at least 99% control of PM_{10}. For the exhaust of the Calciner, install a wet scrubber (P010-1/F-1) with a design control efficiency of at least 95% control of PM_{10}. For the exhaust of the Calciner in NO_x service, install a dust collector (CTO/SCR collector) with a design control efficiency of at least 99% control of PM_{10}. For the exhaust of the Calciner in NO_x service, install a wet scrubber (Tri-Mer)

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		with a design control efficiency of at least 95% control of PM_{10}. PM_{10}: Emissions of particulate matter with an aerodynamic diameter less than or equal to 10 micrometers. See b)(2)a 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 emissions of PM_{10} from this air contaminant source since the potential to emit is less than 10 tons per year. See b)(2)b.
c.	OAC rule 3745-31-05(F)	See b)(2)c and c)(2).
d.	OAC rule 3745-17-11(B)	Particulate emissions (PE) from all process operations combined, excluding PE from natural gas combustion, shall not exceed 3.07 lbs/hr. See b)(2)d.
e.	OAC rule 3745-17-10(B)	PE from the natural gas combustion process shall not exceed 0.020 lb/mmBtu of actual heat input. See b)(2)e and c)(1).
f.	OAC rule 3745-17-07(A)	Visible PE from any stack serving this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by the rule.
g.	OAC rule 3745-110-03(R)(1)	Calciners P009, P010, P080, P102 and P103 shall not exceed the NO_x emission limitation of 1.86 lbs/hr (200.0 ppmvd), excluding NO_x emissions from natural gas combustion, when operating the selective catalytic reduction (SCR) system.
h.	OAC rule 3745-110-03(R)(2)	Calciners P009, P010, P080, P102 and P103 shall not exceed the NO_x emission limitation of 3.4 lbs/hr (250.0 ppmvd), excluding NO_x emissions from natural gas combustion, when operating the caustic/ chemical Tri-Mer scrubber.

(2) Additional Terms and Conditions

a. This Best Available Technology (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).

b. 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.

c. This permit establishes the following legally and practically enforceable emission limitations. The legally and practically enforceable emission limitations are voluntary restrictions established under OAC rule 3745-31-05(F) and are based on the operational restrictions contained in c)(2) which requires the use of bin vent filters and dust collectors:

i. PE from all process operations combined, excluding PE from natural gas combustion, shall not exceed 1.71 lbs/hr; and

ii. PM_{10} emissions from all process operations combined, excluding PM_{10} emissions from natural gas combustion, shall not exceed 0.43 lb/hr.

d. The allowable, hourly PE rate is based on Table I in OAC rule 3745-17-11 when the maximum process weight rate is 1300 lbs/hr.

e. The calciner is a natural gas-fired unit that indirectly transfers heat to materials in this manufacturing process.

f. In order to ensure the source continues to operate as designed; the permittee shall operate this emissions unit in accordance with the company's designed estimates or manufacturer's recommendations and shall follow the company's or manufacturer's recommended maintenance, at the recommended intervals. The permittee shall keep a record of the maintenance on this emissions unit along with company's or manufacturer's recommendations.

g. PE from this emissions unit, excluding PE from natural gas combustion, shall be vented to the dust collector (DC#3) and either dust collector (CTO/SCR collector), wet scrubber (Tri-Mer) or wet scrubber (P010-1/F-1) at all times the emissions unit is in operation.

h. Whenever processing batches having NO_x generating materials, the exhaust gases from the calciner shall be vented to either the wet scrubber (Tri-Mer) or the SCR system at all times the emissions unit is in operation.

i. Each continuous NO_x monitoring system shall be certified to meet the requirements of 40 CFR Part 60, Appendix B, Performance Specifications 2 and 6. At least 45 days before commencing certification testing of the continuous NO_x monitoring system(s), the permittee shall develop and maintain a written quality assurance/quality control plan designed to ensure continuous valid and representative readings of NO_x emissions from the continuous monitor(s), in units of the applicable standard(s). The plan shall follow the requirements of 40 CFR Part 60, Appendix F. The quality assurance/quality control plan and a logbook dedicated to the continuous NO_x monitoring system must be kept on site and available for inspection during regular office hours.

The plan shall include the requirement to conduct quarterly cylinder gas audits or relative accuracy audits as required in 40 CFR Part 60 and to conduct relative accuracy test audits in units of the standard(s), in accordance with and at the frequencies required per 40 CFR Part 60.

j. The continuous emission monitoring system consists of all the equipment used to acquire data to provide a record of emissions and includes the sample extraction and transport hardware, sample conditioning hardware, analyzers, and data recording/processing hardware and software.

c) Operational Restrictions

(1) The permittee shall burn only natural gas in this emissions unit.

(2) The following operational restrictions have been included in this permit for the purpose of establishing the following legally and practically enforceable requirements: [See b)(2)f.]

a. For Raw Material Feed and Handling and for Product Discharge, Screening, Packaging and Handling, design, install and operate capture and control equipment having at least a 99% capture efficiency and at least a 99% control efficiency (dust collector) for the capture and removal of PE/PM_{10} emissions from operations of the Raw Material Feed and Handling and for Product Discharge, Screening, Packaging and Handling;

b. For the exhaust of the Calciner, Raw Material Feed and Handling and Product Discharge and Handling, design, install and operate capture and control equipment having at least a 100% capture efficiency and at least a 95% control efficiency (scrubber) for the capture and removal of PE/PM_{10} emissions from operations of the Calciner, Raw Material Feed and Handling and Product Discharge and Handling;

c. For the exhaust of the Calciner in NO_x service, install and operate capture and control equipment having at least a 100% capture efficiency and at least a 99% control efficiency (dust collector) for the capture and removal of PE/PM_{10} emissions from operations of the Calciner in NO_x service; and

d. For the exhaust of the Calciner in NO_x service, design, install and operate capture and control equipment having at least a 100% capture efficiency and at least a 95% control efficiency (scrubber) for the capture and removal of PE/PM_{10} emissions from operations of the Calciner in NO_x service.

d) Monitoring and/or Recordkeeping Requirements

(1) 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.

(2) The permittee shall maintain daily records of the following information for this emissions unit:

a. the number and identification of each batch produced having NO_x generating materials;

b. an operating log when batches having NO_x generating materials are processed in this emissions unit; and

c. a log of the downtime for each capture (collection) system, the wet scrubber (Tri-Mer), SCR system and the associated monitoring equipment for the NO_x control equipment when batches having NO_x generating materials are processed in this emissions unit.

(3) In order to maintain compliance with the applicable emission limitation(s) contained in this permit, the acceptable range(s) and/or limit(s) for the wet scrubber (Tri-Mer), that shall be maintained in order to demonstrate compliance whenever a batch having NO_x generating materials is processed shall be as follows:

a. the acceptable range for the pressure drop across the first stage the wet scrubber (Tri-Mer) shall be between 0.05 to 3 inches of water;

b. the acceptable range for the pressure drop across the second stage the wet scrubber (Tri-Mer) shall be between 0.2 to 5 inches of water;

c. the acceptable range for the pressure drop across the third stage the wet scrubber (Tri-Mer) shall be between 0.2 to 6 inches of water;

d. the acceptable scrubber liquid flow rate to each stage of the wet scrubber (Tri-Mer) shall not be less than 50 gallons per minute; and

e. the acceptable pH of the scrubber liquid at each stage of the wet scrubber (Tri-Mer) shall not be less than 9.

(4) The permittee shall properly install, operate, and maintain equipment to continuously monitor the following control equipment parameters for the wet scrubber (Tri-Mer) during operation of this emission unit when processing batches having NO_x generating materials, including periods of startup and shutdown:

a. the pressure drop across each stage of the scrubber**,** in inches of water;
b. the scrubber liquid flow rate to each stage of the scrubber, in gallons per minute; and
c. the pH of the scrubber liquid at each stage of the scrubber.

The permittee shall record the pressure drop across each stage of the scrubber, the scrubber flow rate at each stage of the scrubber, and pH at each stage of the scrubber on a daily basis. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s), with any modifications deemed necessary by the permittee.

(5) Whenever the monitored value of the control equipment parameter(s) deviate(s) from the range(s) or limit(s) established in accordance with this permit for the wet scrubber (Tri-

Mer), the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation:

a. the date and time the deviation began;
b. the magnitude of the deviation at that time;
c. the date the investigation was conducted;
d. the name(s) of the personnel who conducted the investigation; and
e. the findings and recommendations.

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

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

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

The range(s) or limit(s) on the control equipment parameter(s) (pressure drop, liquid flow rate and pH) are effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the Ohio EPA Northeast District Office. The permittee may request revisions to the permitted control equipment parameter range(s) or limit(s) based upon information obtained during future performance tests that demonstrate compliance with the allowable emission rate(s) of the controlled pollutant(s). In addition, approved revisions to the parameter range(s) and limit(s) will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of a minor permit modification.

(6) In order to maintain compliance with the applicable emission limitation(s) contained in this permit, the acceptable range(s) and/or limit(s) for the wet scrubber (P010-1/F-1**)** that shall be maintained in order to demonstrate compliance whenever the scrubber is employed to control PE shall be as follows:

a. the acceptable range for the pressure drop across the wet scrubber (P010-1/F-1) shall be between 0.1 to 7 inches of water; and

b. the acceptable scrubber liquid flow rate of the wet scrubber (P010-1/F-1) shall not be less than 25 gallons per minute.

(7) The permittee shall properly install, operate, and maintain equipment to continuously monitor the following control equipment parameters for the wet scrubber (P010-1/F-1) during operation of this emission unit when processing batches having non-NO_x generating materials, including periods of startup and shutdown:

a. the pressure drop across each stage of the scrubber, in inches of water; and
b. the scrubber liquid flow rate to each stage of the scrubber, in gallons per minute.

The permittee shall record the pressure drop across the scrubber and the scrubber flow rate of the scrubber on a daily basis. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s), with any modifications deemed necessary by the permittee.

(8) Whenever the monitored value of the control equipment parameter(s) deviate(s) from the range(s) or limit(s) established in accordance with this permit for wet scrubber (P010-1/F-1), the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation:

a. the date and time the deviation began;
b. the magnitude of the deviation at that time;
c. the date the investigation was conducted;
d. the name(s) of the personnel who conducted the investigation; and
e. the findings and recommendations.

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

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

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

The range(s) or limit(s) on the control equipment parameter(s) (pressure drop and liquid flow rate) are effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the Ohio EPA Northeast District Office. The permittee may request revisions to the permitted control equipment parameter range(s) or limit(s) based upon information obtained during future performance tests that demonstrate compliance with the allowable emission rate(s) of the controlled

pollutant(s). In addition, approved revisions to the parameter range(s) and limit(s) will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of a minor permit modification.

(9) The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible PE from each stack (dust collector (DC #3), wet scrubber (P010-1/F-1) and wet scrubber (Tri-Mer) or SCR system) 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. identification of the stack(s);
b. the color of the emissions;
c. whether the emissions are representative of normal operations;
d. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
e. the total duration of any visible emissions incident; and
f. 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 weekly 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.

(10) The permittee shall properly install, operate, and maintain equipment to continuously monitor the pressure drop, in inches of water, across each dust collector when the controlled emissions unit(s) is/are in operation, including periods of startup and shutdown. The permittee shall record the pressure drop across the dust collector on a weekly basis. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s), with any modifications deemed necessary by the permittee.

a. In order to maintain compliance with the applicable emission limitation(s) contained in this permit, the acceptable range established for the pressure drop across the dust collector (CTO/SCR collector) is between 0.1 to 5 inches of water.

b. In order to maintain compliance with the applicable emission limitation(s) contained in this permit, the acceptable range established for the pressure drop across the dust collector (DC #3) is between 0.1 to 5 inches of water.

(11) Whenever the monitored value for the pressure drop deviates from the limit or range established in accordance with this permit for the dust collector (CTO/SCR collector) or dust collector (DC #3), the permittee shall promptly investigate the cause of the

deviation. The permittee shall maintain records of the following information for each investigation:

a. the date and time the deviation began;
b. the magnitude of the deviation at that time;
c. the date the investigation was conducted;
d. the name(s) of the personnel who conducted the investigation; and
e. the findings and recommendations.

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

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

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

This range or limit on the pressure drop across the dust collector is effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the Ohio EPA Northeast District Office. The permittee may request revisions to the permitted limit or range for the pressure drop based upon information obtained during future testing that demonstrate compliance with the allowable PE rate for the controlled emissions unit(s). In addition, approved revisions to the range or limit will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of a minor permit modification.

(12) For calciners P009, P010, P080, P092, P102 and P103, the permittee shall submit information detailing the proposed location of the sampling site in accordance with the siting requirements in 40 CFR Part 60, Appendix B, Performance Specification 2. The Ohio EPA, Central Office shall approve the proposed sampling site and certify that the continuous NO_x monitoring system meets the requirements of Performance Specifications 2 and 6. Once received, the letter(s)/document(s) of certification shall be maintained on-site and shall be made available to the Director (the Ohio EPA Northeast District Office) upon request.

(13) For calciners P009, P010, P080, P092, P102 and P103 when in NO_x service using the SCR system, the permittee shall operate and maintain equipment to continuously monitor and record NO_x emissions from the emissions unit(s)in units of the applicable

standard(s). The continuous monitoring and recording equipment shall comply with the requirements specified in 40 CFR Part 60.

The permittee shall maintain records of all data obtained by the continuous NO_x monitoring system including, but not limited to:

a. emissions of NO_x in parts per million for each cycle time of the analyzer, with no resolution less than one data point per minute required;

b. emissions of NO_x in units of the applicable standard(s) in the appropriate averaging period;

c. results of quarterly cylinder gas audits;

d. results of daily zero/span calibration checks and the magnitude of manual calibration adjustments;

e. results of required relative accuracy test audit(s), including results in units of the applicable standard(s);

f. hours of operation of the emissions unit, continuous NO_x monitoring system, and control equipment;

g. the date, time, and hours of operation of the emissions unit without the control equipment and/or the continuous NO_x monitoring system;

h. the date, time, and hours of operation of the emissions unit during any malfunction of the control equipment and/or the continuous NO_x monitoring system; and

i. the reason (if known) and the corrective actions taken (if any) for each such event in (g) and (h).

All valid data points generated and recorded by the continuous emission monitoring and data acquisition and handling system shall be used in the calculation of the pollutant concentration and/or emission rate over the appropriate averaging period.

e) Reporting Requirements

(1) 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.

(2) The permittee shall submit quarterly deviation (excursion) reports that identify the following:

a. any period of time (start time and date, and end time and date) when this emissions unit was processing a batch(es), having NO_x generating materials and the exhaust gases from the calciner were not vented to the wet scrubber (Tri-Mer);

b. each period of time (start time and date, and end time and date) when the pressure drop across any stage of the wet scrubber (Tri-Mer), the liquid flow rate, or the liquid pH at any stage of the scrubber was/were outside of the acceptable range(s) or limit(s);

c. each incident of deviation described in "a" or "b" (above) where a prompt investigation was not conducted;

d. each incident of deviation described in "a" or "b" where prompt corrective action, that would bring the emissions unit(s) into compliance and/or the control equipment parameter(s) into compliance with the acceptable range(s) or limit(s), was determined to be necessary and was not taken; and

e. each incident of deviation described in "a" or "b" where proper records were not maintained for the investigation and/or the corrective action(s).

The quarterly deviation (excursion) reports shall be submitted in accordance with the reporting requirements of the Standard Terms and Conditions of this permit.

(3) The permittee shall submit quarterly deviation (excursion) reports that identify the following:

a. any period of time (start time and date, and end time and date) when this emissions unit was in operation and the process emissions were not vented to the wet scrubber (P010-1/F-1);

b. each period of time (start time and date, and end time and date) when the pressure drop across of the wet scrubber (P010-1/F-1) or the liquid flow rate of the scrubber was/were outside of the acceptable range(s) or limit(s);

c. each incident of deviation described in "a" or "b" (above) where a prompt investigation was not conducted;

d. each incident of deviation described in "a" or "b" where prompt corrective action, that would bring the emissions unit(s) into compliance and/or the control equipment parameter(s) into compliance with the acceptable range(s) or limit(s), was determined to be necessary and was not taken; and

e. each incident of deviation described in "a" or "b" where proper records were not maintained for the investigation and/or the corrective action(s).

The quarterly deviation (excursion) reports shall be submitted in accordance with the reporting requirements of the Standard Terms and Conditions of this permit.

(4) The permittee shall submit semiannual written reports that identify:

a. all days during which any visible PE were observed from any stack (dust collector (DC #3), wet scrubber (P010-1/F-1), wet scrubber (Tri-Mer) and SCR system)serving this emissions unit; and

b. any corrective actions taken to minimize or eliminate the visible PE.

These reports shall be submitted to the Director (the Ohio EPA Northeast District Office) by January 31 and July 31 of each year and shall cover the previous 6-month period.

(5) The permittee shall submit quarterly deviation (excursion) reports that identify the following occurrences:

a. each period of time (start time and date, and end time and date) when the pressure drop across the dust collector(s) (dust collector (DC #3) or (CTO/SCR collector)) was outside of the acceptable range;

b. any period of time (start time and date, and end time and date) when the emissions unit(s) was/were in operation and the process emissions were not vented to the dust collector(s);

c. each incident of deviation described in "a" or "b" (above) where a prompt investigation was not conducted;

d. each incident of deviation described in "a" or "b" where prompt corrective action, that would bring the pressure drop into compliance with the acceptable range, was determined to be necessary and was not taken; and

e. each incident of deviation described in "a" or "b" where proper records were not maintained for the investigation and/or the corrective action(s), as identified in the monitoring and recordkeeping requirements of this permit.

The quarterly deviation (excursion) reports shall be submitted in accordance with the reporting requirements of the Standard Terms and Conditions of this permit.

(6) The permittee shall comply with the following quarterly reporting requirements for the calciners P009, P010, P080, P092, P102 and P103 when in NO_x service using the SCR system and the continuous NO_x monitoring system:

a. Pursuant to the monitoring, record keeping, and reporting requirements for continuous monitoring systems contained in 40 CFR 60.7 and 60.13(h) and the requirements established in this permit, the permittee shall submit reports within 30 days following the end of each calendar quarter to the Ohio EPA Northeast District Office documenting all instances of NO_x emissions in excess of any applicable limit specified in this permit.

The report shall document the date, commencement and completion times, duration, and magnitude of each exceedance, as well as the reason (if known) and the corrective actions taken (if any) for each exceedance and which calciner(s) was/were operating at the time of each exceedance. Excess emissions shall be reported in units of the applicable standard(s).

b. These quarterly reports shall be submitted by January 30, April 30, July 30, and October 30 of each year and shall include the following:

i. the facility name and address;

ii. the manufacturer and model number of the continuous NO_x and other associated monitors;

iii. a description of any change in the equipment that comprises the continuous emission monitoring system (CEMS), including any change to the hardware, changes to the software that may affect CEMS readings, and/or changes in the location of the CEMS sample probe;

iv. the excess emissions report (EER)*, i.e., a summary of any exceedances during the calendar quarter, as specified above, for calciners P009, P010, P080, P092, P102 and P103 when in NO_x service using the SCR system;

v. the total NO_x emissions for the calendar quarter (tons) from calciners P009, P010, P080, P092, P102 and P103 when in NO_x service using the SCR system;

vi. the total operating time (hours) when any calciner P009, P010, P080, P092, P102 and P103 operated when in NO_x service using the SCR system;

vii. the total operating time of the continuous NO_x monitoring system while any calciner P009, P010, P080, P092, P102 and P103 operated when in NO_x service using the SCR system;

viii. results and dates of quarterly cylinder gas audits;

ix. unless previously submitted, results and dates of the relative accuracy test audit(s), including results in units of the applicable standard(s), (during appropriate quarter(s));

x. unless previously submitted, the results of any relative accuracy test audit showing the continuous NO_x monitor out-of-control and the compliant results following any corrective actions;

xi. the date, time, and duration of any/each malfunction** of the continuous NO_x monitoring system, emissions unit(s), and/or control equipment;

xii. the date, time, and duration of any downtime** of the continuous NO_x monitoring system and/or control equipment while the emissions unit(s) was in operation; and

xiii. the reason (if known) and the corrective actions taken (if any) for each event in (b)(xi) and (xii).

Each report shall address the operations conducted and data obtained during the previous calendar quarter.

* where no excess emissions have occurred or the continuous monitoring system(s) has/have not been inoperative, repaired, or adjusted during the calendar quarter, such information shall be documented in the EER quarterly report

** each downtime and malfunction event shall be reported regardless of whether there is an exceedance of any applicable limit

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:

PE from all process operations combined, excluding PE from natural gas combustion, shall not exceed 3.07 lbs/hr.

PE from all process operations combined, excluding PE from natural gas combustion, shall not exceed 1.71 lbs/hr.

The PM_{10} emissions from all process operations combined, excluding PM_{10} emissions from natural gas combustion, shall not exceed 0.43 lb/hr.

Applicable Compliance Method:

Compliance is based on the summation of calculated, hourly emission rates from the following equations for each pollutant:

Raw material feed and handling – dust collector (DC #3):

E = A*B*(1 - (1.00)(0.99))(3)

where:

E = PE or PM_{10} emissions, in lbs/hr;
A = uncontrolled mass emission rate, 0.12 lb of PE/ton, 0.06 lb of PM_{10}/ton (AP-42 section 11.24, Metallic Minerals Processing, Table 11.24-2, August, 1982);
B = maximum process weight rate, 0.65 ton/hr;
1.00 = fractional estimated capture efficiency, as provided in application;
0.99 = fractional estimated control efficiency, as provided in application; and
3 = number of transfer points.

Product discharge, screening and packaging –dust collector (DC #3):

E = A*B*(1 - (1.00)(0.99))*(3)

where:

E = PE or PM_{10} emissions, in lbs/hr;
A = uncontrolled mass emission rate, 0.12 lb of PE/ton, 0.06 lb of PM_{10}/ton (AP-42 section 11.24, Metallic Minerals Processing, Table 11.24-2, August, 1982);
B = maximum process weight rate, 0.65 ton/hr;
1.00 = fractional estimated capture efficiency, as provided in application;

0.99 = fractional estimated control efficiency, as provided in application; and
3 = number of transfer points.

Calcining exhaust – Tri-Mer scrubber, P010-1/F-1 scrubber or SCR unit and dust collector (CTO/SCR collector)
(least efficient of multiple control options):

E = A*B*(1 - (1.0)(0.95))

where:

E = PE or PM_{10} emissions, in lbs/hr;
A = uncontrolled mass emission rate, 52 lbs of PE/ton, 13 lbs of PM_{10}/ton (site specific emissions factor developed by the facility, 7/2016);
B = maximum process weight rate, 0.65 ton/hr;
1.0 = fractional estimated capture efficiency, as provided in application; and
0.95 = fractional estimated control efficiency, as provided in application.

If required, the permittee shall demonstrate compliance with this emission limitation through emission tests performed in accordance with the following methods:

for PE: Methods 1 through 5 of 40 CFR Part 60, Appendix A; and
for PM_{10}: Method 201 or 202A and 202 of 40 CFR Part 51, Appendix M.

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

b. Emission Limitation:

PE from the natural gas combustion process shall not exceed 0.020 lb/mmBtu of actual heat input.

Applicable Compliance Method:

Compliance is based on the following equation:

Natural gas combustion:

E = A/B

where:

E = PE rate, in lb/mmBtu of actual heat input;
A = emission factor, which is 7.6 lbs PE/PM_{10} per million cubic foot of natural gas fuel flow per (AP-42 section 1.4, Natural Gas Combustion, Table 1.4-2, July, 1998); and
B = heat content of natural gas, which is 1020 Btu/cf.

c. Emission Limitation:

Visible PE from any stack serving this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by the rule.

Applicable Compliance Method:

If required, compliance with the stack visible PE limitation shall be demonstrated through visible emission observations performed in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Method 9.

d. Testing requirements for continuous NO_x monitoring systems:

The permittee has one continuous NO_x monitoring system for monitoring emissions from the exhaust of the SCR system which is used to control NO_x emissions from calciners P009, P010, P080, P092, P102 and P103. Not all calciners are currently connected by ductwork to the SCR, but may be connected in the future.

For calciners that are connected to the SCR system (P009, P010, P080, P092, P102 and/or P103), within 3-months after the issuance of the permit, the permittee shall conduct certification tests of the continuous NO_x monitoring system in units of the applicable standard(s), to demonstrate compliance with 40 CFR Part 60, Appendix B, Performance Specifications 2 and 6 and ORC section 3704.03(I).

Personnel from the Ohio EPA Central Office and the Ohio EPA Northeast District Office shall be notified 30 days prior to initiation of the applicable tests and shall be permitted to examine equipment and witness the certification tests. Two copies of the test results shall be submitted to Ohio EPA, one copy to the Ohio EPA Northeast District Office and one copy to Ohio EPA Central Office and, pursuant to OAC rule 3745-15-04, within 30 days after the test is completed.

Certification of the continuous NO_x monitoring system shall be granted upon determination by the Ohio EPA Central Office that the system meets the requirements of 40 CFR Part 60, Appendix B, Performance Specifications 2 and 6 and ORC section 3704.03(I).

Ongoing compliance with the NO_x emissions limitations contained in this permit, 40 CFR Part 60, and any other applicable standard(s) shall be demonstrated through the data collected as required in the monitoring and record keeping section of this permit and through demonstration of compliance with the quality assurance/quality control plan, which shall meet the testing and recertification requirements of 40 CFR Part 60.

e. Emission Limitation:

Calciners P009, P010, P080, P102 and P103 shall not exceed the NO_x limitation of 1.86 lbs/hr (200.0 ppmvd), excluding NO_x emissions from natural gas combustion, when operating the selective catalytic reduction (SCR) system.

Applicable Compliance Method:

Ongoing compliance with the NO_x emission limitation contained in this permit, 40 CFR Part 60 and any other applicable standard(s) shall be demonstrated through the data collected as required in the monitoring and record keeping section of this permit and through demonstration of compliance with the quality assurance/quality control plan, which shall meet the testing and recertification requirements of 40 CFR Part 60.

f. Emission Limitation:

Calciners P009, P010, P080, P102 and P103 shall not exceed the NO_x limitation of 3.4 lbs/hr (250.0 ppmvd), excluding NO_x emissions from natural gas combustion, when operating the caustic/chemical Tri-Mer scrubber.

Applicable Compliance Method:

If required, the permittee shall demonstrate compliance with this emission limitation through emission tests performed in accordance with the following methods:

for NO_x: Methods 1 through 4 and 7 or 7E of 40 CFR Part 60, Appendix A.

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

g. Design Efficiency:

For Raw Material Feed and Handling and for Product Discharge, Screening, Packaging and Handling, install a dust collector (DC #3) with a design control efficiency of at least 99% control of PM_{10}. The design control efficiency was established based on the information provided by the permittee in permit application #A0056213.

For the exhaust of the Calciner, install a wet scrubber (P010-1/F-1) with a design control efficiency of at least 95% control of PM_{10}. Tthe design control efficiency was established based on the information provided by the permittee in permit application #A0056213.

For the exhaust of the Calciner in NO_x service, install a dust collector (CTO/SCR collector) with a design control efficiency of at least 99% control of PM_{10}. The design control efficiency was established based on the information provided by the permittee in permit application #A0056213.

For the exhaust of the Calciner in NO_x service, install a wet scrubber (Tri-Mer) with a design control efficiency of at least 95% control of PM_{10}. The design control efficiency was established based on the information provided by the permittee in permit application #A0056213.

g) Miscellaneous Requirements

(1) None.

7. P131, Copper Tablet Precursor Process

Operations, Property and/or Equipment Description:

Copper tablet precursor production in Building 10, equipped a mixer and dryer with a bin vent filter; pneumatic powder transfer with a dust collector (bag filter); a mill/blend system with a dust collector. The bin vent filter and dust collectors are used for controlling particulate emissions.

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	**Design Efficiency:** For pneumatic powder transfer, install a dust collector (bag filter) with a design control efficiency of at least 99% control of PM_{10}. For the mixer, install a dust collector (bin vent) with a design control efficiency of at least 99% control of PM_{10}. For the dryer, install a dust collector (bin vent) with a design control efficiency of at least 99% control of PM_{10}. For solids conveyor, install a dust collector with a design control efficiency of at least 99% control of PM_{10}. For the mill/blend system, install a dust collector with a design control efficiency of at least 99% control of PM_{10}. PM_{10}: Emissions of particulate matter with an aerodynamic diameter less than or equal to 10 micrometers. See b)(2)a and b)(2)f.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
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 emissions of PM_{10} from this air contaminant source since the potential to emit is less than 10 tons per year. See b)(2)b.
c.	OAC rule 3745-31-05(F)	See b)(2)c and c)(2).
d.	OAC rule 3745-17-11(B)	Particulate emissions (PE) from all process operations combined, excluding PE from natural gas combustion, shall not exceed 1.51 lbs/hr. See b)(2)d.
e.	OAC rule 3745-17-10(B)	PE from the natural gas combustion process shall not exceed 0.020 lb/mmBtu of actual heat input. See b)(2)e and c)(1).
f.	OAC rule 3745-17-07(A)	Visible PE from any stack serving this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by the rule.

(2) Additional Terms and Conditions

a. The BAT emission limits apply 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).

b. 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.

c. This permit establishes the following legally and practically enforceable emission limitations. The legally and practically enforceable emission limitations are voluntary restrictions established under OAC rule 3745-31-05(F) and are based on the operational restrictions contained in c)(2) which requires the use of bin vent filters and dust collectors:

i. PE from all process operations combined, excluding PE from natural gas combustion, shall not exceed 0.27 lb/hr; and

ii. PM_{10} emissions from all process operations combined, excluding PM_{10} emissions from natural gas combustion, shall not exceed 0.27 lb/hr.

d. The allowable, hourly PE rate is based on Table I in OAC rule 3745-17-11 when the maximum process weight rate is 450 lbs/hr.

e. The dryer is a natural gas-fired unit that indirectly transfers heat to materials in this manufacturing process.

f. In order to ensure the source continues to operate as designed, the permittee shall operate this emissions unit in accordance with the company's designed estimates or manufacturer's recommendations and shall follow the company's or manufacturer's recommended maintenance at the recommended intervals. The permittee shall keep a record of the maintenance on this emissions unit along with the company's or manufacturer's recommendations.

c) Operational Restrictions

(1) The permittee shall burn only natural gas in this emissions unit.

(2) The following operational restrictions have been included in this permit for the purpose of establishing the following legally and practically enforceable requirements: [See b)(2)c.]

a. For pneumatic powder transfer, install and operate capture and control equipment having at least a 95% capture efficiency and at least a 99% control efficiency (bag filter) for the capture and removal of PE/PM_{10} emissions from operations of the pneumatic powder transfer;

b. For the mixer, install and operate capture and control equipment having at least a 95% capture efficiency and at least a 99% control efficiency (bin vent) for the capture and removal of PE/PM_{10} emissions from operations of the mixer;

c. For the dryer, install and operate capture and control equipment having at least a 95% capture efficiency and at least a 99% control efficiency (bin vent) for the capture and removal of PE/PM_{10} emissions from operations of the dryer;

d. For the solids conveyor, install and operate capture and control equipment having at least a 95% capture efficiency and at least a 99% control efficiency (dust collector) for the capture and removal of PE/PM_{10} emissions from operations of the solids transfer; and

e. For the mill/blend system, install and operate capture and control equipment having at least a 95% capture efficiency and at least a 99% control efficiency (dust collector) for the capture and removal of PE/PM_{10} emissions from operations of the mill/blend system.

d) Monitoring and/or Recordkeeping Requirements

(1) 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.

(2) The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible PE from each stack (dust collector (DC-10-01), dust collector (bag filter) and dust collector (F-10-01 bent vent)) 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. identification of the stack(s);
b. the color of the emissions;
c. whether the emissions are representative of normal operations;
d. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
e. the total duration of any visible emissions incident; and
f. 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 weekly 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) The permittee shall properly install, operate, and maintain equipment to continuously monitor the pressure drop, in inches of water, across each dust collector when the controlled emissions unit(s) is/are in operation, including periods of startup and shutdown. The permittee shall record the pressure drop across the dust collector on a weekly basis. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s), with any modifications deemed necessary by the permittee.

In order to maintain compliance with the applicable emission limitation(s) contained in this permit, the acceptable range established for the pressure drop across the dust collector (dust collector (DC-10-01)) is between 0.1 to 5 inches of water.

(4) Whenever the monitored value for the pressure drop deviates from the limit(s) or range(s) established in accordance with this permit for dust collector (DC-10-01), the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation:

a. the date and time the deviation began;
b. the magnitude of the deviation at that time;
c. the date the investigation was conducted;
d. the name(s) of the personnel who conducted the investigation; and
e. the findings and recommendations.

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

f. a description of the corrective action;

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

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

This range or limit on the pressure drop across the dust collector(s) is effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the Ohio EPA Northeast District Office. The permittee may request revisions to the permitted limit or range for the pressure drop based upon information obtained during future testing that demonstrate compliance with the allowable PE rate for the controlled emissions unit(s). In addition, approved revisions to the range or limit will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of a minor permit modification.

e) Reporting Requirements

(1) 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.

(2) The permittee shall submit semiannual written reports that identify:

a. all days during which any visible PE were observed from any stack (dust collector (DC-10-01), dust collector (bag filter) and dust collector (F-10-01 bent vent)) serving this emissions unit; and

b. any corrective actions taken to minimize or eliminate the visible PE.

These reports shall be submitted to the Director (the Ohio EPA Northeast District Office) by January 31 and July 31 of each year and shall cover the previous 6-month period.

(3) The permittee shall submit quarterly deviation (excursion) reports that identify the following occurrences:

a. each period of time (start time and date, and end time and date) when the pressure drop across the dust collector(s) (dust collector (DC-10-01)) was outside of the acceptable range;

b. any period of time (start time and date, and end time and date) when the emissions unit(s) was/were in operation and the process emissions were not vented to the dust collector(s);

c. each incident of deviation described in “a” or “b” (above) where a prompt investigation was not conducted;

d. each incident of deviation described in "a" or "b" where prompt corrective action, that would bring the pressure drop into compliance with the acceptable range, was determined to be necessary and was not taken; and

e. each incident of deviation described in "a" or "b" where proper records were not maintained for the investigation and/or the corrective action(s), as identified in the monitoring and recordkeeping requirements of this permit.

The quarterly deviation (excursion) reports shall be submitted in accordance with the reporting requirements of 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:

PE from all process operations combined, excluding PE from natural gas combustion, shall not exceed 1.51 lbs/hr.

PE from all process operations combined, excluding PE from natural gas combustion, shall not exceed 0.27 lb/hr.

PM_{10} emissions from all process operations combined, excluding PM_{10} emissions from natural gas combustion, shall not exceed 0.27 lb/hr.

Applicable Compliance Method:

Compliance is based on the summation of calculated, hourly emission rates from the following equations:

Pneumatic powder transfer – dust collector (bag filter):

E = A*B

where:

E = PE or PM_{10} emissions, in lbs/hr;
A = controlled mass emission rate, 0.58 lb of PE/ton, 0.58 lb of PM_{10}/ton (AP-42 section Carbon Black Manufacture, Table 6.1.4); and
B = maximum process weight rate, 0.193 ton/hr.

Mixer – dust collector (bin vent):

E = A*B*(1 - (0.95)(0.99))

where:

E = PE or PM_{10} emissions, in lbs/hr;

A = uncontrolled mass emission rate, 0.6 lb of PE/ton, 0.6 lb of PM_{10}/ton (AP-42 section Glass Fiber Manufacturing, Table 11.13-2);
B = maximum process weight rate, 0.22 ton/hr;
0.95 = fractional estimated capture efficiency, as provided in application; and
0.99 = fractional estimated control efficiency, as provided in application.

Drying – dust collector (bin vent):

E = A*B*(1 - (0.95)(0.99))

where:

E = PE or PM_{10} emissions, in lbs/hr;
A = uncontrolled mass emission rate, 10 lbs of PE/ton, 10 lbs of PM_{10}/ton (Manufacturer's data);
B = maximum process weight rate, 0.22 ton/hr;
0.95 = fractional estimated capture efficiency, as provided in application; and
0.99 = fractional estimated control efficiency, as provided in application.

Solids conveyor – dust collector (DC-10-01):

E = A*B*(1 - (0.95)(0.99))

where:

E = PE or PM_{10} emissions, in lbs/hr;
A = uncontrolled mass emission rate, 0.12 lb of PE/ton, 0.6 lb of PM_{10}/ton (AP-42 section 11.24, Metallic Minerals Processing, Table 11.24-2, August, 1982);
B = maximum process weight rate, 0.22 ton/hr;
0.95 = fractional estimated capture efficiency, as provided in application; and
0.99 = fractional estimated control efficiency, as provided in application.

Mill/blender – dust collector (DC-10-01):

E = A*B*(1 - (0.95)(0.99))

where:

E = PE or PM_{10} emissions, in lbs/hr;
A = uncontrolled mass emission rate, 0.6 lb of PE/ton, 0.6 lb of PM_{10}/ton (AP-42 section Glass Fiber Manufacturing, Table 11.13-2);
B = maximum process weight rate, 0.225 ton/hr;
0.95 = fractional estimated capture efficiency, as provided in application; and
0.99 = fractional estimated control efficiency, as provided in application.

If required, the permittee shall demonstrate compliance with these emission limitations through emission tests performed in accordance with the following methods:

for PE: Methods 1 through 5 of 40 CFR Part 60, Appendix A; and
for PM_{10}: Method 201 or 202A and 202 of 40 CFR Part 51, Appendix M.

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

b. Emission Limitation:

PE from the natural gas combustion process shall not exceed 0.020 lb/mmBtu of actual heat input.

Applicable Compliance Method:

Compliance is based on the following equation:

Natural gas combustion:

E = A/B

where:

E = PE rate, in lb/mmBtu of actual heat input;
A = emission factor, which is 7.6 lbs PE/PM_{10} per million cubic foot of natural gas fuel flow per (AP-42 section 1.4, Natural Gas Combustion, Table 1.4-2, July, 1998); and
B = heat content of natural gas, which is 1020 Btu/cf.

c. Emission Limitation:

Visible PE from any stack serving this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by the rule.

Applicable Compliance Method:

If required, compliance with the stack visible PE limitation shall be demonstrated through visible emission observations performed in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Method 9.

d. Design Efficiencies:

For pneumatic powder transfer, install a dust collector with a design control efficiency of at least 99% control of PM_{10}. The design control efficiency was established based on the information provided by the permittee in permit application #A0056213;

For the mixer, install a dust collector with a design control efficiency of at least 99% control of PM_{10}. The design control efficiency was established based on the information provided by the permittee in permit application #A0056213;

For drying operation, install a dust collector with a design control efficiency of at least 99% control of PM_{10}. The design control efficiency was established based on the information provided by the permittee in permit application #A0056213;

For solids conveying, install a dust collector with a design control efficiency of at least 99% control of PM_{10}. The design control efficiency was established based on the information provided by the permittee in permit application #A0056213; and

For mill/blend operation, install a dust collector with a design control efficiency of at least 99% control of PM_{10}. The design control efficiency was established based on the information provided by the permittee in permit application #A0056213.

g) Miscellaneous Requirements

(1) None.