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

4/10/2015

Certified Mail

Mr. Dan Call
Ironrock Capital, Inc.
1201 Millerton Road S.E.
Canton, OH 44707

Facility ID: 1576051149
Permit Number: P0101219
County: Stark

RE: DRAFT AIR POLLUTION TITLE V PERMIT
Permit Type: Renewal

Dear Permit Holder:

A draft of the OAC Chapter 3745-77 Title V permit for the referenced facility has been issued. The purpose of this draft is to solicit public comments. A public notice will appear in the Ohio Environmental Protection Agency (EPA) Weekly Review and the local newspaper, The Canton Repository. A copy of the public notice, the Statement of Basis, 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

Canton City Health Department
420 Market Avenue
Canton, OH 44702-1544

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 if a public hearing is scheduled. A decision on processing the Title V permit will be made after consideration of comments received and oral testimony if a public hearing is conducted. You will then be provided with a Preliminary Proposed Title V permit and another opportunity to comment prior to the 45-day Proposed Title V permit submittal to U.S. EPA Region 5. The permit will be issued final after U.S. EPA review is completed and no objections to the final issuance have been received. If you have any questions, please contact Canton City Health Department at (330)489-3385.

Sincerely,

Erica R. Engel-Ishida, Manager
Permit Issuance and Data Management Section, DAPC

Cc: U.S. EPA Region 5 - *Via E-Mail Notification*
Canton; Pennsylvania; West Virginia

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 Title V Permit Renewal
Ironrock Capital, Inc.
1201 Millerton Road S.E., , Canton, OH 44707
ID#: P0101219
Date of Action: 4/10/2015
PermitDesc: Title V Renewal Permit for Ironrock Capital, Inc., a manufacturer of tiles from clay and shale, including primary crushing of raw clay and shale, secondary grinding and screening, and five NG-fired tunnel kilns. Major source for SO2 and HF. The facility has five insignificant EUs, none of which have any applicable permitting requirements..
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: David Hampton, Canton City Health Department, 420 Market Avenue, Canton, OH 44702-1544. Ph: (330)489-3385

Statement of Basis For Air Pollution Title V Permit

Facility ID:	1576051149
Facility Name:	Ironrock Capital, Inc.
Facility Description:	Manufacturer of tiles from clay and shale.
Facility Address:	1201 Millerton Road S.E., Canton, OH 44707
Permit #:	P0101219, Renewal

This facility is subject to Title V because it is major for:

☐ Lead ☒ Sulfur Dioxide ☐ Carbon Monoxide ☐ Volatile Organic Compounds ☐ Nitrogen Oxides
☐ Particulate Matter ≤ 10 microns ☒ Single Hazardous Air Pollutant (hydrogen fluoride) ☐ Combined Hazardous Air Pollutants
☐ Maximum Available Control Technology Standard(s) ☐ GHG ☐ Title IV

A. Standard Terms and Conditions

Has each insignificant emissions unit been reviewed to confirm it meets the definition in OAC rule 3745-77-01(U)?	Yes
Were there any "common control" issues associated with this facility? If yes, provide a summary of those issues and explain how the DAPC decided to resolve them.	No
Please identify the affected unit(s) and associated PTI, if applicable, along with a brief description of any changes to the permit document that qualify as a minor permit modification per OAC rule 3745-77-08(C)(1)	N/A
Please identify the affected unit(s) and associated PTI, if applicable, along with a brief description of any changes to the permit document that qualify as a significant permit modification per OAC rule 3745-77-08(C)(3)	N/A

Please identify the affected unit(s)and associated PTI, if applicable, along with a brief description of any changes to the permit document that qualify as a reopening per OAC rule 3745-77-08(D)	N/A
Please identify the affected unit(s) and associated PTI, if applicable, along with a brief description of any changes to the permit document resulting from a renewal per OAC rule 3745-77-08(E)	1. F004 was merged with P011 because they represent one continuous process. Admin. mod. PTI P0109639. 2. For the purpose of writing one set of terms and conditions, EU Group X002 (Tunnel Kiln Group) was formed consisting of P004, P005, P006 and P014. All are identical tunnel kilns and all share a common stack. Admin. mod. PTI P010963. 3. P015 and P017 were removed due to permanent shutdown. 4. All of the insignificant emissions units (IEUs) listed in the initial Title V permit (6/20/2003) were removed from the renewal permit based on the February 2010 changes to OAC Chapter 3745-77 which effectively said that only those de minimis or PTI-exempt operations with [other] applicable requirements should be included in the Title V permit. None of the IEUs at this facility have applicable requirements. 5. The permit was updated to the latest format and standard library terms and conditions. 6. A term was added to the Facility-Wide sections regarding MACT subpart JJJJJ, which was vacated by the D.C. Circuit Court in 2007. 7. The authority for term was added to each term and condition.
Please identify the affected unit(s) and pollutant(s) for which a Compliance Assurance Monitoring (CAM) Plan is required per 40 CFR 64. Provide more emissions unit specific detail in Section C.	P011 for particulate emissions: Uncontrolled PTE = 1,206 tons/year. Controlled by fabric filter. P012 for particulate emissions:Uncontrolled PTE = 112,250 tons/year. Controlled by 2 fabric filters.

B. Facility-Wide Terms and Conditions

Term and Condition (paragraph)	Basis		Comments
	SIP (3745-)	Other	
B.1.	77-07(B)		B.2. (definitions) identified as state-only enforceable, all other facility-wide T&Cs are fed enforceable.
B.2.	N	N	A short list of definitions was to this permit to enhance clarity.
B.3.	25-04		Permittee must submit emission control action programs in accordance with this rule and Engineering Guide #64 because the facility may emit 0.25 tons per day or more of SO_2.
B.4.	31-01 77-01 77-02		Facility identified as a major source in an attainment area because PTE for $SO_2 \geq 250$ tpy. Facility identified as a major source for Title V because PTE for $SO_2 \geq 100$ tpy and PTE for single-HAP hydrogen fluoride ≥10 tpy.
B.5.		Y	EUs P011 and P012 subject to NSPS Subpart OOO (Nonmetallic mineral processing plants).
B.6.		Y	EUs P004, P005, P006, and P014 *may* have been subject to MACT Subpart JJJJJ (Brick and structural

			clay products manufacturing) had it not been vacated by the D.C. Circuit Court in 2007. But noted that none of these EUs would actually have been subject to the emissions limits in Table 1 of Subpart JJJJJ because none meet the definition of either “existing large tunnel kilns” or “new or reconstructed small tunnel kilns.”
B.7.	N	Y	EUs P011 and P012 subject to 40 CFR Part 64 (compliance assurance monitoring (CAM)).
B.8.	77-07(A)(13)		None of the insignificant emissions units (IEUs) at this facility have applicable requirements.

C. Emissions Unit Terms and Conditions

Key:
EU = emissions unit ID
ND = negative declaration (i.e., term that indicates that a particular rule(s) is (are) not applicable to a specific emissions unit)
OR = operational restriction
M = monitoring requirements
ENF = did noncompliance issues drive the monitoring requirements?
R = record keeping requirements
Rp = reporting requirements
ET = emission testing requirements (not including compliance method terms)
St = streamlining term used to replace a PTI monitoring, record keeping, or reporting requirement with an equivalent or more stringent requirement
Misc = miscellaneous requirements

EU(s)	Limitation	Basis		ND	OR	M	ENF	R	Rp	ET	St	Misc	Comments
		SIP (3745-)	Other										
F001 Road-ways & Parking Areas	b)(1)a. No VEs except 6 min per hr (paved)	17-07(B)(4)		N	N	Y	N	Y	Y	N	N	N	N for OR: None needed for roadways since control measures listed in b)(2) are adequate. Y for M,R,Rp: VE checks N for ET: If the control measures are followed, the VE limitation should be met. Official Method 9 VE readings may be taken by the agency at any inspection or the Agency may require the facility to take Method 9 readings. N for Misc: none needed.
F001	b)(1)b. No VEs except 13 min per hr (unpaved)	17-07(B)(5)		N	N	Y	N	Y	Y	N	N	N	N for OR: None needed for roadways since control measures listed in b)(2) are adequate. Y for M,R,Rp: VE checks N for ET: If the control measures are followed, the VE limitation should be met. Official Method 9 VE readings may be taken by the agency at any inspection or the Agency may require the facility to take Method 9 readings. N for Misc: none needed.
F001	b)(1)c. RACM for fugitive dust (paved)	17-08(B)		N	N	Y	N	Y	Y	N	N	N	RACM applies because facility is in an Appendix A area. RACM listed in b)(2). Y for M,R,Rp: VE checks and controls implemented.

F001	b)(1)d. RACM for fugitive dust (unpaved)	17-08(B)		N	N	Y	N	Y	Y	N	N	N	RACM applies because facility is in an Appendix A area. RACM listed in b)(2). Y for M,R,Rp: VE checks and controls implemented.
F001	b)(2)c. RACM (paved)	17-08(B)(8)		N	N	Y	N	Y	Y	N	N	N	N for OR and Misc.: None needed. Y for M,R,Rp: VE checks and controls implemented. N for ET: The M, R, and Rp requirements will ensure compliance.
F001	b)(2)d. promptly remove, in such a manner as to minimize or prevent resuspension, earth and/or other material from paved surfaces	17-08(B)(9)		N	N	Y	N	Y	Y	N	N	N	N for OR and Misc.: None needed. Y for M,R,Rp: VE checks and controls implemented. N for ET: The M, R, and Rp requirements will ensure compliance.
F001	b)(2)e. RACM (unpaved)	17-08(B)(2)		N	N	Y	N	Y	Y	N	N	N	N for OR and Misc.: None needed. Y for M,R,Rp: VE checks and controls implemented. N for ET: The M, R, and Rp requirements will ensure compliance.
F001	b)(2)f. control measures shall be implemented at frequencies that will minimize or eliminate visible emissions of fugitive dust generated by vehicle traffic and ensure compliance with the above-mentioned visible emissions limitations	17-08(B)		N	N	Y	N	Y	Y	N	N	N	N for OR and Misc.: None needed. Y for M,R,Rp: VE checks and controls implemented. N for ET: The M, R, and Rp requirements will ensure compliance.
F001	b)(2)h. Open-bodied vehicles transporting materials likely to become airborne shall have such materials covered at all times if the control measure is necessary to minimize or eliminate visible emissions of fugitive dust	17-08(B)(7)		N	N	Y	N	Y	Y	N	N	N	N for OR and Misc.: None needed. Y for M,R,Rp: VE checks and controls implemented. N for ET: The M, R, and Rp requirements will ensure compliance.
P011 Material receiving, crushing and storage for shale and clay	b)(1)a. 5.00 lbs/hr of PEs	31-05(A)(3)		N	N	N	N	N	N	N	N	N	N for M, R, Rp, ET: The hourly emission limitation is set at maximum controlled potential to emit, so no M, R, Rp is necessary to ensure compliance. N for OR: None required since limitation of controls already stated in b)(2)a.
P011	b)(1)a. 3.06 tpy of PEs	31-05(A)(3)		N	Y	Y	N	Y	Y	N	N	N	Y for OR: There is a restriction on the amount of materials crushed per year. N for ET: None Needed.

P011	b)(1)b. 40 CFR Part 60, Subpart OOO	N	Y	N	N	Y	N	Y	Y	Y	N	Y	Y for Other: NSPS OOO. N for OR: None needed. Y for M,R,Rp: VE checks. Y for ET: If required per rule. Y for Misc: informational note on applicability.
P011	b)(1)c. 40 CFR Part 60, Subpart A (general provisions)	N	Y	N	N	N	N	N	N	N	N	N	Y for Other: NSPS A general provisions. N for OR M, R, Rp, and Misc.: None needed.
P011	b)(1)d. 40 CFR Part 64, (CAM)	N	Y	N	N	Y	N	Y	Y	Y	N	N	Y for Other: Compliance Assurance Monitoring. N for OR: None needed since limitation of controls already stated in b)(2)a. Y for M,R,Rp: daily pressure drop and QIP requirements. Y for ET: testing per OAC rule 3745-31-05(A)(3) and NSPS OOO satisfies requirements.
P011	b)(1)e. Less stringent than 40 CFR Part 60, Subpart OOO	17-07(A)		N	N	N	N	N	N	N	N	N	See 40 CFR Part 60, Subpart OOO.
P011	b)(1)f. Less stringent than 31-05(A)(3) and 40 CFR Part 60, Subpart OOO	17-07(B)(1)		N	N	N	N	N	N	N	N	N	See 3745-31-05(A)(3) and 40 CFR Part 60, Subpart OOO.
P011	b)(1)g. Equal or less stringent than 31-05(A)(3) and 40 CFR Part 60, Subpart OOO	17-08(B)		N	N	N	N	N	N	N	N	N	See 3745-31-05(A)(3) and 40 CFR Part 60, Subpart OOO.
P011	b)(1)h. Less stringent than 31-05(A)(3)	17-11(B)		N	N	N	N	N	N	N	N	N	See 3745-31-05(A)(3).
P011	b)(2)a.i. While truck dumping at 3-sided enclosure, VE not exceed 10% as 3-minute average	31-05(A)(3)		N	N	Y	N	Y	Y	N	N	N	N for OR: None needed. N for ET: ET must be performed 6 months after issuance and 6 months before expiration. N for Misc: None needed. Y for M,R,Rp: VE checks.
P011	b)(2)a.ii. Truck dump hoppers serviced by water sprays, and a fabric filter with a collection efficiency sufficient to minimize or eliminate VEs at the point of capture.	31-05(A)(3)	Y	N	N	Y	N	Y	Y	N	N	N	Y for Other: The basis of the limitation is also40 CFR Part 64. N for OR: None needed. N for ET: None needed as fabric filter stack exhausts inside building and emissions will be treated as fugitive dust from building openings. N for Misc: None needed. Y for M,R,Rp: pressure drop and VE checks.
P011	b)(2)a.iii. Certain processes vented to	31-05(A)(3)	Y	N	N	Y	N	Y	Y	N	N	N	Y for Other: The basis of the limitation is also 40 CFR Part 64.

	fabric filter at all times EU in operation.												N for OR: None needed. N for ET and Misc: None needed. Y for M,R,Rp: pressure drop and VE checks.
P011	b)(2)a.iv. Crushing and storage take place within totally enclosed buildings.	31-05(A)(3)		N	N	N	N	N	N	N	N	N	N for OR and Misc.: None needed. N for M, R, Rp, and ET: has been or will be verified by inspection of the operation by the Ohio EPA.
P011	b)(2)a.v. Any belt conveyor not contained within totally enclosed building shall be covered.	31-05(A)(3)		N	N	N	N	N	N	N	N	N	N for OR and Misc.: None needed. N for M, R, Rp, and ET: has been or will be verified by inspection of the operation by the Ohio EPA.
P011	b)(2)a.vi. No vents in buildings containing affected facilities.	31-05(A)(3)		N	N	N	N	N	N	N	N	N	N for OR and Misc.: None needed. N for M, R, Rp, and ET: has been or will be verified by inspection of the operation by the Ohio EPA.
P011	b)(2)a.vii. Load-in and load-out of stored materials using front-end loader, drop height shall be minimized.	31-05(A)(3)		N	N	N	N	N	N	N	N	N	N for OR and Misc.: None needed. N for M, R, Rp, and ET: has been or will be verified by inspection of the operation by the Ohio EPA.
P011	b)(2)b.i. Conveyor belts not enclosed within building, fugitive emissions from any openings in the conveyor belt coverings shall not exceed 10% opacity as a 6-minute average.	31-05(A)(3)	Y	N	N	Y	N	Y	Y	Y	N	N	Y for Other: The basis of the limitation is also NSPS OOO §60.672(b). N for OR and Misc.: None needed. Y for ET: ET must be performed 6 months after issuance and 6 months before expiration. Y for M,R,Rp: VE checks.
P011	b)(2)b.ii. Affected facilities enclosed in building: Fugitive emissions from building openings shall not exceed 7% opacity as a 6-minute average.	31-05(A)(3)	Y	N	N	Y	N	Y	Y	Y	N	N	Y for Other: The basis of the limitation is also NSPS OOO §60.672(e)(1). N for OR and Misc.: None needed. Y for ET: If required per NSPS OOO rule. Y for M,R,Rp: VE checks.
P012 Grinding and screening	b)(1)a. 25.0 tpy PE	31-05(A)(3)		N	Y	Y	N	Y	Y	N	N	N	Y for OR: There is a restriction on the amount of material throughput per year. N for ET and Misc.: None Needed.
P012	b)(1)b. 40 CFR Part 60, Subpart OOO	N	Y	N	N	Y	N	Y	Y	Y	N	N	Y for Other: NSPS OOO. N for OR and Misc.: None needed.
P012	b)(1)c. 40 CFR Part 60, Subpart A (general provisions)	N	Y	N	N	N	N	N	N	N	N	N	Y for Other: NSPS A general provisions. N for OR M, R, Rp, and Misc.: None needed.
P012	b)(1)d. 40 CFR Part 64, (CAM)	N	Y	N	N	Y	N	Y	Y	Y	N	N	Y for Other: Compliance Assurance Monitoring. N for OR: None needed since limitation of controls already stated in b)(2)a.

													Y for M,R,Rp: daily pressure drop and QIP requirements. Y for ET: testing per OAC rule 3745-31-05 and NSPS OOO satisfies requirements.
P012	b)(1)e. Less stringent than 40 CFR Part 60, Subpart OOO	17-07(A)		N	N	N	N	N	N	N	N	N	See 40 CFR Part 60, Subpart OOO.
P012	b)(1)f. Less stringent than 40 CFR Part 60, Subpart OOO	17-07(B)(1)		N	N	N	N	N	N	N	N	N	See 40 CFR Part 60, Subpart OOO
P012	b)(1)g. Equal or less stringent than 31-05(A)(3) and 40 CFR Part 60, Subpart OOO.	17-08(B)		N	N	N	N	N	N	N	N	N	See 3745-31-05(A)(3) and 40 CFR Part 60, Subpart OOO.
P012	b)(1)h. Less stringent than 31-05(A)(3)	17-11(B)		N	N	N	N	N	N	N	N	N	See 3745-31-05(A)(3).
P012	b)(2)a.i. Grinding, screening, and storage take place within totally enclosed buildings.	31-05(A)(3)		N	N	N	N	N	N	N	N	N	N for OR and Misc.: None needed. N for M, R, Rp, and ET: has been or will be verified by inspection of the operation by the Ohio EPA.
P012	b)(2)a.ii. Grinding, screening, and conveyor transfer points serviced by fabric filters with collection efficiencies sufficient to minimize or eliminate VEs at the point of capture.	31-05(A)(3)	Y	N	N	Y	N	Y	Y	N	N	N	Y for Other: The basis of the limitation is also 40 CFR Part 64. N for OR: None needed. N for ET: None needed as fabric filter stack exhausts inside building and emissions will be treated as fugitive dust from building openings. N for Misc: None needed. Y for M,R,Rp: pressure drop and VE checks.
P012	b)(2)a.iii. Certain processes vented to fabric filter at all times EU in operation.	31-05(A)(3)	Y	N	N	Y	N	Y	Y	N	N	N	Y for Other: The basis of the limitation is also 40 CFR Part 64. N for OR: None needed. N for ET and Misc: None needed. Y for M,R,Rp: pressure drop and VE checks.
P012	b)(2)a.iv. Any belt conveyor not contained within totally enclosed building shall be covered.	31-05(A)(3)		N	N	N	N	N	N	N	N	N	N for OR and Misc.: None needed. N for M, R, Rp, and ET: has been or will be verified by inspection of the operation by the Ohio EPA.
P012	b)(2)a.v. Load-in and load-out of crushed materials on conveyor belt using front-end loader, drop height shall be minimized.	31-05(A)(3)		N	N	N	N	N	N	N	N	N	N for OR and Misc.: None needed. N for M, R, Rp, and ET: has been or will be verified by inspection of the operation by the Ohio EPA.

P012	b)(2)b.i. Conveyor belts not enclosed within building, fugitive emissions from any openings in the conveyor belt coverings shall not exceed 10% opacity as a 6-minute average.	31-05(A)(3)	Y	N	N	Y	N	Y	Y	Y	N	N	Y for Other: The basis of the limitation is also NSPS OOO §60.672(b). N for OR and Misc.: None needed. Y for ET: ET must be performed 6 months after issuance and 6 months before expiration. Y for M,R,Rp: VE checks.
P012	b)(2)b.ii. Affected facilities enclosed in building: Fugitive emissions from building openings shall not exceed 7% opacity as a 6-minute average.	31-05(A)(3)	Y	N	N	Y	N	Y	Y	Y	N	N	Y for Other: The basis of the limitation is also NSPS OOO §60.672(e)(1). N for OR and Misc.: None needed. Y for ET: If required per NSPS OOO rule. Y for M,R,Rp: VE checks.
Group X002: P004, Tunnel Kiln #1; P005, Tunnel Kiln #2; P006, Tunnel Kiln #3; P014, Tunnel Kiln #4	b)(1)a. 76.65 lbs/hr weekly average of SO_2 from P004, P005, P006, and P014 combined.	31-05(A)(3)		N	Y	Y	N	Y	Y	Y	N	Y	Y for OR: Only natural gas to be burned and weekly and quarterly restrictions on the amount of sulfur used in P004, P005, P006, and P014. Y for Misc.: Procedure for calculating sulfur emission factor and sulfur usage limitations. Y for M,R,Rp: fuel usage, sulfur usage and content, and sulfur hourly emissions. Y for ET: ET must be performed 6 months after issuance and 6 months before expiration.
Group X002	b)(1)a. 12,877 lb/week in any 7-day week of SO_2 from P004, P005, P006, and P014 combined.	31-05(A)(3)		N	Y	Y	N	Y	Y	N	N	Y	Y for OR: Only natural gas to be burned and weekly and quarterly restrictions on the amount of sulfur used in P004, P005, P006, and P014. N for Misc.: Procedure for calculating sulfur emission factor and sulfur usage limitations. Y for M,R,Rp: fuel usage, sulfur usage and content, and sulfur hourly emissions. N for ET: The ET will determine the hourly SO2 and the weekly SO2 can be determined by calculation.
Group X002	b)(1)a. 306.53 tpy of SO_2 from P004, P005, P006, and P014 combined.	31-05(A)(3)		N	Y	Y	N	Y	Y	N	N	Y	Y for OR: Only natural gas to be burned and weekly and quarterly restrictions on the amount of sulfur used in P004, P005, P006, and P014. N for ET: The ET will determine the hourly SO2 and the annual SO2 can be determined by calculation. Y for Misc: Ironrock is a major (PSD) source with respect to SO2; and procedure for calculating sulfur emission factor and sulfur usage limitations. Y for M,R,Rp: fuel usage, sulfur usage and content, and sulfur hourly emissions.

Group X002	b)(1)a. 6.5 lbs/hr of F^- from P004, P005, P006, and P014 combined.	31-05(A)(3)		N	Y	Y	N	Y	Y	Y	N	N	Y for OR: Only natural gas to be burned in P004, P005, P006, and P014. Y for M,R,Rp: fuel usage. Y for ET: ET must be performed 6 months after issuance and 6 months before expiration.
Group X002	b)(1)a. 28.47 tpy of F^- from P004, P005, P006, and P014 combined.	31-05(A)(3)		N	Y	Y	N	Y	Y	N	N	N	Y for OR: Only natural gas to be burned in P004, P005, P006, and P014. Y for M,R,Rp: fuel usage. N for ET: The ET will determine the hourly F^- and the annual F^- can be determined by calculation.
Group X002	b)(1)a. 21.65 lbs/hr of PE/PM from P004, P005, P006, and P014 combined.	31-05(A)(3)		N	Y	Y	N	Y	Y	Y	N	N	Y for OR: Only natural gas to be burned in P004, P005, P006, and P014. Y for M,R,Rp: fuel usage. Y for ET: ET must be performed 6 months after issuance and 6 months before expiration.
Group X002	b)(1)a. 94.83 tpy of PE/PM from P004, P005, P006, and P014 combined.	31-05(A)(3)		N	Y	Y	N	Y	Y	N	N	N	Y for OR: Only natural gas to be burned in P004, P005, P006, and P014. Y for M,R,Rp: fuel usage. N for ET: The ET will determine the hourly PE and the annual PEs can be determined by calculation.
Group X002	b)(1)a. 16.06 lbs/hr of NOx from P004, P005, P006, and P014 combined.	31-05(A)(3)		N	Y	Y	N	Y	Y	Y	N	N	Y for OR: Only natural gas to be burned in P004, P005, P006, and P014. Y for M,R,Rp: fuel usage. Y for ET: ET must be performed 6 months after issuance and 6 months before expiration.
Group X002	b)(1)a. 70.34 tpy of NOx from P004, P005, P006, and P014 combined.	31-05(A)(3)		N	Y	Y	N	Y	Y	N	N	N	Y for OR: Only natural gas to be burned in P004, P005, P006, and P014. Y for M,R,Rp: fuel usage. N for ET: The ET will determine the hourly NOx and the annual NOx can be determined by calculation.
Group X002	b)(1)b. VE from common stack shall not exceed 20% opacity, as a 6-minute average	17-07(A)(1)		N	N	Y	N	Y	Y	Y	N	N	N for OR: None needed. N for Misc: None needed. Y for M,R,Rp: VE checks. Y for ET: ET must be performed 6 months after issuance and 6 months before expiration.
Group X002	b)(1)c. Less stringent than 31-05(A)(3)	17-11(B)		N	N	N	N	N	N	N	N	N	See 3745-31-05(A)(3).
Group X002	b)(1)d. Less stringent than 31-05(A)(3)	18-06(E)(1) 18-82(A)(3)		N	N	N	N	N	N	N	N	N	See 3745-31-05(A)(3).
Group X002	b)(2)b. Stack height shall be a minimum of 45 meters from ground level.	31-05(A)(3)		N	N	N	N	N	N	N	N	N	N for OR, M, R, Rp, and Misc.: None needed. N for ET: has been or will be verified by inspection of the operation by the Ohio EPA.

DRAFT

Division of Air Pollution Control
Title V Permit
for
Ironrock Capital, Inc.

Facility ID:	1576051149
Permit Number:	P0101219
Permit Type:	Renewal
Issued:	4/10/2015
Effective:	To be entered upon final issuance
Expiration:	To be entered upon final issuance

Division of Air Pollution Control
Title V Permit
for
Ironrock Capital, Inc.

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Authorization

Facility ID:	1576051149
Facility Description:	Manufacturer of tiles from clay and shale.
Application Number(s):	A0033001, A0033002, A0033003
Permit Number:	P0101219
Permit Description:	Title V Renewal Permit for Ironrock Capital, Inc., a manufacturer of tiles from clay and shale, including primary crushing of raw clay and shale, secondary grinding and screening, and five NG-fired tunnel kilns. Major source for SO2 and HF. The facility has five insignificant EUs, none of which have any applicable permitting requirements.
Permit Type:	Renewal
Issue Date:	4/10/2015
Effective Date:	To be entered upon final issuance
Expiration Date:	To be entered upon final issuance
Superseded Permit Number:	P0101218

This document constitutes issuance of an OAC Chapter 3745-77 Title V permit to:

Ironrock Capital, Inc.
1201 Millerton Road S.E.
Canton, OH 44707

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

Canton City Health Department
420 Market Avenue
Canton, OH 44702-1544
(330)489-3385

The above named entity is hereby granted a Title V permit pursuant to Chapter 3745-77 of the Ohio Administrative Code. This permit and the authorization to operate the air contaminant sources (emissions units) at this facility shall expire at midnight on the expiration date shown above. You will be sent a notice approximately 18 months prior to the expiration date regarding the renewal of this permit. If you do not receive a notice, please contact the Canton City Health Department. If a renewal permit is not issued prior to the expiration date, the permittee may continue to operate pursuant to OAC rule 3745-77-08(E) and in accordance with the terms of this permit beyond the expiration date, if a timely renewal application is submitted. A renewal application will be considered timely if it is submitted no earlier than 18 months and no later than 6 months prior to the expiration date.

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency

Craig W. Butler
Director

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. 24., Reporting Requirements Related to Monitoring and Record Keeping Requirements of State-Only Enforceable Permit Terms and Conditions

(2) Standard Term and Condition A. 25., Records Retention Requirements for State-Only Enforceable Permit Terms and Conditions

(3) Standard Term and Condition A. 27., Scheduled Maintenance/Malfunction Reporting For State-Only Requirements

(4) Standard Term and Condition A. 29., Additional Reporting Requirements When There Are No Deviations of Federally Enforceable Emission Limitations, Operational Restrictions, or Control Device Operating Parameter Limitations

(5) Standard Term and Condition A. 30.

(Authority for term: ORC 3704.036(A))

2. 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 (i.e., in section C. Emissions Unit Terms and Conditions of this Title V permit), 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.

(Authority for term: OAC rule 3745-77-07(A)(3)(b)(i))

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 all calibration and maintenance records and all original strip-chart recordingsfor continuous monitoring instrumentation, and copies of all reports required by this permit. Such records may be maintained in computerized form.

(Authority for term: OAC rule 3745-77-07(A)(3)(b)(ii))

c) The permittee shall submit required reports in the following manner:

(1) All reporting required in accordance with OAC rule 3745-77-07(A)(3)(c) for deviations caused by malfunctions shall be submitted in the following manner:

Any malfunction, as defined in OAC rule 3745-15-06(B)(1), shall be promptly reported to the Ohio EPA in accordance with OAC rule 3745-15-06. In addition, to fulfill the OAC rule 3745-77-07(A)(3)(c) deviation reporting requirements for malfunctions, written reports that identify each malfunction that occurred during each calendar quarter (including each malfunction reported only verbally in accordance with OAC rule 3745-15-06) shall be submitted by January 31, April 30, July 31, and October 31 of each year in accordance with Standard Term and Condition A.2.c)(2) below; and each report shall cover the previous calendar quarter. An exceedance of the visible emission limitations specified in OAC rule 3745-17-07(A)(1) that is caused by a malfunction is not a violation and does not need to be reported as a deviation if the owner or operator of the affected air contaminant source or air pollution control equipment complies with the requirements of OAC rule 3745-17-07(A)(3)(c).

In accordance with OAC rule 3745-15-06, a malfunction reportable under OAC rule 3745-15-06(B) is a deviation of the federally enforceable permit requirements. Even though verbal notifications and written reports are required for malfunctions pursuant to OAC rule 3745-15-06, the written reports required pursuant to this term must be submitted quarterly to satisfy the prompt reporting provision of OAC rule 3745-77-07(A)(3)(c).

In identifying each deviation caused by a malfunction, the permittee shall specify the emission limitation(s) (or control requirement(s)) for which the deviation occurred, describe each deviation, and provide the magnitude and duration of each deviation. For a specific malfunction, if this information has been provided in a written report that was submitted in accordance with OAC rule 3745-15-06, the permittee may simply reference that written report to identify the deviation. Nevertheless, all malfunctions, including those reported only verbally in accordance with OAC rule 3745-15-06, must be reported in writing on a quarterly basis.

Any submittedscheduled maintenancerequests, as referenced in OAC rule 3745-15-06(A)(1), that results in a deviation from a federally enforceable emission limitation (or control requirement) shall be reported in the same manner as described above for malfunctions.

(Authority for term: OAC rule 3745-77-07(A)(3)(c))

(2) Except as may otherwise be provided in the terms and conditions for a specific emissions unit (i.e., in section C. Emissions Unit Terms and Conditions of this Title V permit or, in some cases, in section B. Facility-Wide Terms and Conditions of this Title V permit), all reporting required in accordance with OAC rule 3745-77-07(A)(3)(c) for deviations of the emission limitations, operational restrictions, and control device operating parameter limitations shall be submitted in the following manner:

Written reports of (a) any deviations from federally enforceable emission limitations, operational restrictions, and control device operating parameter limitations, (b) the probable cause of such deviations, and (c) any corrective actions or preventive measures taken, shall be submitted promptly to the Canton City Health Department. Except as provided below, the written reports shall be submitted by January 31, April 30, July 31, and October 31 of each year; and each report shall cover the previous calendar quarter.

In identifying each deviation, the permittee shall specify the emission limitation(s), operational restriction(s), and/or control device operating parameter limitation(s) for which the deviation occurred, describe each deviation, and provide the estimated magnitude and duration of each deviation.

These written deviation reports shall satisfy the requirements of OAC rule 3745-77-07(A)(3)(c) pertaining to the submission of monitoring reports every six months and to the prompt reporting of all deviations. Full compliance with OAC rule 3745-77-07(A)(3)(c) requires reporting of all other deviations of the federally enforceable requirements specified in the permit as required by such rule.

If an emissions unit has a deviation reporting requirement for a specific emission limitation, operational restriction, or control device operating parameter limitation that is not on a quarterly basis (e.g., within 30 days following the end of the calendar month, or within 30 or 45 days after the exceedance occurs), that deviation reporting requirement satisfies the reporting requirements specified in this Standard Term and Condition for that specific emission limitation, operational restriction, or control device parameter limitation. Following the provisions of that non-quarterly deviation reporting requirement will also satisfy (for the deviations so reported) the requirements of OAC rule 3745-77-07(A)(3)(c) pertaining to the submission of monitoring reports every six months and to the prompt reporting of all deviations, and additional quarterly deviation reports for that specific emission limitation, operational restriction, or control device parameter limitation are not required pursuant to this Standard Term and Condition.

See A.29 below if no deviations occurred during the quarter.

(Authority for term: OAC rule 3745-77-07(A)(3)(c))

(3) All reporting required in accordance with the OAC rule 3745-77-07(A)(3)(c) for other deviations of the federally enforceable permit requirements which are not reported in accordance with Standard Term and Condition A.2)c)(2) above shall be submitted in the following manner:

Unless otherwise specified by rule, written reports that identify deviations of the following federally enforceable requirements contained in this permit; Standard Terms and Conditions: A.3, A.4, A.5, A.7.e), A.8, A.13, A.15, A.19, A.20, A.21, and A.23 of this Title V permit, as well as any deviations from the requirements in section C. Emissions Unit Terms and Conditions of this Title V permit, and any monitoring, record keeping, and reporting requirements, which are not reported in accordance with Standard Term and Condition A.2.c)(2) above shall be submitted to the Canton City Health Department by January 31 and July 31 of each year; and each report shall cover the previous six calendar months. Unless otherwise specified by rule, all other deviations from federally

enforceable requirements identified in this permit shall be submitted annually as part of the annual compliance certification, including deviations of federally enforceable requirements not specifically addressed by permit or rule for the insignificant activities or emissions levels (IEU) identified in section B. Facility-Wide Terms and Conditions of this Title V permit. Annual reporting of deviations is deemed adequate to meet the deviation reporting requirements for IEUs unless otherwise specified by permit or rule.

In identifying each deviation, the permittee shall specify the federally enforceable requirement for which the deviation occurred, describe each deviation, and provide the magnitude and duration of each deviation.

These semi-annual and annual written reports shall satisfy the reporting requirements of OAC rule 3745-77-07(A)(3)(c) for any deviations from the federally enforceable requirements contained in this permit that are not reported in accordance with Standard Term and Condition A.2.c)(2) above.

If no such deviations occurred during a six-month period, the permittee shall submit a semi-annual report which states that no such deviations occurred during that period.

(Authority for term: OAC rules 3745-77-07(A)(3)(c)(i) and (ii) and OAC rule 3745-77-07(A)(13)(b))

(4) 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 (including any written malfunction reports required by OAC rule 3745-15-06 that are referenced in the deviation reports) are true, accurate, and complete." Signature by the Responsible Official may be represented by entry of the personal identification number (PIN) by the Responsible Official as part of the electronic submission process or by the scanned attestation document signed by the Responsible Official that is attached to the electronically submitted written report.

(Authority for term: OAC rule 3745-77-07(A)(3)(c)(iv))

(5) Consistent with A.2.c.1. above, reports of any required monitoring and/or record keeping information required to be submitted to Ohio EPA shall be submitted to Canton City Health Department unless otherwise specified.

(Authority for term: OAC rule 3745-77-07(A)(3)(c))

3. Reporting of Any Exceedence of a Federally Enforceable Emission Limitation or Control Requirement Resulting From Scheduled Maintenance

Any scheduled maintenance of air pollution control equipment shall be performed in accordance with paragraph (A) of OAC rule 3745-15-06. Except as provided in OAC rule 3745-15-06(A)(3), any scheduled maintenance necessitating the shutdown or bypassing of any air pollution control system(s) shall be accompanied by the shutdown of the emissions unit(s) that is (are) served by such control system(s). Any scheduled maintenance, as defined in OAC rule 3745-15-06(A)(1), that results in a deviation from a federally enforceable emission limitation (or control requirement) shall be reported in the same manner as described for malfunctions in Standard Term and Condition A.2.c)(1) above.

(Authority for term: OAC rule 3745-77-07(A)(3)(c))

4. Risk Management Plans

If applicable, the permittee shall 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"); and, pursuant to 40 C.F.R. 68.215(a), the permittee shall submit either of the following:

a) a compliance plan for meeting the requirements of 40 C.F.R. Part 68 by the date specified in 40 C.F.R. 68.10(a) and OAC 3745-104-05(A); or

b) as part of the compliance certification submitted under 40 C.F.R. 70.6(c)(5), a certification statement that the source is in compliance with all requirements of 40 C.F.R. Part 68 and OAC Chapter 3745-104, including the registration and submission of the risk management plan.

(Authority for term: OAC rule 3745-77-07(A)(4))

5. 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.

(Authority for term: OAC rule 3745-77-07(A)(5))

6. Severability Clause

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

(Authority for term: OAC rule 3745-77-07(A)(6))

7. 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 reissuance, or modification, or for denial of a permit renewal application.

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 permitexcept as provided pursuant to A.16 below.

c) This permit may be modified, reopened, revoked, or revoked and reissued, for cause, in accordance with A.11 below. 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, reopening 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.

f) Except as otherwise indicated below, this Title V permit, or permit modification, is effective for five years from the original effective date specified in the permit. In the event that this facility becomes eligible for non-title V permits, this permit shall cease to be enforceable when:

(1) the permittee submits an approved facility-wide potential to emit analysis supporting a claim that the facility no longer meets the definition of a "major source" as defined in OAC rule 3745-77-01(W) based on the permanent shutdown and removal of one or more emissions units identified in this permit; or

(2) the permittee no longer meets the definition of a "major source" as defined in OAC rule 3745-77-01(W) based on obtaining restrictions on the facility-wide potential(s) to emit that are federally enforceable or legally and practically enforceable ; or

(3) a combination of (1) and (2) above.

The permittee shall continue to comply with all applicable OAC Chapter 3745-31 requirements for all regulated air contaminant sources once this permit ceases to be enforceable. The permittee shall comply with any residual requirements, such as quarterly deviation reports, semi-annual deviation reports, and annual compliance certifications covering the period during which this Title V permit was enforceable. All records relating to this permit must be maintained in accordance with law.

(Authority for term: OAC rule 3745-77-01(W), OAC rule 3745-77-07(A)(3)(b)(ii), OAC rule 3745-77(A)(7))

8. 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.

(Authority for term: OAC rule 3745-77-07(A)(8))

9. Marketable Permit Programs

No revision of this permit is required under any approved economic incentive, marketable permits, emissions trading, and other similar programs or processes for changes that are provided for in this permit.

(Authority for term: OAC rule 3745-77-07(A)(9))

10. Reasonably Anticipated Operating Scenarios

The permittee is hereby authorized to make changes among operating scenarios authorized in this permit without notice to the Ohio EPA, but, contemporaneous with making a change from one operating scenario to another, the permittee must record in a log at the permitted facility the scenario under which the permittee is operating. The permit shield provided in these standard terms and conditions shall apply to all operating scenarios authorized in this permit.

(Authority for term: OAC rule 3745-77-07(A)(10))

11. Reopening for Cause

This Title V permit will be reopened prior to its expiration date under the following conditions:

a) Additional applicable requirements under the Act become applicable to one or more emissions units covered by this permit, and this permit has a remaining term of three or more years. Such a reopening shall be completed not later than eighteen (18) months after promulgation of the applicable requirement. No such reopening is required if the effective date of the requirement is later than the date on which the permit is due to expire, unless the original permit or any of its terms and conditions has been extended pursuant to paragraph (E)(1) of OAC rule 3745-77-08.

b) This permit is issued to an affected source under the acid rain program and additional requirements (including excess emissions requirements) become applicable. Upon approval by the Administrator, excess emissions offset plans shall be deemed to be incorporated into the permit, and shall not require a reopening of this permit.

c) The Director of the Ohio EPA or the Administrator of the U.S. EPA determines that the federally applicable requirements in this permit are based on a material mistake, or that inaccurate statements were made in establishing the emissions standards or other terms and conditions of this permit related to such federally applicable requirements.

d) The Administrator of the U.S. EPA or the Director of the Ohio EPA determines that this permit must be revised or revoked to assure compliance with the applicable requirements.

(Authority for term: OAC rules 3745-77-07(A)(12) and 3745-77-08(D))

12. Federal and State Enforceability

Only those terms and conditions designated in this permit as federally enforceable, that 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, the State, and citizens under the Act. All other terms and conditions of this permit shall not be federally enforceable and shall be enforceable under State law only.

(Authority for term: OAC rule 3745-77-07(B))

13. Compliance Requirements

a) Any document (including reports) required to be submitted and required by a federally applicable requirement in this Title V permit shall include a certification by a Responsible

Officialthat, 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 paragraph (E) of OAC rule 3745-77-03.

(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 Canton City Health Department 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.

d) Compliance certifications concerning the terms and conditions contained in this permit that are federally enforceable emission limitations, standards, or work practices, shall be submitted to the Director (the Canton City Health Department) and the Administrator of the U.S. EPA in the following manner and with the following content:

(1) Compliance certifications shall be submitted annually on a calendar year basis. The annual certification shall be submitted on or before April 30th of each year during the permit term.

(2) Compliance certifications shall include the following:

a. Identification of each term or condition that is the basis of the certification. The identification may include a statement by the Responsible Official that every term and condition that is federally enforceable has been reviewed, and such terms and conditions with which there has been continuous compliance throughout the year are not separately identified.

b. The permittee's current compliance status.

c. Whether compliance was continuous or intermittentconsistent with A.13.d.2.a above.

d. The method(s) used for determining the compliance status of the source currently and over the required reporting period consistent with A.13.d.2.a above.

e. Such other facts as the Director of the Ohio EPA may require in the permit to determine the compliance status of the source.

(3) Compliance certifications shall contain such additional requirements as may be specified pursuant to sections 114(a)(3) and 504(b) of the Act.

(Authority for term: OAC rules 3745-77-07(C)(1),(2),(4) and (5) and ORC section 3704.03(L))

14. Permit Shield

a) Compliance with the terms and conditions of this permit (including terms and conditions established for alternate operating scenarios, emissions trading, and emissions averaging, but excluding terms and conditions for which the permit shield is expressly prohibited under OAC rule 3745-77-07) shall be deemed compliance with the applicable requirements identified and addressed in this permit as of the date of permit issuance.

b) This permit shield provision shall apply to any requirement identified in this permit pursuant to OAC rule 3745-77-07(F)(2), as a requirement that does not apply to the source or to one or more emissions units within the source.

(Authority for term: OAC rule 3745-77-07(F))

15. Operational Flexibility

The permittee is authorized to make the changes identified in OAC rule 3745-77-07(H)(1)(a) to (H)(1)(c) within the permitted stationary source without obtaining a permit revision, if such change is not a modification under any provision of Title I of the Act [as defined in OAC rule 3745-77-01(JJ)], and does not result in an exceedance of the emissions allowed under this permit (whether expressed therein as a rate of emissions or in terms of total emissions), and the permittee provides the Administrator of the U.S. EPA and the Canton City Health Department with written notification within a minimum of seven days in advance of the proposed changes, unless the change is associated with, or in response to, emergency conditions. If less than seven days notice is provided because of a need to respond more quickly to such emergency conditions, the permittee shall provide notice to the Administrator of the U.S. EPA and the Canton City Health Department as soon as possible after learning of the need to make the change. The notification shall contain the items required under OAC rule 3745-77-07(H)(2)(d).

(Authority for term: OAC rules 3745-77-07(H)(1) and (2))

16. Emergencies

The permittee shall have an affirmative defense of emergency to an action brought for noncompliance with technology-based emission limitations if the conditions of OAC rule 3745-77-07(G)(3) are met.

This emergency defense provision is in addition to any emergency or upset provision contained in any applicable requirement.

(Authority for term: OAC rule 3745-77-07(G))

17. Off-Permit Changes

The owner or operator of a Title V source may make any change in its operations or emissions at the source that is not specifically addressed or prohibited in the Title V permit, without obtaining an amendment or modification of the permit, provided that the following conditions are met:

a) The change does not result in conditions that violate any applicable requirements or that violate any existing federally enforceable permit term or condition.

b) The permittee provides contemporaneous written notice of the change to the Director and the Administrator of the U.S. EPA, except that no such notice shall be required for changes that qualify as insignificant emissions levels or activities as defined in OAC rule 3745-77-01(U). Such written notice shall describe each such change, the date of such change, any change in emissions or pollutants emitted, and any federally applicable requirement that would apply as a result of the change.

c) The change shall not qualify for the permit shield under OAC rule 3745-77-07(F).

d) The permittee shall keep a record describing all changes made at the source that result in emissions of a regulated air pollutant subject to an applicable requirement, but not otherwise regulated under the permit, and the emissions resulting from those changes.

e) The change is not subject to any applicable requirement under Title IV of the Act or is not a modification under any provision of Title I of the Act.

Paragraph (I) of rule 3745-77-07 of the Administrative Code applies only to modification or amendment of the permittee's Title V permit. The change made may require a permit-to-install under Chapter 3745-31 of the Administrative Code if the change constitutes a modification as defined in that Chapter. Nothing in paragraph (I) of rule 3745-77-07 of the Administrative Code shall affect any applicable obligation under Chapter 3745-31 of the Administrative Code.

(Authority for term: OAC rule 3745-77-07(I))

18. Compliance Method Requirements

Nothing in this permit shall alter or affect the ability of any person to establish compliance with, or a violation of, any applicable requirement through the use of credible evidence to the extent authorized by law. Nothing in this permit shall be construed to waive any defenses otherwise available to the permittee, including but not limited to, any challenge to the Credible Evidence Rule (see 62 Federal Register 8314, Feb. 24, 1997), in the context of any future proceeding.

(This term is provided for informational purposes only.)

19. Insignificant Activities or Emissions Levels

Each IEU that is subject to one or more applicable requirements shall comply with those applicable requirements.

(Authority for term: OAC rule 3745-77-07(A)(1))

20. Permit to Install Requirement

Prior to the "installation" or "modification" of any "air contaminant source," as those terms are defined in OAC rule 3745-31-01, a permit to install must be obtained from the Ohio EPA pursuant to OAC Chapter 3745-31.

(Authority for term: OAC rule 3745-77-07(A)(1))

21. 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.

(Authority for term: OAC rule 3745-77-07(A)(1))

22. Permanent Shutdown of an Emissions Unit

The permittee may notify Ohio EPA of any emissions unit that is permanently shut down by submitting a certification from the Responsible 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 Responsible Official that the emissions unit was permanently shut down.

After the date on which an emissions unit is permanently shut down (i.e., that 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 and therefore ceases to meet the definition of an "emissions unit" as defined in OAC rule 3745-77-01(O)), rendering existing permit terms and conditions irrelevant, the permittee shall not be required, after the date of the certification and submission to Ohio EPA, to meet any Title V permit requirements applicable to that emissions unit, except for any residual requirements, such as the quarterly deviation reports, semi-annual deviation reports and annual compliance certification covering the period during which the emissions unit last operated. All records relating to the shutdown emissions unit, generated while the emissions unit was in operation, must be maintained in accordance with law.

Unless otherwise exempted, noemissions unit identified in this permit that has beencertified by the Responsible Official as being permanently shut down may resume operation without first applying for and obtaining a permit to install pursuant to OAC Chapter 3745-31.

(Authority for term: OAC rule 3745-77-01)

23. Title VI Provisions

If applicable, the permittee shall comply with the standards for recycling and reducing emissions of ozone depleting substances pursuant to 40 CFR Part 82, Subpart F, except as provided for motor vehicle air conditioners in Subpart B of 40 CFR Part 82:

a) Persons operating appliances for maintenance, service, repair, or disposal must comply with the required practices specified in 40 CFR 82.156.

b) Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment specified in 40 CFR 82.158.

c) Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to 40 CFR 82.161.

(Authority for term: OAC rule 3745-77-01(H)(11)))

24. Reporting Requirements Related to Monitoring and Record Keeping RequirementsUnder State Law Only

The permittee shall submit required reports in the following manner:

a) Reports of any required monitoring and/or record keeping information shall be submitted to theCanton City Health Department.

b) Except as otherwise may be provided in the terms and conditions for a specific emissions unit, quarterly written reports of (i) any deviations (excursions) from emission limitations, operational restrictions, and control device operating parameter limitations that have been detected by the testing, monitoring, and record keeping requirements specified in this permit, (ii) the probable cause of such deviations, and (iii) any corrective actions or preventive measures which have been or will be taken, shall be submitted to the Canton City Health Department. In identifying each deviation, the permittee shall specify the applicable requirement for which the deviation occurred, describe each deviation, and provide the magnitude and duration of each deviation. 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.)

25. Records Retention RequirementsUnder State Law Only

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.

26. Inspections and Information Requests

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

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

(Authority for term: OAC rule 3745-77-07(C))

27. Scheduled Maintenance/Malfunction Reporting For State-Only Requirements

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

28. Permit Transfers

Any transferee of this permit shall assume the responsibilities of the prior permit holder. The Canton City Health Department must be notified in writing of any transfer of this permit.

(Authority for term: OAC rule 3745-77-01(C))

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

If no emission limitation (or control requirement), operational restriction and/or control device parameter limitation 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 by January 31, April 30, July 31, and October 31 of each year; and each report shall cover the previous calendar quarter.

The permittee is not required to submit a quarterly report which states that no deviations occurred during that quarter for the following situations:

a) where an emissions unit has deviation reporting requirements for a specific emission limitation, operational restriction, or control device parameter limitation that override the deviation reporting requirements specified in Standard Term and Condition A.2.c)(2); or

b) where an uncontrolled emissions unit has no monitoring, record keeping, or reporting requirements and the emissions unit's applicable emission limitations are established at the potential to emit; or

c) where the company's Responsible Official has certified that an emissions unit has been permanently shut down.

30. Submitting Documents Required by this Permit

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 ofan 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 Canton City Health Department, 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 required application, notification or report is considered to be "submitted" on the date the submission is successful using a valid electronic signature. Signature by the Responsible Official may be represented as provided through procedures established in Air Services.

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) B.2. (Definitions, below)

2. Definitions - for the purpose of this permit:

   a) *CCHD-APCD* is an abbreviation for the Canton City Health Department, Air Pollution Control Division. The Air Pollution Control Division may also be referred to as the Canton Local Air Agency.

   b) *Clay* shall refer to a raw material that is blended together with one or more other materials that together comprise the ingredients of a given product manufactured at this facility. The clay and shale used at this facility typically contain small amounts of sulfur and fluorine which contribute to emissions of sulfur dioxide and fluoride/fluoride compounds, respectively.

   c) *Shale* shall refer to a raw material that is blended together with one or more other materials that together comprise the ingredients of a given product manufactured at this facility. The shale and clay used at this facility typically contain small amounts of sulfur and fluorine, which contribute to emissions of sulfur dioxide and fluoride/fluoride compounds, respectively.

   d) *Grog* shall refer to previously-fired or calcined material (e.g., defective product) that may be reprocessed in limited amounts along with raw clay and raw shale for use in products manufactured at this facility.

3. This facility is subject to the applicable requirements specified in OAC Chapter 3745-25. Because this facility may emit 0.25 tons per day or more of SO_2, the permittee shall develop and submit emission control action programs as specified in OAC rule 3745-25-04 and in accordance with Ohio EPA DAPC Engineering Guide #64.

4. This facility is categorized as follows:

   a) a "major stationary source," as defined in OAC rule 3745-31-01, in an attainment area for SO_2, because it emits or has the potential to emit two hundred fifty tons per year or more of SO_2; and

   b) a "major source," and thus a "Title V source," as defined in OAC rules 3745-77-01 and -02, that is subject to the permitting requirements of OAC chapter 3745-77, because it directly emits or has the potential to emit one hundred tons per year or more of SO_2 and ten tons per year or more of the single HAP hydrogen fluoride.

5. The following emissions units contained in this permit are subject to 40 CFR Part 60, Subpart OOO – Standards of Performance for Nonmetallic Mineral Processing Plants: P011 and P012.

   The complete NSPS requirements, including the NSPS General Provisions, may be accessed via the internet from the Electronic Code of Federal Regulations (e-CFR) website http://ecfr.gpoaccess.gov or by contacting CCHD-APCD.

6. 40 CFR Part 63, Subpart JJJJJ – National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Brick and Structural Clay Products (BSCP) Manufacturing, was vacated by a U.S. Federal Court in 2007, *Sierra Club v. EPA,* 479 F 3d 875 (D.C. Cir 2007). Had Subpart JJJJJ not been vacated, the overall facility would be subject to certain portions because, according to the criteria set

forth in paragraphs (a) and (b) of 40 CFR § 63.8385, the facility is a BSCP manufacturing facility that is a major source of HAP emissions (specifically hydrogen fluoride, CAS No. 7664393).

However, if Subpart JJJJJ had not been vacated, none of the individual emissions units contained in this permit would have been subject to the emission limits from Table 1 of Subpart JJJJJ, because there are no existing large tunnel kilns (design capacity ≥ 10 tph of fired product), and no new or reconstructed small tunnel kilns (design capacity < 10 tph of fired product), where "existing" means that construction began on or before July 22, 2002, and "new or reconstructed" means that construction or reconstruction began after July 22, 2002.

Because none of the individual emissions units contained in this permit would have been subject to the emission limits from Table 1 of Subpart JJJJJ, had it not been vacated, none of these emissions units (P004, P005, P006, and P014) are required to have case-by-case equivalent emissions limits set by this permit under Section 112(j) of the Clean Air Act.

The NESHAPs for a particular source category represent the Maximum Achievable Control Technology (MACT) for that source category as determined by the U.S. EPA. The complete MACT requirements, including the MACT General Provisions may be accessed via the internet from the Electronic Code of Federal Regulations (e-CFR) website http://ecfr.gpoaccess.gov or by contacting CCHD-APCD.

7. Pursuant to 40 CFR Part 64, the permittee has submitted and the Canton City Health Department, Air Pollution Control Division has approved a compliance assurance monitoring (CAM) plan for emissions units P011 and P012 at this facility. The permittee shall comply with the provisions of the plan during any operation of the aforementioned emissions units.

8. The following insignificant emissions units at this facility must comply with all applicable state and federal regulations, as well as any emissions limitations and/or control requirements contained within the identified permit to install for the emissions unit. The insignificant emissions units listed below are subject to one or more applicable requirements contained in a permit-to-install or in the SIP-approved version of OAC rule 3745 and/or 40 CFR Part 60 or 63:

   a) None.

[Authority for term: OAC rule 3745-77-07(A)(13)]

C. Emissions Unit Terms and Conditions

1. F001, Roadways and parking areas

Operations, Property and/or Equipment Description:

Unpaved roadways and parking areas, and paved office parking lot. Emissions from unpaved portions are controlled by an automatic water sprinkler system and enforcement of a 15 mph speed limit.

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
	OAC rule 3745-17-07(B)(4)	For paved roadways and parking areas (identified in b)(2)a. below): No visible particulate emissions except for 6 minutes during any 60-minute observation period.
	OAC rule 3745-17-07(B)(5)	For unpaved roadways and parking areas (identified in b)(2)b. below): No visible particulate emissions except for 13 minutes during any 60-minute observation period. See b)(2)g. below.
	OAC rule 3745-17-08(B), (B)(7)-(9) [RACM for fugitive dust in Appendix A areas]	For paved roadways and parking areas (identified in b)(2)a. below): See b)(2)c., d., f. and h. below.
	OAC rule 3745-17-08(B), (B)(2) & (7) [RACM for fugitive dust in Appendix A areas]	For unpaved roadways and parking areas (identified in b)(2)b. below): See b)(2)e., f., g. and h. below.

(2) Additional Terms and Conditions

a. The paved roadways and parking areas that are covered by this permit and subject to the requirements of OAC rules 3745-17-07 and 3745-17-08 are listed below:

i. paved roadways: none.

ii. paved parking areas: office parking.

b. The unpaved roadways and parking areas that are covered by this permit and subject to the requirements of OAC rules 3745-17-07 and 3745-17-08 are listed below:

i. unpaved roadways: east road, west road and plant entrance.

ii. unpaved parking areas: east, south and west areas.

c. The permittee shall employ reasonably available control measures on all paved roadways and parking areas for the purpose of ensuring compliance with the above-mentioned applicable requirements. In accordance with the permittee's permit application, the permittee has committed to clean the paved roadways and parking areas by sweeping with a broom at sufficient frequencies to ensure compliance. Nothing in this paragraph shall prohibit the permittee from employing other control measures to ensure compliance.

d. The permittee shall promptly remove, in such a manner as to minimize or prevent resuspension, earth and/or other material from paved surfaces onto which such material has been deposited by trucking or earth moving equipment, or erosion by water, or other means.

e. The permittee shall employ reasonably available control measures on all unpaved roadways and parking areas for the purpose of ensuring compliance with the above-mentioned applicable requirements. In accordance with the permittee's permit application, the permittee has committed to treat the unpaved roadways and parking areas with virgin oil and/or water spray and/or other dust suppression material at sufficient frequencies to ensure compliance, and to also post and enforce a 15 mph speed limit for the unpaved roadways and parking areas. Nothing in this paragraph shall prohibit the permittee from employing other control measures to ensure compliance.

f. The control measures shall be implemented at frequencies that will minimize or eliminate visible emissions of fugitive dust generated by vehicle traffic and ensure compliance with the above-mentioned visible emissions limitations. The needed frequencies of implementation of the control measures shall be determined by the permittee's inspections pursuant to the monitoring section of this permit. Implementation of the control measures shall not be necessary for paved or unpaved roadways and parking areas that are covered with snow and/or ice or if precipitation has occurred that is sufficient for that day to ensure compliance with the above-mentioned applicable requirements. Implementation

of any control measure may be suspended if unsafe or hazardous driving conditions would be created by its use.

g. Any unpaved roadway or parking area, which during the term of this permit is paved or takes on the characteristics of a paved surface due to the application of certain types of dust suppressants, shall be considered a paved roadway or parking area and shall be controlled with the control measures specified above for paved surfaces. Such roadways or parking areas considered to be paved shall be subject to a limitation of no visible emissions except for a period of time not to exceed 6 minutes during any 60-minute observation period.

h. Open-bodied vehicles transporting materials likely to become airborne shall have such materials covered at all times if the control measure is necessary to minimize or eliminate visible emissions of fugitive dust.

c) Operational Restrictions

(1) None.

d) Monitoring and/or Recordkeeping Requirements

(1) Except as otherwise provided in this section, the permittee shall perform inspections of each of the roadway segments and parking areas in accordance with the following frequencies:

paved roadways and parking areas	minimum inspection frequency
office parking	monthly

unpaved roadways and parking areas	minimum inspection frequency
east road, west road and plant entrance	once every two weeks

[Authority for term: OAC rules 3745-77-07(C)(1), 3745-17-07(B), and 3745-17-08(B)]

(2) The purpose of the inspections is to determine the need for implementing the above-mentioned control measures. The inspections shall be performed during representative, normal traffic conditions. No inspection shall be necessary for a roadway or parking area that is covered with snow and/or ice or if precipitation has occurred that is sufficient for that day to ensure compliance with the above-mentioned applicable requirements. Any required inspection that is not performed due to any of the above-identified events shall be performed as soon as such event(s) has (have) ended, except if the next required inspection is within one week.

[Authority for term: OAC rules 3745-77-07(C)(1), 3745-17-07(B) and 3745-17-08(B)]

(3) The permittee may, upon receipt of written approval from CCHD-APCD, modify the above-mentioned inspection frequencies if operating experience indicates that less frequent inspections would be sufficient to minimize or eliminate visible emissions of fugitive dust generated by vehicular traffic and to ensure compliance with the above-mentioned visible emission limitations.

[Authority for term: OAC rules 3745-77-07(C)(1), 3745-17-07(B) and 3745-17-08(B)]

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

a. the date and reason why any required inspection was not performed, including those inspections that were not performed due to snow and/or ice cover or precipitation;

b. the date of each inspection where it was determined by the permittee that it was necessary to implement the control measures;

c. the dates the control measures were implemented and which control measures were implemented; and

d. on a calendar quarter basis, the total number of days the control measures were implemented and the total number of days where snow and/or ice cover or precipitation were sufficient to not require the control measures.

The information in "d" shall be kept separately for the paved and unpaved roadways and parking areas and shall be updated on a calendar quarter basis within 30 days after the end of each calendar quarter.

[Authority for term: OAC rules 3745-77-07(C)(1), 3745-17-07(B) and 3745-17-08(B)]

e) Reporting Requirements

(1) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.

[Authority for term: OAC rule 3745-15-03(A)]

(2) The permittee shall submit quarterly reports which identify any deviations from the federally enforceable emission limitations, operational restrictions, and control device operating parameter limitations for this emissions unit in accordance with the reporting requirements in Part A., Standard Terms and Conditions, of this permit.

[Authority for term: OAC rule 3745-77-07(C)(1)]

(3) The permittee shall submit semi-annual reports which identify any deviations from the federally enforceable monitoring, recordkeeping, and reporting requirements for this emissions unit in accordance with the reporting requirements in Part A., Standard Terms and Conditions, of this permit. The semi-annual deviation reports shall also identify the following:

a. each day during which an inspection was not performed by the required frequency, excluding an inspection which was not performed due to an exemption for snow and/or ice cover or precipitation; and

b. each instance when a control measure that was to be implemented as a result of an inspection was not implemented.

[Authority for term: OAC rules 3745-77-07(C)(1),3745-17-07(B) and 3745-17-08(B)]

f) Testing Requirements

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

a. Emissions Limitation:

For paved roadways and parking areas: No visible particulate emissions except for 6 minutes during any 60-minute observation period.

Applicable Compliance Method:

If required, complianceshall be demonstrated through visible emissions observations performed in accordance with the requirements specified in Method 22 of 40 CFR Part 60, Appendix A, with the following modifications as listed in paragraphs (B)(4)(a) through (B)(4)(d) of OAC rule 3745-17-03:

(a) If the observer's view is obscured and observations must be terminated prior to completing the necessary or desired observation period, the observer shall clearly note this fact on the observation form. When the observer'sview of the source is no longer obscured, the observations shall recommence to complete the observation period.

(b) The observer shall identify on the observation form all interruptions due to rest breaks.

(c) For the purpose of determining compliance with the applicable visibleemission limitation, the observations, excluding break periods and periodsof obscured vision, shall be considered continuous.

(d) For any roadway or parking area, the observer shall determine the presenceand duration of visible particulate emissions at the same point of the potentialemissions and at a height approximately four feet above the surface of theroadway or parking area.

[Authority for term: OAC rules 3745-77-07(C)(1)and 3745-17-07(B)]

b. Emissions Limitation:

For unpaved roadways, parking and yard areas: no visible emissions of fugitive dust except for a period of time not to exceed 13 minutes during any 60-minute observation period. If any unpaved roadway and/or parking area (or any portion of them) is or becomes paved, such paved areas shall be subject to a limitation of no visible emissions except for a period of time not to exceed 6 minutes during any 60-minute observation period.

Applicable Compliance Method:

If required, complianceshall be demonstrated through visible emissions observations performed in accordance with the requirements specified in Method 22 of 40 CFR Part 60, Appendix A, with the following modifications as listed in paragraphs (B)(4)(a) through (B)(4)(d) of OAC rule 3745-17-03:

(a) If the observer's view is obscured and observations must be terminated prior to completing the necessary or desired observation period, the observer shall clearly note this fact on the observation form. When the observer'sview of the source is no longer obscured, the observations shall recommence to complete the observation period.

(b) The observer shall identify on the observation form all interruptions due to rest breaks.

(c) For the purpose of determining compliance with the applicable visibleemission limitation, the observations, excluding break periods and periodsof obscured vision, shall be considered continuous.

(d) For any roadway or parking area, the observer shall determine the presenceand duration of visible particulate emissions at the same point of the potentialemissions and at a height approximately four feet above the surface of theroadway or parking area.

[Authority for term: OAC rules 3745-77-07(C)(1) and3745-17-07(B)]

g) Miscellaneous Requirements

(1) None.

2. P011, Material receiving, crushing and storage for shale and clay

Operations, Property and/or Equipment Description:

Material receiving via two separate dump truck receiving hoppers with apron feed conveyors for raw shale plus grog and raw clay plus grog, then primary crushing of received materials, then transporting via covered conveyor belts to inside storage bins, with separate, parallel processes for each of the two material categories (shale and clay). Material receiving and processing capacity is 80 tons/hr for each of the two material categories running simultaneously. Emissions are controlled by three-sided enclosure and water spray during truck dumping (water also wets the materials before crushing), then a common dust collector that exhausts inside a fully enclosed building. The previously separate EU F004 was merged into P011 via administrative modification PTI No. P0109639.

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
	OAC rule 3745-31-05(A)(3) [Best Available Technology (BAT) established in PTI P0109639, issued 11/18/2014]	Particulate emissions (PE) shall not exceed 5.00lb/hr and 3.06 tons/yr. See b)(2)a. and b)(2)b. below. Compliance with this rule also includes compliance with the requirements specified in 40 CFR Part 60, Subpart OOO.
	40 CFR Part 60, Subpart OOO (40 CFR 60.670 – 60.676)	See b)(2)b. below.
	40 CFR Part 60, Subpart A (40 CFR 60.1-60.19)	The General Provisions of 40 CFR Part 60 are applicable except as defined in Table 1 of 40 CFR Part 60, Subpart OOO.
	40 CFR, Part 64	See b)(2)a.ii. and iii., d)(3) through (7),

	(40 CFR 64.1-64.10) [Compliance Assurance Monitoring (CAM)]	e)(2), and e)(5).
	OAC rule 3745-17-07(A) [This rule is cited because it would apply to the outlet of the fabric filter inside the building, which is defined as a "stack" per Engineering Guide No. 75]	The visible particulate emission limitations specified in this rule are less stringent than the visible particulate emission limitations established pursuant to 40 CFR Part 60, Subpart OOO.
	OAC rule 3745-17-07(B)(1) [VE of fugitive dust in Appendix A areas]	The visible particulate emission limitations specified in this rule are less stringent than the visible emission limitations established pursuant to OAC rule 3745-31-05(A)(3) and in 40 CFR Part 60, Subpart OOO, as applicable.
g.	OAC rule 3745-17-08(B) [RACM for fugitive dust in Appendix A areas]	The control measures established pursuant to this rule are equal to or less stringent than the control measures established pursuant to OAC rule 3745-31-05(A)(3) and in 40 CFR Part 60, Subpart OOO, as applicable.
h.	OAC rule 3745-17-11(B) [Restrictions on particulate emissions from industrial processes]	The particulate emission limitations specified in this rule are less stringent than the particulate emission limitations established pursuant to OAC rule 3745-31-05(A)(3).

(2) Additional Terms and Conditions

a. The following are additional best available technology (BAT) requirements, including best available control measures:

i. While dumping the raw shale plus grog and the raw clay plus grog into the truck dump receiving hoppers, visible emissions of fugitive dust from the three-sided partial enclosures shall not exceed 10% opacity as a 3-minute average.

ii. The raw shale plus grog and raw clay plus grog truck dump hoppers shall be serviced by water sprays, and all portions of this emissions unit, except for load-in and load-out to the inside storage bins, shall be serviced by a fabric filter that has a collection efficiency, based on good engineering design, that is sufficient to minimize or eliminate visible particulate emissions of fugitive dust at the points of capture. The fabric

filter shall be vented inside the building. Any visible particulate emissions from the outlet stack of the fabric filter would become fugitive visible particulate emissions from openings of the building housing the fabric filter.

iii. Emissions from the processes described in ii., above, shall be vented to the fabric filter, also described in ii., above, at all times the emissions unit is in operation.

iv. The crushing operations and storage operations (including load-in and load-out of the crushed materials using a front-end loader) shall take place within totally enclosed buildings.

v. Any belt conveyors, except for the apron feed conveyors, that are not contained in a fully enclosed building shall be covered.

vi. There shall no vents (defined as having mechanically induced air flow) into the ambient air from the buildings that contain affected facilities.

vii. For the load-in and load-out of stored materials using a front-end loader, the drop height of the front-end loader shall be minimized.

b. The following are the applicable emission limitations from 40 CFR Part 60, Subpart OOO, Standards of Performance for Nonmetallic Mineral Processing Plants. Except for the process of receiving materials into hoppers via truck-dumping (see g)(1) below), this emissions unit is an "affected facility" (as defined in §§60.670 and 60.671) that commenced construction, modification, or reconstruction after August 31, 1983, but before April 22, 2008.

i. For any conveyor belts that are not enclosed within a building, fugitive emissions from any openings in the conveyor belt coverings shall not exceed 10% opacity as a 6-minute average. [Specific reference: §60.672(b)]

ii. Requirements for emissions from affected facilities enclosed in a building: fugitive emissions from building openings shall not exceed 7% opacity as a 6-minute average. [Specific reference: §60.672(e)(1)]

c) Operational Restrictions

(1) The permittee shall be limited to receiving a total of 200,000 tons of raw material plus grog in this emissions unit per calendar year.

[Authority for term: OAC rules 3745-31-05 and 3745-77-07(A)(1) and PTI P0109639]

d) Monitoring and/or Recordkeeping Requirements

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

a. The amount of material unloaded (received) in this emissions unit, in tons, categorized as follows:

i. the amount of raw shale plus grog;

ii. the amount of raw clay plus grog; and

iii. the combined total of raw shale plus grog and raw clay plus grog.

b. The total hours of operation for this emissions unit.

c. The year-to-date total amount of material unloaded (received) in this emissions unit, in tons, shall be updated by adding the weekly value, recorded in a.iii. above, to the total for all previous weeks during the current calendar year.

[Authority for term: OAC rules 3745-31-05 and 3745-77-07(C)(1) and PTI P0109639]

(2) The permittee shall perform weekly visible emissions checks for the equipment and operations listed in a. – c. below when the emissions unit is in operation and when the weather conditions allow:

a. For each receiving hopper, check for any visible particulate emissions of fugitive dust outside the 3-sided enclosure serving this truck dumping operation, when trucks are dumping materials into the hoppers.

b. For the shale interconnecting belt #2 and for the clay interconnecting belt #1 which are totally covered and not enclosed within any building, check for any visible particulate emissions of fugitive dust around the conveyors while the conveyors are transporting material.

c. While any of the following operations, property, and/or equipment that are all enclosed in buildings are in use, check for any visible particulate emissions of fugitive dust escaping from the buildings: the shale crusher, the clay crusher, conveyor belts enclosed in buildings, the material transfer points into the crushed shale and crushed clay storage bins, and load-out from the storage bins using a front-end loader.

d. The presence or absence of any visible emissions observed during any of the weekly checks required in a. – c. above shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

i. the location and color of the emissions;

ii. whether the emissions are representative of normal operations;

iii. if the emissions are not representative of normal operations, the cause of the abnormal emissions;

iv. the total duration of any visible emissions incident; and

v. any corrective actions taken to 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 iv. above or continue the 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.

[Authority for term: OAC rules 3745-31-05 and 3745-77-07(C)(1) and PTI P0109639]

(3) In order to maintain compliance with the applicable emission limitation contained in b)(1), the acceptable range established for the pressure drop across the fabric filter is between 1 to 4 inches of water while the emissions unit is in operation.

[Authority for term: OAC rules 3745-31-05 and 3745-77-07(A)(1), PTI P0109639, and 40 CFR 64.3]

(4) The permittee shall properly install, operate, and maintain equipment to continuously monitor the pressure drop, in inches of water, across the fabric filter when the controlled emissions unit is in operation, including periods of startup and shutdown. The permittee shall record the pressure drop across the fabric filter 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 for the pressure drop deviates from the limit or range 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 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 fabric filter is effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by CCHD-APCD. 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 particulate emission 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.

[Authority for term: OAC rules 3745-31-05 and 3745-77-07(C)(1), PTI P0109639, and 40 CFR 64.3, 40 CFR 64.7(c), and 40 CFR 64.9(b)]

(5) The CAM plan for this emissions unit has been developed for particulate emissions. The CAM performance indicator for the fabric filter controlling this emissions unit is pressure drop with an indicator level of pressure drop maintained according to the range specified in d)(3), in accordance with the monitoring and recordkeeping requirements specified in d)(4).

These indicators were selected because they are indicative of operation of the fabric filter in a manner necessary to comply with the particulate emission standards. The pressure drop increases as the filter medium starts to bind and is a good indicator to replace filter media.

Upon detecting an excursion of any of the particulate emission indicator ranges listed above, the owner or operator shall restore operation of the emissions unit and/or its control equipment to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion. Such actions may include initial inspection and evaluation, recording that operation(s) returned to normal without operator action, or any necessary follow-up actions to return operation to within the indicator range.

If a determination is made by the Administrator or Ohio EPA that the permittee has not used acceptable procedures in response to an excursion or exceedance based on the results of a determination made under 40 CFR Part 64.7(d)(2), the permittee may be required to develop a Quality Improvement Plan (QIP) consistent with the requirements of 40 CFR Part 64.8. In addition, a QIP will be developed and implemented if the threshold of one occurrence per quarter is exceeded.

[Authority for term: OAC rule 3745-77-07(C)(1) and 40 CFR Part 64]

(6) The permittee shall maintain the necessary parts for routine repairs of the monitoring equipment.

[Authority for term: OAC rule 3745-77-07(C)(1) and 40 CFR, Part 64.7(b)]

(7) If the permittee identifies a failure to achieve compliance with an emission limitation or standard for which the approved monitoring under 40 CFR Part 64 did not provide an indication of an excursion or exceedance, or the results of compliance or performance testing document a need to modify the existing indicator levels, the permittee shall promptly notify CCHD-APCD, and if necessary, submit a proposed modification to the Title V permit to address the necessary monitoring changes. Such a modification may include, but is not limited to, re-establishing indicator ranges or designated conditions (i.e. levels), modifying the frequency of conducting monitoring and collecting data, or the monitoring of additional parameters. Approved revisions to the monitoring will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by a means of a minor permit modification.

[Authority for term: OAC rule 3745-77-07(C)(1) and 40 CFR, Part 64]

e) Reporting Requirements

(1) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.

[Authority for term: OAC rules 3745-31-05 and 3745-15-03(A) and PTI P0109639]

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

a. each week during which the total tons of raw material plus grog received, as recorded per term d)(1)c. above, exceeded the operational restriction defined in term c)(1) above. For each such week, the value of the year-to-date total tons of raw material plus grog shall also be reported;

b. any period of time (start time and date, and end time and date) when the emissions unit was in operation and the applicable process emissions were not vented to the fabric filter;

c. each period of time (start time and date, and end time and date) when the pressure drop across the fabric filter was outside the allowable range specified in d)(3) above;

d. each incident of deviation described in c. above where a prompt investigation was not conducted;

e. each incident of deviation described in c. above 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

f. each incident of deviation described in c. above 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

[Authority for term: OAC rules 3745-15-03(B)(1)(a), 3745-15-03(C),3745-31-05, 3745-77-07(C)(1) and 40 CFR Part 64.9(a) and PTI P0109639]

(3) The permittee shall submit semiannual reports that identify the following at a minimum:

a. all days during which any visible particulate emissions were observed at any of the locations identified in d)(2) above; and

b. any corrective actions taken to eliminate the visible particulate emissions.

The semiannual reports shall be submitted along with the semiannual deviation reports required per the reporting requirements of the Standard Terms and Conditions of this permit.

[Authority for term: OAC rules 3745-31-05 and 3745-77-07(C)(1)and PTI P0109639]

(4) In the annual Fee Emissions Report (FER), the permittee shall report the throughput for this emissions unit as the total amount of material received during the previous calendar year (raw shale plus grog and raw clay plus grog), in tons, based on the recordkeeping required in d)(1)c. above. Also, the total particulate emissions from this emissions unit, in tons, during the previous calendar year shall be reported in the annual FER based on the calculation method shown in f)(1)b. below, but using the actual totalamount of material received instead of the operational limit of 200,000 tons per calendar year.

[Authority for term: OAC rules 3745-31-05 and 3745-15-03(A)and PTI P0109639]

(5) If the permittee is required under 40 CFR Part 64.8 and d)(5) of this permit to develop a QIP, the permittee shall submit quarterly reports that contact a description of the actions taken to implement a QIP during the reporting period. Upon completion of a QIP, the permittee shall include documentation that the implementation of the plan has been completed and reduced the likelihood of excursions.

[Authority for term: OAC rule 3745-77-07(C)(1) and 40 CFR Part 64]

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:

Particulate emissions (PE) shall not exceed 5.00lb/hr.

Applicable Compliance Method:

This emissions limitation was established by calculating the maximum potential-to-emit, with controls, for the following processes combined, all based on the maximum receiving and processing capacity of 80 tons/hr each for the parallel shale and clay processes:

1. Receiving materials via truck dumping.
2. Crushing
3. Load-in to storage bins
4. Load-out from storage bins.

1. Receiving materials via truck dumping:

An emission factor of 0.04 lb_{PE}/ton dumped was obtained from Table 2.20-1 in Ohio EPA's "RACM Manual Supplement #1," 1983. This value was increased by 25% to 0.05 lb_{PE}/ton as a conservative measure.

Uncontrolled PTE = (2 hoppers) x (80 ton/hr) x (0.05 lb_{PE}/ton) = 8.0 lb_{PE}/hr

There are two egress routes for particulate emissions: fugitive emissions from the openings of the three-sided enclosures (one at the each of the two hoppers), and stack emissions from the outlet of the fabric filter. The controlled PTE for each of these egress routes was calculated as shown below, then the results were added together to obtain the overall PTE after controls for receiving materials via truck dumping.

Openings of three-sided enclosures:

Controlled potential-to-emit of fugitive dust from the opening of the three-side enclosure was calculated based upon an estimated 70% control efficiency for water spray, followed by a 50% capture efficiency for the three-sided enclosure:

$(8.0\ lb_{PE}/hr) \times (1 - 0.70)_{\text{WATER SPRAY}} = 2.40\ lb_{PE}/hr_{\text{AFTER WATER SPRAY}}$

$(2.40\ lb_{PE}/hr_{AFTER\ WATER\ SPRAY}) \times (1 - 0.50)_{CAPTURE\ BY\ ENCLOSURE} = 1.20\ lb_{PE}/hr_{FUGITIVE\ EMISSIONS}$

Outlet of fabric filter:

The remaining airborne dust that has been captured by the three-sided enclosure is then pulled through the duct system, where it is finally captured by the fabric filter and controlled at 99.5% efficiency:

$(2.40\ lb_{PE}/hr_{AFTER\ WATER\ SPRAY}) - (1.20\ lb_{PE}/hr_{FUGITIVE\ EMISSIONS}) = 1.20\ lb_{PE}/hr_{CAPTURE\ BY\ FABRIC\ FILTER}$

$(1.20\ lb_{PE}/hr_{CAPTURE\ BY\ FABRIC\ FILTER}) \times (1 - 0.995)_{CONTROL\ BY\ FABRIC\ FILTER} = 0.006\ lb_{PE}/hr_{FABRIC\ FILTER\ OUTLET}$

Total Controlled PTE for receiving materials via truck dumping:

$1.20\ lb_{PE}/hr_{FUGITIVE\ EMISSIONS} + 0.006\ lb_{PE}/hr_{FABRIC\ FILTER\ OUTLET} = 1.206 \approx 1.21\ lb_{PE}/hr$

2. Crushing:

The emission factor used was 12 lb_{PE}/ton of material crushed, as found in FIRE 6.25 for SCC 3-05-009-04 (Industrial Processes - Mineral Products - Clay and fly ash sintering - Raw clay/shale crushing/screening). Controlled potential-to-emit was calculated based upon an estimated 70% control efficiency for watering, followed by an estimated overall control efficiency of 99.5% for the fabric filter:

Controlled $PTE_{CRUSHING}$ = (2 crushers) x (80 ton/hr) x (12 lb_{PE}/ton) x (1 – 0.70) x (1 – 0.995) = 2.88 lb_{PE}/hr

Note: The watering control measure is due to the spraying that occurs while material is being dumped into the receiving hoppers. Dust is prevented because the material is crushed in a partially wet condition. The crushers are inside a fully enclosed building, so any dust that is generated is captured and controlled by the fabric filter.

3. Load-in to storage bins:

From Supplement #1 (1983) to the Ohio EPA's Reasonably Available Control Measures (RACM) for Fugitive Dust Sources Manual, Chapter 2.1.2, Aggregate Storage Piles, the emission factor for continuous load-in from a conveyor was calculated in PTI 15-01587 using Equation 2, except that the term for wind speed was omitted based on an assumption that the wind speed

would be zero because the operation is performed inside a building (see Note below*).

Equation 2: $EF = (0.0018) \times (S/5) \times (U/5) \div (M/2)^2$

Equation 2 as modified in PTI 15-01587: $EF = (0.0018) \times (S/5) \cancel{\times (U/5)} \div (M/2)^2$

where: EF = emission factor in lb_{PE}/ton of material loaded-in
S = silt content, percent by weight
M = moisture content, percent by weight
U = mean wind speed in mph

Applying Equation 2 as modified in PTI 15-01587 using a silt content of 10% and a moisture content of 4%:

$EF_{LOAD\text{-}IN} = (0.0018) \times (10/5) \div (4/2)^2 = 0.0009\ lb_{PE}/ton$

Applying the emission factor to the continuous load-in operation at maximum capacity:

$PTE_{LOAD\text{-}IN}$ = (2 crushers) x (80 ton/hr) x (0.0009 lb_{PE}/ton) = 0.14 lb_{PE}/hr

*Note: for a wind speed of zero mph, the equation would result in an emission factor of zero, so the modification used in PTI 15-01587 was erroneous. What was done by omitting the factor (U/5) was to effectively set the value to 1, which would be the result for a mean wind speed of 5 mph (5/5 = 1). The result was a conservatively high value for the emission factor.

4. <u>Load-out from storage bins:</u>

From Supplement #1 (1983) to the Ohio EPA's Reasonably Available Control Measures (RACM) for Fugitive Dust Sources Manual, Chapter 2.1.2, Aggregate Storage Piles, the emission factor for load-out with a front-end loader was calculated in PTI 15-01587 using Equation 6, except that the term for wind speed was omitted based on an assumption that the wind speed would be zero because the operation is performed inside a building (See Note in the Load-in section above*).

Equation 6: $EF = (0.0018) \times (S/5) \times (U/5) \div (M/2)^2 \div (Y/6)$

Equation 6 as modified in PTI 15-01587: $EF = (0.0018) \times (S/5) \cancel{\times (U/5)} \div (M/2)^2 \div (Y/6)$

where: EF = emission factor in lb_{PE}/ton of material loaded-in
S = silt content, percent by weight
M = moisture content, percent by weight

U = mean wind speed in mph

Y = effective loader capacity in cubic yards

Applying Equation 6 as modified in PTI 15-01587 using a silt content of 10%, a moisture content of 4% and an effective loader capacity of 1.3 cubic yards:

$EF_{LOAD\text{-}OUT}$ = (0.0018) x (10/5) ÷ $(4/2)^2$ ÷ (1.3/6) = 0.004154 lb_{PE}/ton

Applying the emission factor to the load-out operation at maximum capacity:

$PTE_{LOAD\text{-}OUT}$ = (2 crushers) x (80 ton/hr) x (0.004154 lb_{PE}/ton) = 0.66 lb_{PE}/hr

Total Controlled Potential-to-Emit:

= $PTE_{RECEIVING}$ + $PTE_{CRUSHING}$ + $PTE_{LOAD\text{-}IN}$ + $PTE_{LOAD\text{-}OUT}$

= (1.21 lb_{PE}/hr) + (2.88 lb_{PE}/hr) + (0.14 lb_{PE}/hr) + (0.66 lb_{PE}/hr)

= 4.89 lb_{PE}/hr

The 4.89 lb_{PE}/hr emission, as calculated above, was rounded up to establish the 5.00 lb_{PE}/hr emissions limit.

[Authority for term: OAC rules 3745-31-05 and 3745-77-07(C)(1)and PTI P0109639]

b. Emission Limitation:

Particulate emissions (PE) shall not exceed 3.06ton/yr.

Applicable Compliance Method:

This emission limitation was established by calculating the maximum potential-to-emit, with controls, for the following processes combined, all based upon the operational restriction of 200,000 tons of total material received per calendar year:

1. Receiving materials via truck dumping.
2. Crushing
3. Load-in to storage bins
4. Load-out from storage bins.

1. Receiving materials via truck dumping:

An emission factor of 0.04 lb_{PE}/ton dumped was obtained from Table 2.20-1 in Ohio EPA's "RACM Manual Supplement #1,"

1983. This value was increased by 25% to 0.05 lb_{PE}/ton as a conservative measure.

Uncontrolled PTE = (200,000 ton/yr)x (0.05 lb_{PE}/ton) ÷ (2000 lb/ton) = 5.0 ton_{PE}/yr

There are two egress routes for particulate emissions: fugitive emissions from the openings of the three-sided enclosures (one at the each of the two hoppers), and stack emissions from the outlet of the fabric filter. The controlled PTE for each of these egress routes was calculated as shown below, then the results were added together to obtain the overall PTE after controls for receiving materials via truck dumping.

<u>Openings of three-sided enclosures:</u>

Controlled potential-to-emit of fugitive dust from the opening of the three-side enclosure was calculated based upon an estimated 70% control efficiency for water spray, followed by a 50% capture efficiency for the three-sided enclosure.

$(5.0\ ton_{PE}/yr) \times (1 - 0.70)_{\text{WATER SPRAY}} = 1.50\ ton_{PE}/yr_{\text{AFTER WATER SPRAY}}$

$(1.50\ ton_{PE}/yr_{\text{AFTER WATER SPRAY}}) \times (1 - 0.50)_{\text{CAPTURE BY ENCLOSURE}} = 0.75\ ton_{PE}/yr_{\text{FUGITIVE EMISSIONS}}$

<u>Outlet of fabric filter:</u>

The remaining airborne dust that has been captured by the three-sided enclosure is then pulled through the duct system, where it is finally captured by the fabric filter and controlled at 99.5% efficiency:

$(1.50\ ton_{PE}/yr_{\text{AFTER WATER SPRAY}}) - (0.75\ ton_{PE}/yr_{\text{FUGITIVE EMISSIONS}}) = 0.75\ ton_{PE}/yr_{\text{CAPTURE BY FABRIC FILTER}}$

$(0.75\ ton_{PE}/yr_{\text{CAPTURE BY FABRIC FILTER}}) \times (1 - 0.995)_{\text{CONTROL BY FABRIC FILTER}} = 0.004\ ton_{PE}/yr_{\text{FABRIC FILTER OUTLET}}$

<u>Total Annual Controlled PTE for receiving materials via truck dumping:</u>

$0.75\ ton_{PE}/yr_{\text{FUGITIVE EMISSIONS}} + 0.004\ ton_{PE}/yr_{\text{FABRIC FILTER OUTLET}} = 0.754 \approx 0.75\ ton_{PE}/yr$

2. <u>Crushing:</u>

The emission factor used was 12 lb_{PE}/ton of material crushed, as found in FIRE 6.25 for SCC 3-05-009-04 (Industrial Processes - Mineral Products - Clay and fly ash sintering - Raw clay/shale

crushing/screening). Controlled potential-to-emit was calculated based upon an estimated 70% control efficiency for watering, followed by an estimated overall control efficiency of 99.5% for the fabric filter:

Annual Controlled $PTE_{CRUSHING}$ = (200,000 ton/yr) x (12 lb_{PE}/ton) x (1 – 0.70) x (1 – 0.995) ÷ (2000 lb/ton) = 1.80ton_{PE}/yr

Note: The watering control measure is due to the spraying that occurs while material is being dumped into the receiving hoppers. Dust is prevented because the material is crushed in a partially wet condition. The crushers are inside a fully enclosed building, so any dust that is generated is captured and controlled by the fabric filter

3. <u>Load-in to storage bins:</u>

From Supplement #1 (1983) to the Ohio EPA's Reasonably Available Control Measures (RACM) for Fugitive Dust Sources Manual, Chapter 2.1.2, Aggregate Storage Piles, the emission factor for continuous load-in from a conveyor was calculated in PTI 15-01587 using Equation 2, except that the term for wind speed was omitted based on an assumption that the wind speed would be zero because the operation is performed inside a building (see Note below*).

Equation 2: EF = (0.0018) x (S/5) x (U/5) ÷ $(M/2)^2$

Equation 2 as modified in PTI 15-01587: EF = (0.0018) x (S/5) ~~x (U/5)~~ ÷ $(M/2)^2$

where: EF = emission factor in lb_{PE}/ton of material loaded-in
S = silt content, percent by weight
M = moisture content, percent by weight
U = mean wind speed in mph

Applying Equation 2 as modified in PTI 15-01587 using a silt content of 10% and a moisture content of 4%:

$EF_{LOAD\text{-}IN}$ = (0.0018) x (10/5) ÷ $(4/2)^2$ = 0.0009 lb_{PE}/ton

Applying the emission factor to the continuous load-in operation at maximum annual capacity:

$PTE_{LOAD\text{-}IN}$=(200,000 ton/yr) x (0.0009 lb_{PE}/ton)÷ (2000 lb/ton) = 0.09 ton_{PE}/yr

*Note: for a wind speed of zero mph, the equation would result in an emission factor of zero, so the modification used in PTI 15-01587 was erroneous. What was done by omitting the factor (U/5) was to effectively

set the value to 1, which would be the result for a mean wind speed of 5 mph (5/5 = 1). The result was a conservatively high value for the emission factor.

4. Load-out from storage bins:

From Supplement #1 (1983) to the Ohio EPA's Reasonably Available Control Measures (RACM) for Fugitive Dust Sources Manual, Chapter 2.1.2, Aggregate Storage Piles, the emission factor for load-out with a front-end loader was calculated in PTI 15-01587 using Equation 6, except that the term for wind speed was omitted based on an assumption that the wind speed would be zero because the operation is performed inside a building (See Note in the Load-in section above*).

Equation 6: $EF = (0.0018) \times (S/5) \times (U/5) \div (M/2)^2 \div (Y/6)$

Equation 6 as modified in PTI 15-01587: $EF = (0.0018) \times (S/5) \cancel{\times (U/5)} \div (M/2)^2 \div (Y/6)$

where: EF = emission factor in lb_{PE}/ton of material loaded-in
S = silt content, percent by weight
M = moisture content, percent by weight
U = mean wind speed in mph
Y = effective loader capacity in cubic yards

Applying Equation 6 as modified in PTI 15-01587 using a silt content of 10%, a moisture content of 4% and an effective loader capacity of 1.3 cubic yards:

$EF_{LOAD\text{-}OUT} = (0.0018) \times (10/5) \div (4/2)^2 \div (1.3/6) = 0.004154$ lb_{PE}/ton

Applying the emission factor to the load-out operation at maximum annual capacity:

$PTE_{LOAD\text{-}OUT} = (200{,}000 \text{ ton/yr}) \times (0.004154\ lb_{PE}/\text{ton}) \div (2000\ \text{lb/ton}) = 0.42\ ton_{PE}/yr$

Total Controlled Potential-to-Emit:

$= PTE_{RECEIVING} + PTE_{CRUSHING} + PTE_{LOAD\text{-}IN} + PTE_{LOAD\text{-}OUT}$

$= (0.75\ ton_{PE}/yr) + (1.80\ ton_{PE}/yr) + (0.09\ ton_{PE}/yr) + (0.42\ ton_{PE}/yr)$

$= 3.06\ ton_{PE}/yr$

[Authority for term: OAC rules 3745-31-05 and 3745-77-07(C)(1)and PTI P0109639]

c. Emission Limitation:

During the process of dumping raw materials and/or grog into the truck dump receiving hoppers, visible emissions of fugitive dust from the three-sided partial enclosures shall not exceed 10% opacity as a 3-minute average.

Applicable Compliance Method:

If required, compliance with the visible emissions limitation for fugitive dust from material dumping operations shall be determined through visible emissions observations performed in accordance with the requirements specified in Method 9 of 40 CFR Part 60, Appendix A, with the following modifications as specified in OAC rule 3745-17-03(B)(3):

i. the data reduction and average opacity calculation shall be based upon sets of twelve consecutive visible emissions observations recorded at 15-second intervals [i.e., (12 x 15 sec)/60 = one 3-minute set];

ii. opacity observations shall be made from a position that provides the observer a clear view of the emissions unit and the fugitive dust, with the sun behind the observer;

iii. where possible, visible opacity observations shall be conducted at a position of at least fifteen feet from the source of emissions and the line of sight should be approximately perpendicular to the flow of fugitive dust and to the longer axis of the emissions; and

iv. the visible opacity observations shall be made for the point of highest opacity within the fugitive dust emitted from the source.

Also, the duration of the Method 9 observations must be 15 minutes (five 3-minute averages). Compliance with the applicable fugitive emission limit must be based on the average of five 3-minute averages.

[Authority for term: OAC rules 3745-31-05 and 3745-77-07(C)(1)and PTI P0109639]

d. Emission Limitation:

For any conveyor belts that are not enclosed within a building, fugitive emissions from any openings in the conveyor belt coverings shall not exceed 10% opacity as a 6-minute average.

Applicable Compliance Method:

If required, complianceshall be determined through visible emissions observations performed in accordance with the requirements specified in Method 9 of 40 CFR Part 60, Appendix A, and the procedures specified in 40 CFR Part 60, Subpart A (General Provisions, §60.11), with the following additions from 40 CFR Part 60, Subpart OOO:

§60.675(c)(1)(i): The minimum distance between the observer and the emission source shall be 15 feet.

§60.675(c)(1)(ii): The observer shall, when possible, select a position that minimizes interference from other fugitive emission sources, but without compromising the required observer position relative to the sun as specified in Method 9.

§60.675(c)(3): The duration of the Method 9 observations must be 30 minutes (five 6-minute averages). Compliance with the applicable fugitive emission limit must be based on the average of five 6-minute averages.

[Authority for term: OAC rules 3745-31-05 and 3745-77-07(C)(1)and PTI P0109639]

e. Emission Limitation:

For affected facilities enclosed within a building, fugitive emissions from building openings shall not exceed 7% opacity as a 6-minute average.

Applicable Compliance Method:

If required, complianceshall be determined through visible emissions observations performed in accordance with the requirements specified in Method 9 of 40 CFR Part 60, Appendix A, and the procedures specified in 40 CFR Part 60, Subpart A (General Provisions, §60.11), with the following additions from 40 CFR Part 60, Subpart OOO:

§60.675(c)(1)(i): The minimum distance between the observer and the emission source shall be 15 feet.

§60.675(c)(1)(ii): The observer shall, when possible, select a position that minimizes interference from other fugitive emission sources, but without compromising the required observer position relative to the sun as specified in Method 9.

§60.675(c)(3): The duration of the Method 9 observations must be 30 minutes (five 6-minute averages). Compliance with the applicable fugitive emission limit must be based on the average of five 6-minute averages.

§60.675(d)(2): If the owner or operator of the affected facility has previously conducted an initial Method 22 (40 CFR Part 60, Appendix A) performance test before April 22, 2008 that showed zero emissions from the building openings, then the owner or operator is considered to have demonstrated compliance with the 7% opacity limit from §60.672(e)(1). In this case, further testing shall not be required on a regularly scheduled basis (see f)(2)b.iii. below).

§60.675(d)(2), con't.: If the owner or operator of the affected facility has not conducted an initial Method 22 performance test that showed zero emissions from the building openings before April 22, 2008, then the owner or operator must conduct an initial Method 9 performance test as

defined in §60.11 (40 CFR Part 60, Subpart A) and according to the procedures described above to show compliance with the 7% opacity limit. Note: For the initial Method 9 test only, §60.11(b) requires the duration of the observations to be a minimum of 3 hours (thirty 6-minute averages). For any subsequent testing required, the duration of the Method 9 observations shall be reduced to 30 minutes (five 6-minute averages).

[Authority for term: OAC rules 3745-31-05 and 3745-77-07(C)(1)and PTI P0109639]

(2) The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:

a. The emission testing shall be conducted within 6 months after the Effective Date of this permit, and again within 6 months prior to the Expiration Date of this permit.

b. The emission testing shall be conducted to demonstrate compliance with the following visible particulate limitations only, and shall employ the test methods as listed here:

i. 10% opacity as a 3-minute average of fugitive dust from the three-sided partial enclosures for the unloading operations at the truck dump receiving hoppers. Method 9 of 40 CFR Part 60, Appendix A, along with the applicable requirements described in f)(1)c. above.

ii. 10% opacity as a 6-minute average from any openings in conveyor belt coverings for conveyor belts that are not enclosed within a building. Method 9 of 40 CFR Part 60, Appendix A, along with the applicable requirements described in f)(1)d. above.

iii. Only if required (see f)(1)e. above, specifically the requirements from 40 CFR §60.675(d)(2)): 7% opacity as a 6-minute average from building openings for affected facilities enclosed within a building. Method 9 of 40 CFR Part 60, Appendix A, along with the applicable requirements described in f)(1)e. above.

c. Unless otherwise specified or approved by CCHD-APCD, the visible particulate emissions observation(s) shall be conducted while the emissions unit is operating at or near its maximum capacity. To expand upon the previous sentence, the test(s) shall be conducted under those representative conditions that challenge, to the fullest extent possible, a facility's ability to meet the applicable emissions limits and/or control requirements, unless otherwise specified or approved by CCHD-APCD. Although this generally consists of operating the emissions unit at its maximum material input/production rates and results in the highest emission rate of the tested pollutant, there may be circumstances where a lower emissions loading is deemed the most challenging control scenario. Failure to test under these conditions is justification for not accepting the test results as a demonstration of compliance.

d. The pressure drop at the fabric filter shall be monitored and recorded once at the beginning and once at the end of the Method 9 testing period. Both readings shall be taken while the emissions unit is operating as described in c. above. In terms more specific to the processes for this emissions unit, “beginning...of the testing period” means during the first truck dump, and “end of the testing period” means during the last truck dump.

e. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to CCHD-APCD. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emission unit operating parameters, the time(s) and date(s) of the testing, and the person(s) who will be conducting the testing. Failure to submit such notification for review and approval prior to the testing may result in CCHD-APCD’s refusal to accept the results of the emissions testing.

f. Personnel from CCHD-APCD shall be permitted to witness the testing, examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

g. A comprehensive written report on the results of the emission testing shall be signed by the person or persons responsible for the testing and submitted to CCHD-APCD within 30 days following completion of the testing. The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from CCHD-APCD.

[Authority for term: OAC rules 3745-31-05 and 3745-77-07(C)(1),40 CFR Part 64,and PTI P0109639]

g) Miscellaneous Requirements

(1) Informational Note: the process of receiving materials into hoppers is not subject to 40 CFR Part 60, Subpart OOO, Standards of Performance for Nonmetallic Mineral Processing Plants, because it is categorized as truck dumping, which is not listed among the types of affected facilities in §60.670(a)(1). More specifically, §60.672(d) states that “truck dumping of nonmetallic minerals into any screening operation, feed hopper, or crusher is exempt from the requirements of this section,” where “requirements of this section” refers to the emissions limitations in Tables 2 & 3 of Subpart OOO.

[Authority for term: OAC rule3745-31-05and PTI P0109639]

3. P012, Grinding and screening

Operations, Property and/or Equipment Description:

Secondary grinding and screening, temporary storage, then transfer via covered conveyor belt to an adjoining building. Emissions are controlled by a dust collector that exhausts inside a fully enclosed building. There are two separate, parallel processes for shale plus grog and clay plus grog, including separate dust collectors.

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
	OAC rule 3745-31-05(A)(3) [Best Available Technology (BAT) established in PTI P0109639, issued 11/18/2014]	Fugitive particulate emissions (PE) from the totally enclosed buildings shall not exceed 25.0 tons/yr. See b)(2)a. below. Compliance with this rule also includes compliance with the requirements specified in 40 CFR Part 60, Subpart OOO.
	40 CFR Part 60, Subpart OOO (40 CFR 60.670 – 60.676)	See b)(2)b. below.
c.	40 CFR Part 60, Subpart A (40 CFR 60.1-60.19)	The General Provisions of 40 CFR Part 60 are applicable except as defined in Table 1 of 40 CFR Part 60, Subpart OOO.
d.	40 CFR, Part 64 (40 CFR 64.1-64.10) [Compliance Assurance Monitoring (CAM)]	See b)(2)a.ii. and iii., d)(3) through (7), e)(2), and e)(5).

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-17-07(A) [This rule is cited because it would apply to the outlet of the fabric filter inside the building, which is defined as a "stack" per Engineering Guide No. 75]	The visible particulate emission limitations specified in this rule are less stringent than the visible particulate emission limitations established pursuant to 40 CFR Part 60, Subpart OOO.
f.	OAC rule 3745-17-07(B)(1) [VE of fugitive dust in Appendix A areas]	The visible particulate emissions limitations specified in this rule are less stringent than the visible emissions limitationsspecified in 40 CFR Part 60, Subpart OOO.
g.	OAC rule 3745-17-08(B) [RACM for fugitive dust in Appendix A areas]	The control measures established pursuant to this rule are equal to or less stringent than the control measures established pursuant to OAC rule 3745-31-05(A)(3) and in 40 CFR Part 60, Subpart OOO, as applicable.
h.	OAC rule 3745-17-11(B) [Restrictions on particulate emissions from industrial processes]	The particulate emission limitations specified in this rule are less stringent than the particulate emission limitations established pursuant to OAC rule 3745-31-05(A)(3).

(2) Additional Terms and Conditions

a. The following are additional best available technology (BAT) requirements, including best available control measures:

i. The grinding, screening, and storage operations (including the load-in and load-out of materials using a front-end loader) shall take place within totally enclosed buildings.

ii. The grinding of shale plus grog in the dry grinding pan, screening with 180 square feet of heated vibro screens, the storage of the ground shale plus grog, all conveyors except #6a, #6b, #7, and #22, conveyor transfer points except those associated with the previously listed conveyors, and the $BaCO_3$ feeder shall be serviced by a 28,000 cfm fabric filter DCP012S, which is vented inside the building. The grinding of clay plus grog in the hammer mill grinder, screening with 208 square feet of heated vibro screens, the storing of ground clay plus grog, all conveyors except #1, #2, #3, and #33, conveyor transfer points except those associated with the previously listed conveyors, and the $BaCO_3$ feeder shall be

serviced by a 28,000 cfm fabric filter DCP012C, which is vented inside the building. Thesefabric filtersshall have capture efficiencies sufficient tominimizeor eliminate visible particulate emissions of fugitive dust at thepoints of capture to the extent possible with good engineering design.

iii. Emissions from the processes described in ii. above shall be vented to the fabric filters, also described in ii. above, at all times the emissions unit is in operation.

iv. Conveyor belts shall be the only affected facilities which are not enclosed within a building. Any conveyor belts that are not contained in a totally enclosed building shall be covered.

v. For the load-in of crushed materials onto a conveyor belt using a front-end loader, the drop height of the front-end loader shall be minimized.

b. The following are the applicable emission limitations from 40 CFR Part 60, Subpart OOO, Standards of Performance for Nonmetallic Mineral Processing Plants. This emissions unit is an "affected facility" (as defined in §§60.670 and 60.671) that commenced construction, modification, or reconstruction after August 31, 1983, but before April 22, 2008.

i. For any conveyor belts that are not enclosed within a building, fugitive emissions from any openings in the conveyor belt coverings shall not exceed 10% opacity as a 6-minute average. [Specific reference: §60.672(b)]

ii. Requirements for emissions from affected facilities enclosed in a building: fugitive emissions from building openings shall not exceed 7% opacity as a 6-minute average. [Specific reference: §60.672(e)(1)]

c) Operational Restrictions

(1) The permittee shall be limited to grinding and screening a total net amount of 200,000 tons of raw material plus grog in this emissions unit per calendar year.

[Authority for term: OAC rules 3745-31-05 and 3745-77-07(A)(1)and PTI P0109639]

d) Monitoring and/or Recordkeeping Requirements

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

a. The net amount of material processed through this emissions unit (ground and screened, then transferred to production), in tons.

b. The year-to-date total net amount of material processed through this emissions unit (ground and screened, then transferred to production), in tons, shall be updated by adding the weekly value recorded in a. above to the total for all previous weeks during the current calendar year.

[Authority for term: OAC rules 3745-31-05 and 3745-77-07(C)(1)and PTI P0109639]

(2) The permittee shall perform weekly visible emissions checks for the following equipment and operations listed in a.– b. below when the emissions unit is in operation and when the weather conditions allow:

a. For the interconnecting belt #22 for shale plus grog, and for the interconnecting belt #33 for clay plus grog, which are totally covered and not enclosed within any building, check for any visible particulate emissions of fugitive dust around the conveyors while the conveyors are transporting material.

b. While any of the following operations, property, and/or equipment that are all enclosed in buildings are in use, check for any visible particulate emissions of fugitive dust escaping from the buildings: the shale plus grog dry grinding pan and associated screens, the clay plus grog hammer mill grinder and associated screens, the $BaCO_3$ feeders, belt conveyors inside buildings, and the storage tanks for ground shale plus grog and for ground clay plus grog with continuous loading by belt conveyors.

c. The presence or absence of any visible emissions observed during any of the weekly checks required in a.– b. above shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

i. the location and the color of the emissions;

ii. whether the emissions are representative of normal operations;

iii. if the emissions are not representative of normal operations, the cause of the abnormal emissions;

iv. the total duration of any visible fugitive emissions incident; and

v. any corrective actions taken to eliminate the visible fugitive 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 iv. above or continue the 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

[Authority for term: OAC rules 3745-31-05 and 3745-77-07(C)(1)and PTI P0109639]

(3) In order to maintain compliance with the applicable emission limitation contained in b)(1), the acceptable range established for the pressure drop across the fabric filters DCP012S

and DCP012C servicing this emissions unit is between 3 to 5 inches of water while the emissions unit is in operation.

[Authority for term: OAC rules 3745-31-05 and 3745-77-07(A)(1), PTI P0109639, and 40 CFR 64.3]

(4) The permittee shall properly install, operate, and maintain equipment to continuously monitor the pressure drop, in inches of water, across fabric filters DCP012S and DCP012C when the controlled emissions unit is in operation, including periods of startup and shutdown. The permittee shall record the pressure drop across each fabric filter 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 for the pressure drop deviates from the limit or range 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 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 acrossfabric filters DCP012S and DCP012C is effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by CCHD-APCD. 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 particulate emission 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.

[Authority for terms: OAC rules 3745-31-05 and 3745-77-07(C)(1),PTI P0109639, and 40 CFR 64.3, 40 CFR 64.7(c), and 40 CFR 64.9(b)]

(5) The CAM plan for this emissions unit has been developed for particulate emissions. The CAM performance indicator for the fabric filters controlling this emissions unit is pressure drop with an indicator level of pressure drop maintained according to the range specified in d)(3), in accordance with the monitoring and recordkeeping requirements specified in d)(4).

These indicators were selected because they are indicative of operation of the fabric filters in a manner necessary to comply with the particulate emission standards. The pressure drop increases as the filter medium starts to bind and is a good indicator to replace filter media.

Upon detecting an excursion of any of the particulate emission indicator ranges listed above, the owner or operator shall restore operation of the emissions unit and/or its control equipment to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion. Such actions may include initial inspection and evaluation, recording that operation(s) returned to normal without operator action, or any necessary follow-up actions to return operation to within the indicator range.

If a determination is made by the Administrator or Ohio EPA that the permittee has not used acceptable procedures in response to an excursion or exceedance based on the results of a determination made under 40 CFR Part 64.7(d)(2), the permittee may be required to develop a Quality Improvement Plan (QIP) consistent with the requirements of 40 CFR Part 64.8. In addition, a QIP will be developed and implemented if the threshold of one occurrence per quarter is exceeded.

[Authority for term: OAC rule 3745-77-07(C)(1) and 40 CFR Part 64]

(6) The permittee shall maintain the necessary parts for routine repairs of the monitoring equipment.

[Authority for term: OAC rule 3745-77-07(C)(1) and 40 CFR, Part 64.7(b)]

(7) If the permittee identifies a failure to achieve compliance with an emission limitation or standard for which the approved monitoring under 40 CFR Part 64 did not provide an indication of an excursion or exceedance, or the results of compliance or performance testing document a need to modify the existing indicator levels, the permittee shall promptly notify CCHD-APCD, and if necessary, submit a proposed modification to the Title V permit to address the necessary monitoring changes. Such a modification may include, but is not limited to, re-establishing indicator ranges or designated conditions (i.e. levels), modifying the frequency of conducting monitoring and collecting data, or the monitoring of additional parameters.Approved revisions to the monitoring will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by a means of a minor permit modification.

[Authority for term: OAC rule 3745-77-07(C)(1) and 40 CFR, Part 64]

e) Reporting Requirements

(1) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.

[Authority for term: OAC rules 3745-31-05 and 3745-15-03(A)and PTI P0109639]

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

a. any period of time (start time and date, and end time and date) when the total tons of material, as recorded per term d)(1)b., exceeded the operational restriction listed in term c)(1) above.

b. any period of time (start time and date, and end time and date) when the emissions unit was in operation and the process emissions were not vented to fabric filters DCP012S and/or DCP012C as applicable;

c. each period of time (start time and date, and end time and date) when the pressure drop across the fabric filters was outside the allowable range specified in d)(3) above;

d. each incident of deviation described in c. above where a prompt investigation was not conducted;

e. each incident of deviation described in c. above 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

f. each incident of deviation described in c. above 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

[Authority for term: OAC rules3745-15-03(B)(1)(a), 3745-15-03(C), 3745-31-05 and 3745-77-07(C)(1)and 40 CFR Part 64.9(a) and PTI P0109639]

(3) The permittee shall submit semiannual reports that identify the following at a minimum:

a. all days during which any visible particulate emissions of fugitive dust were observed at any of the locations identified in d)(2) above; and

b. any corrective actions taken to eliminate the visible particulate emissions.

The semiannual reports shall be submitted along with the semiannual deviation reports required per the reporting requirements of the Standard Terms and Conditions of this permit.

[Authority for term: OAC rules 3745-31-05 and 3745-77-07(C)(1)and PTI P0109639]

(4) In the annual Fee Emissions Report (FER), the permittee shall report the throughput for this emissions unit as the total net amount of material processed (ground and screened, then transferred to production)during the previous calendar year, in tons, based on the recordkeeping required in d)(1)b. above. Also, the total particulate emissions from this emissions unit, in tons, during the previous calendar year shall be reported in the annual FER based on the calculation method shown in f)(1)a. below, but using the actual totalamount of material received instead of the operational limit of 200,000 tons per calendar year.

[Authority for term: OAC rules 3745-31-05 and 3745-15-03(A)and PTI P0109639]

(5) If the permittee is required under 40 CFR Part 64.8 and d)(5) of this permit to develop a QIP, the permittee shall submit quarterly reports that contact a description of the actions taken to implement a QIP during the reporting period. Upon completion of a QIP, the permittee shall include documentation that the implementation of the plan has been completed and reduced the likelihood of excursions.

[Authority for term: OAC rule 3745-77-07(C)(1) and 40 CFR Part 64]

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. <u>Emissions Limitation:</u>

Fugitive particulate emissions (PE) from the totally enclosed buildings shall not exceed 25.0 tons/yr.

Applicable Compliance Method:

This emissions limitation was established by calculating the maximum potential-to-emit with controls using the operational restriction of 200,000 tons of material per year processed thru to production and emission factors for 1) grinding, 2) screening and 3) temporary storage. For the grinding and screening operations, the overall throughput was estimated at five times the net amount of material processed per year due to multiple cycling back and regrinding of material that did not pass through the screens during the previous cycle. In other words, the maximum amount of material processed through these operations per year is effectively (5 x 200,000 tons) = 1,000,000 tons per year. So for this reason, the equations shown below for grinding and screening include a factor of 5, while the equation for storage does not.

1. Grinding:

The emission factor used was 76 lb_{PE}/ton of material ground, as found in FIRE 6.25 for SCC 3-05-008-02 (Industrial Processes - Mineral Products - Ceramic clay/tile manufacture - Comminution: crushing, grinding & milling). Uncontrolled potential-to-emit was calculated first as follows:

Uncontrolled $PTE_{GRINDING}$ = (5) x (200,000 ton/yr) x (76.0 lb_{PE}/ton) ÷ (2000 lb/ton) = 38,000 ton_{PE}/yr

Controlled potential-to-emit was then calculated based upon an estimated 90% containment efficiency for the enclosure around the grinding equipment, followed by an estimated 99.5% control efficiency for the fabric filters.

Controlled $PTE_{GRINDING}$ = (38,000 ton_{PE}/yr) x (1 – 0.90) x (1 – 0.995) = 19.0 ton_{PE}/yr

Comments regarding the preceding equation:

(38,000 ton_{PE}/yr) x (90% containment efficiency) = 34,200 ton_{PE}/yr= material thatstays within the grinding & screening loop. The balance (38,000 – 34,200 = 3800 ton_{PE}/yr) is captured by the collection system and sent to the fabric filter.

(3800 ton_{PE}/yr) x (1 – 99.5% control efficiency) = 19.0 ton_{PE}/yr emitted from the outlet of the fabric filter into the building. A very conservative assumption was then made that the capture efficiency of the building is 0%, so that all 19 ton/yr can *potentially* become fugitive emissions from openings in the building.

2. Screening:

The emission factor used was 8.5 lb_{PE}/ton of material screened, as found in FIRE 6.25 for SCC 3-05-003-02 (Industrial Processes - Mineral Products - Brick Manufacture - Raw material grinding & screening). Uncontrolled potential-to-emit was calculated first as follows:

Uncontrolled $PTE_{SCREENING}$ = (5) x (200,000 ton/yr) x (8.5 lb_{PE}/ton) ÷ (2000 lb/ton) = 4,250 ton_{PE}/yr

Controlled potential-to-emit was then calculated based upon an estimated 75% containment efficiency for the enclosure around the screening equipment, followed by an estimated 99.5% control efficiency for the fabric filters.

Controlled $PTE_{SCREENING}$ = (4,250 ton_{PE}/yr) x (1 – 0.75) x (1 – 0.995) = 5.31 ton_{PE}/yr

Comments regarding the preceding equation:

(4,250ton_{PE}/yr) x (75% containment efficiency) = 3,187.5ton_{PE}/yr= material thatstays within the grinding & screening loop. The balance (4,250–3,187.5 = 1,062.5 ton_{PE}/yr) is captured by the collection system and sent to the fabric filter.

(1,062.5ton_{PE}/yr) x (1 – 99.5% control efficiency) = 5.31ton_{PE}/yr emitted from the outlet of the fabric filter into the building. A very conservative assumption was then made that the capture efficiency of the building is 0%, so that all 5.31 ton/yr can *potentially* become fugitive emissions from openings in the building.

3. <u>Storage:</u>

The finished ground and screened material is temporarily stored in steel vessels with a containment efficiency of 99.999%. Based on the screen size, an average of 35% of the material becomes airborne during storage.

$PTE_{STORAGE}$ = (1) x (200,000 ton/yr) x (0.35) x (1 – 0.99999) = 0.7 ton_{PE}/yr

Comments regarding the preceding equation:

(200,000 ton_{PE}/yr) x (35% airborne) = 70,000 ton_{PE}/yr "uncontrolled emissions"(i.e., 35% is acting like an emission factor in this case).

(70,000 ton_{PE}/yr) x (1 – 99.999% containment efficiency) = 0.7 ton_{PE}/yr emitted from the small openings in the storage vessels. A very conservative assumption was then made that the capture efficiency of the building is 0%, so that all 0.7 ton/yr can *potentially* become fugitive emissions from openings in the building.

<u>Total Controlled Potential-to-Emit:</u>

= $PTE_{GRINDING}$ + $PTE_{SCREENING}$ + $PTE_{STORAGE}$

= (19.0 ton_{PE}/yr) + (5.3 ton_{PE}/yr) + (0.7 ton_{PE}/yr)

= 25.0 ton_{PE}/yr

[Authority for term: OAC rules 3745-31-05 and 3745-77-07(C)(1)and PTI P0109639]

b. Emissions Limitation:

For any conveyor belts that are not enclosed within a building, fugitive emissions from any openings in the conveyor belt coverings shall not exceed 10% opacity as a 6-minute average.

Applicable Compliance Method:

If required, complianceshall be determined through visible emissions observations performed in accordance with the requirements specified in Method 9 of 40 CFR Part 60, Appendix A, and the procedures specified in 40 CFR Part 60, Subpart A (General Provisions, §60.11), with the following additions from 40 CFR Part 60, Subpart OOO:

§60.675(c)(1)(i): The minimum distance between the observer and the emission source shall be 15 feet.

§60.675(c)(1)(ii): The observer shall, when possible, select a position that minimizes interference from other fugitive emission sources, but without compromising the required observer position relative to the sun as specified in Method 9.

§60.675(c)(3): The duration of the Method 9 observations must be 30 minutes (five 6-minute averages). Compliance with the applicable fugitive emission limit must be based on the average of five 6-minute averages.

[Authority for term: OAC rules 3745-31-05 and 3745-77-07(C)(1)and PTI P0109639]

c. Emission Limitation:

For affected facilities enclosed within a building, fugitive emissions from building openings shall not exceed 7% opacity as a 6-minute average.

Applicable Compliance Method:

If required, complianceshall be determined through visible emissions observations performed in accordance with the requirements specified in Method 9 of 40 CFR Part 60, Appendix A, and the procedures specified in 40 CFR Part 60, Subpart A (General Provisions, §60.11), with the following additions from 40 CFR Part 60, Subpart OOO:

§60.675(c)(1)(i): The minimum distance between the observer and the emission source shall be 15 feet.

§60.675(c)(1)(ii): The observer shall, when possible, select a position that minimizes interference from other fugitive emission sources, but without compromising the required observer position relative to the sun as specified in Method 9.

§60.675(c)(3): The duration of the Method 9 observations must be 30 minutes (five 6-minute averages). Compliance with the applicable fugitive emission limit must be based on the average of five 6-minute averages.

§60.675(d)(2): If the owner or operator of the affected facility has previously conducted an initial Method 22 (40 CFR Part 60, Appendix A) performance test before April 22, 2008 that showed zero emissions from the building openings, then the owner or operator is considered to have demonstrated compliance with the 7% opacity limit from §60.672(e)(1). In this case, further testing shall not be required on a regularly scheduled basis (see f)(2)b.ii. below).

§60.675(d)(2), con't.: If the owner or operator of the affected facility has not conducted an initial Method 22 performance test that showed zero emissions from the building openings before April 22, 2008, then the owner or operator must conduct an initial Method 9 performance test as defined in §60.11 (40 CFR Part 60, Subpart A) and according to the procedures described above to show compliance with the 7% opacity limit. Note: For the initial Method 9 test only, §60.11(b) requires the duration of the observations to be a minimum of 3 hours (thirty 6-minute averages). For any subsequent testing required, the duration of the Method 9 observations shall be reduced to 30 minutes (five 6-minute averages).

[Authority for term: OAC rules 3745-31-05 and 3745-77-07(C)(1)and PTI P0109639]

(2) The permittee shall conduct, or have conducted, emissions testing for this emissions unit in accordance with the following requirements:

a. The emissions testing shall be conducted within 6 months after the Effective Date of this permit, and again within 6 months prior to the Expiration Date of this permit.

b. The emission testing shall be conducted to demonstrate compliance with the following visible particulate limitations, and shall employ the test methods as listed here:

i. 10% opacity as a 6-minute average from any openings in conveyor belt coverings for conveyor belts that are not enclosed within a building. Method 9 of 40 CFR Part 60, Appendix A, along with the applicable requirements described in f)(1)b. above.

ii. Only if required (see f)(1)c. above, specifically the requirements from 40 CFR §60.675(d)(2)): 7% opacity as a 6-minute average from building openings for affected facilities enclosed within a building. Method 9 of 40 CFR Part 60, Appendix A, along with the applicable requirements described in f)(1)c. above.

c. Unless otherwise specified or approved by CCHD-APCD, the visible particulate emissions observation(s) shall be conducted while the emissions unit is

operatingat or near its maximum capacity. To expand upon the previous sentence, the test(s) shall be conducted under those representative conditions that challenge to the fullest extent possible a facility's ability to meet the applicable emissions limits and/or control requirements, unless otherwise specified or approved by CCHD-APCD. Although this generally consists of operating the emissions unit at its maximum material input/production rates and results in the highest emission rate of the tested pollutant, there may be circumstances where a lower emissions loading is deemed the most challenging control scenario. Failure to test under these conditions is justification for not accepting the test results as a demonstration of compliance.

d. The pressure drop at the fabric filters shall be monitored and recorded once at the beginning and once at the end of the testing period. Both readings shall be taken while the emissions unit is operating as described in c. above.

e. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to CCHD-APCD. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emission unit operating parameters, the time(s) and date(s) of the testing, and the person(s) who will be conducting the testing. Failure to submit such notification for review and approval prior to the testing may result in CCHD-APCD's refusal to accept the results of the emissions testing.

f. Personnel from CCHD-APCD shall be permitted to witness the testing, examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

g. A comprehensive written report on the results of the emissions testing shall be signed by the person or persons responsible for the testing and submitted to CCHD-APCD within 30 days following completion of the testing. The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from CCHD-APCD.

[Authority for term: OAC rules 3745-31-05 and 3745-77-07(C)(1), 40 CFR Part 64,and PTI P0109639]

g) Miscellaneous Requirements

(1) None.

4. Emissions Unit Group X002:P004, Tunnel Kiln #1, P005, Tunnel Kiln #2, P006, Tunnel Kiln #3, P014, Tunnel Kiln #4

Operations, Property and/or Equipment Description:

The following description applies equally to emissions units P004, P005, P006 and P014: 11.2 mmBtu/hr natural gas fired tunnel kiln, 3.97 ton/hrmaximum feed rate, 3.42ton/hr max production rate, 2200º F max temp. Uncontrolled emissions exhaust to common stack EPX002.

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
	OAC rule 3745-31-05(A)(3) [Best Available Technology (BAT) established in PTI P0109639, issued 11/18/2014]	The following emissions limitations shall apply to emissions units P004, P005, P006 and P014 combined: Sulfur dioxide (SO_2) emissions shall not exceed 76.65 lb/hr as a weekly average excluding non-operating periods, 12,877 lb/wk in any 7-day week, and 306.53 tons/yr on a calendar year basis. Fluoride (F^-) emissions shall not exceed 6.5 lb/hr and 28.47 tons/yr. PE/PM emissions (filterable portion only) shall not exceed21.65 lb/hr and 94.83 tons/yr. See b)(2)a. below. Nitrogen oxides (NO_x) emissions shall not exceed 16.06lb/hr and 70.34 tons/yr. Compliance with this rule also includes compliance with the requirements specified in OAC rule 3745-17-07(A) See b)(2)b. and c)(1)-(3) below
	OAC rule 3745-17-07(A)	Visible particulate emissions from the

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		common stack serving emissions units P004, P005, P006 and P014 shall not exceed 20 percent opacity, as a six-minute average, except as provided by rule.
c.	OAC rule 3745-17-11(B) [Restrictions on particulate emissions from industrial processes]	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3). See f)(1)f. below
d.	OAC rule 3745-18-06(E)(1) and3745-18-82(A)(3) [SO_2 emission limits, general provisions for Stark County]	The emission limitation specified by these rulesare less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3). See f)(1)g. below

(2) Additional Terms and Conditions

a. For the purpose of OAC rule 3745-31-05(A)(3), all particulate emissions (PE/PM) are assumed to be particulate matter equal-to or less than 10 microns in diameter; i.e., PE/PM_{10}.

b. The height of the stack serving these emissions units shall be a minimum of 45 meters from the ground level.

c) Operational Restrictions

(1) The permittee shall burn only natural gas as fuel in emissions units P004, P005, P006 and P014.

[Authority for term: OAC rules 3745-31-05 and 3745-77-07(A)(1)and PTI P0109639]

(2) The total amount of sulfur in the feed materials used in emissions units P004, P005, P006 and P014 combined shall not exceed 8,472 pounds in any one week. See g)(2) below for an explanation of the calculations used to establish this operational restriction. This restriction shall change if the current sulfur emission factor changes in accordance with g)(1) below.

[Authority for term: OAC rules 3745-31-05 and 3745-77-07(A)(1)and PTI P0109639]

(3) The total amount of sulfur in the feed materials used in emissions units P004, P005, P006 and P014 combined shall not exceed 100,832 pounds in any one calendar quarter. See g)(2) below for an explanation of the calculations used to establish this operational

restriction. This restriction shall change if the current sulfur emission factor changes in accordance with g)(1) below.

[Authority for term: OAC rules 3745-31-05 and 3745-77-07(A)(1)and PTI P0109639]

d) Monitoring and/or Recordkeeping Requirements

(1) The permittee shall perform checks, at least once every two-week period and within fifteen days of the last check performed, when the emissions unit(s) is(are) in operation, and when weather conditions allow, for any visible particulate emissions from the stack serving these emissions units. The presence or absence of any visible emissionsshall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

a. the color of the emissions;

b. whether the emissions are representative of normal operations;

c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;

d. the total duration of any visible emissions incident; and

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

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

[Authority for term: OAC rules 3745-31-05 and 3745-77-07(C)(1)and PTI P0109639]

(2) For each day during which the permittee burns a fuel other than natural gas in any of these emissions units, the permittee shall maintain a record of the type and quantity of fuel burned, and in which emissions unit it was burned.

[Authority for term: OAC rules 3745-31-05 and 3745-77-07(C)(1)and PTI P0109639]

(3) The permittee shall comply with the following daily and weekly monitoring and recordkeeping requirements:

a. The following procedure shall be used to obtain a representative daily composite sample and a representative weekly composite sample of the clay and shale feed materials fed to emissions units P004, P005, P006 and P014:

i. While any of these emissions units are in operation, daily samples shall be taken of the clay and shale materials used in tile production. A daily grab sample of clay shall be taken from the belt conveyor leading from one of the two ground clay storage tanks that feed the conveyor belts feeding the pug mixers. Likewise, a daily grab sample of shale is taken from the belt conveyor leading from one of the two ground shale storage tanks that feed the conveyor belts feeding the pug mixers.

ii. The clay and shale samples described in i. above shall be mixed together in the same proportions, by mass, as the clay and shale that will be used in products fired that day, based on product specifications and the daily production schedule, in order to obtain a representative daily composite sample.

iii. The daily composite sample shall be placed in a composite bottle with lid to produce a weekly composite sample. The weekly composite sample shall be mixed thoroughly so that a sample may be taken from the bottle to represent the entire week's production from these emissions units.

b. The permittee shall maintain the following daily and weekly production records:

i. the actual daily production rate in terms of the number of kiln cars fired, by product code, and the number of hours of operation (time when products were being fired), for each of the emissions units in this group separately;

ii. the total weekly hours of operation (time when products were being fired), for each of the emissions units in this group separately;

iii. the total weekly amount, in tons (dry weight) of feed materials used in all of the emissions units in this group combined.

c. The following procedure shall be used to determine the sulfur content of each weekly composite sample:

i. The weekly composite sample from (3)a.iii. above shall be analyzed utilizing ASTM Test Method D1552 or E350-97 to determine the corrected, weighted-average sulfur content of the feed materials as a mass fraction.

ii. For quality assurance, the permittee shall perform a calibration test before the weekly composite sample is analyzed for sulfur content. Three standard samples with known sulfur concentration shall be analyzed, and the measured +/- differences from each of the known concentrations shall be averaged to obtain a calibration correction factor.

iii. The permittee shall maintain the following weekly records:

(a) the value of the corrected, weighted-average sulfur content determined in c.i. above ($lb_{S\text{-}FEED}/lb_{FEED}$);

(b) the sulfur concentration of the three standard samples used to calibrate the equipment;

(c) the measured +/- difference from the known sulfur concentration for each of the three standard samples; and

(d) the average calibration correction factor.

[Authority for term: OAC rules 3745-31-05 and 3745-77-07(C)(1)and PTI P0109639]

(4) The permittee shall maintain weekly records of the following information for emissions units P004, P005, P006 and P014 combined:

a. The total amount of sulfur in the feed materials used in the combined emissions units ($lb_{S\text{-}FEED}$/wk), calculated by multiplying the tons of feed material from (3)b.iii. above by 2000 lb/ton, then multiplying by the corrected, weighted-average sulfur content from (3)c. above:

$$(ton_{FEED}/wk) \times (2000\ lb/ton) \times \text{sulfur content } (lb_{S\text{-}FEED}/lb_{FEED}) = lb_{S\text{-}FEED}/wk$$

b. The weekly SO_2 emission rate (lb_{SO2}/wk), calculated by multiplying the weekly amount of sulfur usage in the combined emissions units ($lb_{S\text{-}FEED}$/wk) times the current sulfur emission factor, EF, (see g)(1) below), then multiplying the result by 2.0 based on the ratio of the molecular weight of SO_2 (64) to the molecular weight of S (32).

$$(lb_{S\text{-}FEED}/wk) \times EF(lb_{S\text{-}STACK}/lb_{S\text{-}FEED}) \times (2.0\ lb_{SO2}/lb_{S\text{-}STACK}) = lb_{SO2}/wk$$

c. The average hourly SO_2 emission rate (lb_{SO2}/hr), calculated as the weekly SO_2 emission rate (lb_{SO2}/wk) in the combined emissions units divided by the highest number of weekly hours of operation among any of the four <u>individual</u> emissions units in this group, from the data recorded in (3)b.ii above.

d. The quarter-to-date total amount, in pounds, of sulfur in the feed materials used in the combined emissions units shall be updated by adding the weekly value recorded in a. above ($lb_{S\text{-}FEED}$/wk) to the total for all the previous weeks during the current calendar quarter.

e. The year-to-date total amount, in tons, of sulfur in the feed materials used in the combined emissions units shall be updated by adding the weekly value recorded in a. above ($lb_{S\text{-}FEED}$/wk) to the total for all the previous weeks during the current calendar year, then dividing by 2000 lb/ton.

f. The year-to-date total amount, in tons, of SO_2 emissions from the combined emissions units shall be updated by adding the weekly value recorded in b. above (lb_{SO2}/wk) to the total for all the previous weeks during the current calendar year, then dividing by 2000 lb/ton.

[Authority for term: OAC rules 3745-31-05 and 3745-77-07(C)(1)and PTI P0109639]

e) Reporting Requirements

(1) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.

[Authority for term: OAC rules 3745-31-05 and 3745-15-03(A)and PTI P0109639]

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

a. all days during which a fuel other than natural gas was burned in emissions unit P004, P005, P006 or P014, along with the type and quantity of fuel burned, and in which emissions unit it was burned;

b. each week during which the average hourly SO_2 emissions, as calculated in d)(4)c. above for emissions units P004, P005, P006 and P014 combined, exceeded the hourly emissions limit in b)(1)a. above. For each such week, the value of the calculated average hourly SO_2 emissions shall also be reported;

c. each week during which the weekly SO_2 emissions, as calculated in d)(4)b. above for emissions units P004, P005, P006 and P014 combined, exceeded the weekly emissions limit in b)(1)a. above. For each such week, the value of the calculated weekly SO_2 emissions shall also be reported;

d. each week during which the total amount of sulfur in the feed materials used in emissions units P004, P005, P006 and P014 combined, as calculated in d)(4)a. above, exceeded the operational restriction defined in c)(2) above. For each such week, the value of the calculated pounds of sulfur used shall also be reported; and

e. each calendar quarter during which the total amount of sulfur in the feed materials used in emissions units P004, P005, P006 and P014 combined, as calculated in d)(4)d. above, exceeded the operational restriction defined in c)(3) above. For each such quarter, the value of the calculated pounds of sulfur used shall also be reported.

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

[Authority for term: OAC rules 3745-31-05 and 3745-77-07(C)(1)and PTI P0109639]

(3) The permittee shall submit semi-annual reports that identify the following at a minimum:

a. all days during which any visible particulate emissions were observed from the stack serving these emissions units; and

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

c. The semiannual reports shall be submitted along with the semiannual deviation reports required per the reporting requirements of the Standard Terms and Conditions of this permit.

[Authority for term: OAC rules 3745-31-05 and 3745-77-07(C)(1)and PTI P0109639]

(4) In the annual Fee Emissions Report (FER), the permittee shall report the total SO_2 emissions from emissions units P004, P005, P006 and P014 combined, in tons, based upon the recordkeeping from d)(4)f. above for the previous calendar year.

[Authority for term: OAC rules 3745-31-05 and 3745-15-03(A)and PTI P0109639]

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 Limitations:

Sulfur dioxide (SO_2) emissions shall not exceed 76.65 lb/hr as a weekly average excluding non-operating periods and 12,877 lb/wk in any 7-day week, for emissions units P004, P005, P006 and P014 combined.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the recordkeeping required in d)(4) aboveand testing required in term f)(2) below.

The 76.65 lb/hrlimit for SO_2 was established as BAT in PTI 15-1173, issued 7/19/1995. PTI 15-1173 was the initial installation permit for P014, and the PTE for this new tunnel kiln was provided by the permittee in the permit application as 14.65 lb/hr based on stack testing conducted 4/14/1994. The additional 14.65 lb/hr for P014 was added to the combined PTE of 62.0 lb/hr established in Chapter 31 modification PTIs 15-248 and 15-290 issued 07/06/1995 for the three existing tunnel kilns (P004, P005 and P006) to give a total PTE of 76.65 lb/hr.

The weekly emissions limit was established by multiplying the maximum hourly limit by 168 hr/wk:

$(76.65\ lb_{SO2}/hr) \times (168\ hr/wk) = 12{,}877\ lb_{SO2}/wk$

b. Emission Limitation:

Sulfur dioxide (SO_2) emissions shall not exceed 306.53 tons/yr on a calendar year basis for emissions units P004, P005, P006 and P014 combined.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the recordkeeping required in d)(4) above.

The 306.53 ton/yrlimit for SO_2 was established as BAT in PTI 15-1173, issued 7/19/1995. PTI 15-1173 was the initial installation permit for P014, and the annual potential-to-emit (PTE) for this new tunnel kiln was provided by the permittee in the permit application as 61.53 ton/yr based on 14.65 lb/hr (from stack testing conducted 4/14/1994) and an assumption of 50 weeks maximum operation per year*:

$(14.65\ lb_{SO2}/hr)_{P014}$ x (24 hr/day) x (7 day/wk) x (50 wk/yr) ÷ (2000 lb/ton) = 61.53 ton_{SO2}/yr

* The reason for the permittee's assumption of 50 weeks rather than a full year is unknown. When PTE was calculated two years earlier for PTI 15-883 (issued 6/16/1993), it was based on a full 8760 hr/yr of operation. Regardless of the reason, the 50-week assumption for PTI 15-1173 had the effect of a lower emission limit being set than otherwise would have been the case if PTE had been calculated based on the standard full year (8760 hr). Most importantly, the permittee accepted the lower limit.

The additional 61.53 ton/yr for P014 was added to the established annual emissions limit of 245 ton/yr established in Chapter 31 modification PTIs 15-248 and 15-290 issued 07/06/1995 for the three existing tunnel kilns (P004, P005 and P006) combined to give 306.53 ton/yr:

$(245\ ton_{SO2}/yr)_{P004,P005,P006} + (61.53\ ton_{SO2}/yr)_{P014} = 306.53\ ton_{SO2}/yr$

c. Emission Limitations:

Fluoride (F^-) emissions shall not exceed 6.5 lb/hr and 28.47 tons/yrfor emissions units P004, P005, P006 and P014 combined.

Applicable Compliance Method:

Compliance with the lbs/hr limit shall be demonstrated based upon the testing required in term f)(2) below.

The combined fluoride emissions limits for P004, P005, P006, and P014 were established as BAT in PTI 15-1173. The 6.5 lbs/hr limit was determined by modeling on 02/21/1995 and included in the application for PTI 15-1173.

The annual emissions limit was established by multiplying the maximum hourly limit by 8760 hr/yr, then dividing by 2000 lb/ton:

$(6.5\ lb_F/hr) \times (8760\ hr/yr) \div (2000\ lb/ton) = 28.47\ ton_F/yr$

Compliance with the annual limit may be assumed provided compliance with the hourly limit has been demonstrated based upon data from the most recent emission test that demonstrated that the emissions units were in compliance.

d. Emission Limitations:

Filterable particulate emissions (PE) shall not exceed 21.65lb/hr and 94.83 tons/yr for emissions units P004, P005, P006 and P014 combined.

Applicable Compliance Method:

Compliance with the lbs/hr limit shall be demonstrated based upon the testing required in term f)(2) below.

The 21.65 lb/hrlimit for PE was established as BAT in PTI 15-1173, issued 7/19/1995. PTI 15-1173 was the initial installation permit for P014, and the PTE for this new tunnel kiln was provided by the permittee in the permit application as 3.65 lb/hr based on stack testing conducted 03/30/1994. The additional 3.65 lb/hr for P014 was added to the combined PTE of 18.0 lb/hr established in Chapter 31 modification PTIs 15-248 and 15-290 issued 07/06/1995 for the three existing tunnel kilns (P004, P005 and P006) to give a total PTE of 21.65 lb/hr.

The annual emissions limit was established by multiplying the maximum hourly limit by 8760 hr/yr, then dividing by 2000 lb/ton:

$(21.65\ lb_{PE}/hr) \times (8760\ hr/yr) \div (2000\ lb/ton) = 94.83\ ton_{PE}/yr$

Compliance with the annual limit may be assumed provided compliance with the hourly limit has been demonstrated based upon data from the most recent emission test that demonstrated that the emissions units were in compliance.

e. Emission Limitations:

Nitrogen oxides (NO_x) emissions shall not exceed 16.06lb/hr and 70.34 tons/yr for emissions units P004, P005, P006 and P014 combined.

Applicable Compliance Method:

Compliance with the lbs/hr limit shall be demonstrated based upon the testing required in term f)(2) below.

The 16.06 lb/hrlimit for NOx was established as BAT in PTI 15-1173, issued 7/19/1995. PTI 15-1173 was the initial installation permit for P014, and the PTE for this new tunnel kiln was provided by the permittee in the permit application as 3.24 lb/hr based on stack testing conducted 11/17/1993. The additional 3.24 lb/hr for P014 was added to the combined PTE of 12.82 lb/hr established in Chapter 31 modification PTIs 15-248 and 15-290 issued 07/06/1995 for the three existing tunnel kilns (P004, P005 and P006) to give a total PTE of 16.06 lb/hr.

The annual emissions limit was established by multiplying the maximum hourly limit by 8760 hr/yr, then dividing by 2000 lb/ton:

$(16.06\ lb_{NOx}/hr) \times (8760\ hr/yr) \div (2000\ lb/ton) = 70.34\ ton_{NOx}/yr$

Compliance with the annual limit may be assumed provided compliance with the hourly limit has been demonstrated based upon data from the most recent emission test that demonstrated that the emissions units were in compliance.

f. Emission Limitation:

Visible particulate emissions from the common stack serving emissions units P004, P005, P006 and P014 shall not exceed 20 percent opacity, as a six-minute average, except as provided by rule.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the testing required in term f)(2) below. If requested, ongoing compliance with the stack visible particulate emissions limitation shall be determined in accordance with the procedure specified in OAC rule 3745-17-03(B)(1)(a), which states that "…'USEPA Method 9' shall be employed" (Method 9 of 40 CFR Part 60, Appendix A.)

g. Emission Limitation – for informational purposes only:

The emission limitation specified by OAC rule 3745-17-11, 26.14 lb_{PE}/hr, is less stringent than 21.65 lb_{PE}/hr, the BAT emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

The calculations shown below demonstrate how the emission limitation specified by OAC rule 3745-17-11 was calculated

Applicable Compliance Method:

The following equation from Table 1 in OAC rule 3745-17-11 would be used to establish the permit limit based on the maximum rate of feed material fired (i.e., the effective maximum process weight rate) of 15.88 ton/hrfor emissions units P004, P005, P006 and P014 combined:

$E_{PE} = (4.10)(P)^{0.67}$

where:

E_{PE} = allowable particulate emission rate in lb/hr

P = process weight rate in ton/hr

P = 3.97 ton/hr input for each EU P004, P005, P006 and P014

P_{TOTAL} = (4) x (3.97) = 15.88 ton/hr

$E_{PE} = (4.10)(15.88\text{ton/hr})^{0.67} = 26.14\ lb_{PE}/hr$

26.14 lb_{PE}/hr> 21.65 lb_{PE}/hr

h. Emission Limitations – for informational purposes only:

The emission limitation specified by OAC rule 3745-18-06(E)(1), 127.5 lb_{SO2}/hr, is less stringent than 76.65 lb_{SO2}/hr, the BAT emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

The calculations shown below demonstrate how the emission limitation specified by OAC rule 3745-18-06(E)(1) was calculated.

Applicable Compliance Methods:

3745-18-06(E)(1) - General emission limit provisions for Cuyahoga, Lake, Stark, Summit and Trumbull counties *"Except as otherwise indicated...in rules 3745-18-07 to 3745-18-94..."* (see 3745-18-82(A)(3) for Stark county emission limits):

$AER = 20\ P^{0.67}$

where,

AER = allowable emission rate in pounds of sulfur dioxide per hour; and

P = process weight rate in tons per hour.

P = (4) x (3.97) = 15.88 ton/hr input for P004, P005, P006 and P014 combined

$(20)(15.88)^{0.67} = 127.5\ lb_{SO2}/hr$

$127.5\ lb_{SO2}/hr > 76.65\ lb_{SO2}/hr$

Note: OAC rule 3745-18-06(A) exempts fuel burning equipment from OAC rules 3745-18-06(D), (F) and (G) and from rules 3745-18-07 to 3745-18-94 of the Administrative Code during any calendar day in which natural gas is the only fuel burned

[Authority for term: OAC rules 3745-31-05 and 3745-77-07(C)(1)and PTI P0109639]

(2) The permittee shall conduct, or have conducted, emission testing for emissions units P004, P005, P006 and P014 (tunnel kilns 1 – 4, respectively) in accordance with the following requirements:

a. The emission testing shall be conducted within 6 months after the Effective Date of this permit, and again within 6 months prior to the Expiration Date of this permit. If all four emissions units, P004, P005, P006 and P014 are inactive, or less than the minimum of two emissions units (as described in f.ii. below) are inactive due to production constraints during the period when testing is due, then testing shall be conducted within 90 days after commencing operation.

b. The emission testing shall be conducted to demonstrate compliance with the allowable hourly mass emission rates for SO_2, fluoride, filterable PE/PM and NOx

as specified in b)(1)a. above, and the visible particulate emissionslimitation specified in b)(1)b. above.

c. The following test methods shall be employed to demonstrate compliance with the visible particulate emissions limitation and the allowable hourly mass emission rates:

   i. for SO_2: Method 6 of 40 CFR Part 60, Appendix A;

   ii. for fluoride (total gaseous and particulate fluorides which do not include fluorocarbons): Method 13B of 40 CFR Part 60, Appendix A;

   iii. for filterable PE/PM: Method 5 of 40 CFR Part 60, Appendix A;

   iv. for NOx: Method 7 of 40 CFR Part 60, Appendix A; and

   v. for visible particulate emissions, in accordance with the procedure specified in OAC rule 3745-17-03(B)(1)(a): Method 9 of 40 CFR Part 60, Appendix A.

d. Concurrently with the emission testing, the permittee shall perform the procedures described in g)(1) below for the purpose of calculating a sulfur emission factor. The duration of the testing period associated with data collection required for the purpose of calculating the sulfur emission factor shall be three continuous hours.

e. Unless otherwise specified or approved by CCHD-APCD, the emission testing shall be conducted under one of the following two operating scenarios:

   i. while emissions units P004, P005, P006 and P014 are concurrently operating at or near their maximum capacities* for the entire three hours of the test period; or

   ii. if business conditions do not support the operation of all four emissions units (kilns) concurrently at or near their maximum capacities, the testingmay be conducted while operating two of the emissions units at or near their maximum capacities* for the entire three hours of the test period. Under this option, all emissions results shall be doubled as an acceptable substitute for results that would have been obtained under option i. above.

   The two kilns selected to operate under the second scenario shall be chosen such that each is supplied by a different dryer line. Tunnel dryer 1 (P007) supplies tunnel kilns 1 & 2 (P004 & P005), and tunnel dryer 2 (P008) supplies tunnel kilns 3 & 4 (P006 & P014). So either tunnel kiln 1 or 2 (P004 or P005), and either tunnel kiln 3 or 4 (P006 or P014) shall be operated under this scenario.

   * The test(s) shall be conducted under those representative conditions that challenge to the fullest extent possible a facility's ability to meet the applicable emissions limits and/or control requirements, unless otherwise specified or approved by CCHD-APCD. Although this generally consists of operating the emissions unit at its maximum material input/production rates and results in the

highest emission rate of the tested pollutant, there may be circumstances where a lower emissions loading is deemed the most challenging control scenario. Failure to test under these conditions is justification for not accepting the test results as a demonstration of compliance.

f. The following parameter, at minimum, shall be monitored and recorded during the emission testing: the process weight rate, in pounds per hour, defined as the total dry weight of the incoming (unfired) feed material for all emissions units operating during the test period.

g. Not later than 30 days prior to the proposed test date, the permittee shall submit an "Intent to Test" notification to CCHD-APCD. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, emission unit operating parameters, the time(s) and date(s) of the testing, and the person(s) who will be conducting the testing. Failure to submit such notification for review and approval prior to the testing may result in the CCHD-APCD's refusal to accept the results of the emissions testing.

h. Personnel from CCHD-APCD shall be permitted to witness the testing, examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions units and the testing procedures provide a valid characterization of the emissions from the emissions units and/or the performance of the control equipment.

i. A comprehensive written report on the results of the emissions testing, including the records and results for the sulfur emission factor determination (per g)(1) below), shall be signed by the person or persons responsible for the testing and submitted to CCHD-APCD within 30 days following completion of the testing. The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from CCHD-APCD.

[Authority for term: OAC rules 3745-31-05 and 3745-77-07(C)(1)and PTI P0109639]

g) Miscellaneous Requirements

(1) The following procedure shall be used to calculate a sulfur emission factor (EF), defined as the ratio of the amount of sulfur converted to SO_2 and emitted during firing to the amount of sulfur in the unfired feed material. (The numerical value of this ratio will always be less than 1.00, because not all of the sulfur in the feed material is converted to sulfur dioxide gas during the firing process.) The procedure described below involves the sampling and analysis of the tile before and after firing, and shall be performed during the emission testing required in f)(2) above.

a. The day before the emission testing, the permittee shall collect one piece of unfired tile from each kiln car that will be located in the firing section of each kiln during each hour of the next day's three-hour test period. For each kiln, the set of unfired samples for each hour of the scheduled test period shall be crushed and mixed together. In summary, for each kiln participating in the next day's emission testing, there shall be three separate mixed samples of unfired tile.

These samples, which will be used to determine the sulfur content of the unfired feed material (S_{FEED}), could be identified as follows:

(Kiln X, hr 1)$_{FEED}$ (Kiln Y, hr 1)$_{FEED}$ (Kiln Z, hr 1)$_{FEED}$ etc.
(Kiln X, hr 2)$_{FEED}$ (Kiln Y, hr 2)$_{FEED}$ (Kiln Z, hr 2)$_{FEED}$
(Kiln X, hr 3)$_{FEED}$ (Kiln Y, hr 3)$_{FEED}$ (Kiln Z, hr 3)$_{FEED}$

b. The mixed samples of unfired tile (one for each hour for each kiln that will participate in the emission testing) shall be analyzed by the permittee or its contractor for sulfur content as a mass fraction, in units of pounds sulfur per pound of the unfired material (or multiplied by 100 to give percent by weight), using a published method which is suitable for both unfired and fired tile materials.

c. For each hour of the three-hour test period, the sulfur content values obtained in b. above for the unfired feed material shall be averaged among the kilns that participated in the emission testing. The result will be a single value for each hour of the three-hour test period: (S_{FEED}, hr 1), (S_{FEED}, hr 2) and (S_{FEED}, hr 3).

d. After the three-hour test period, the permittee shall collect one piece of fired tile from each kiln car that was located in the firing section of each kiln during each hour of the three-hour test period. For each kiln, the set of fired samples from each hour of the test period shall be crushed and mixed together. In summary, for each kiln that participated in the emission testing, there shall be three separate mixed samples of fired tile. These samples, which will be used to determine the sulfur content of the fired material (S_{FIRED}), could be identified as follows:

(Kiln X, hr 1)$_{FIRED}$ (Kiln Y, hr 1)$_{FIRED}$ (Kiln Z, hr 1)$_{FIRED}$ etc.
(Kiln X, hr 2)$_{FIRED}$ (Kiln Y, hr 2)$_{FIRED}$ (Kiln Z, hr 2)$_{FIRED}$
(Kiln X, hr 3)$_{FIRED}$ (Kiln Y, hr 3)$_{FIRED}$ (Kiln Z, hr 3)$_{FIRED}$

e. The mixed samples of fired tile (one from each hour from each kiln that participated in the emission testing) shall be analyzed by the permittee or its contractor for sulfur content as a mass fraction, in units of pounds sulfur per pound of the fired material (or multiplied by 100 to give percent by weight), using a published method which is suitable for both unfired and fired tile materials.

f. For each hour of the three-hour test period, the sulfur content values obtained in e. above for the fired material shall be averaged among the kilns that participated in the emission testing. The result will be a single value for each hour of the three-hour test period: (S_{FIRED}, hr 1), (S_{FIRED}, hr 2) and (S_{FIRED}, hr 3).

g. The results of the analyses described above for the sulfur content in both the unfired and fired tiles shall be used to calculate a sulfur emission factor (EF_{HOURx}) for each hour of the three-hour test period:

$[(S_{FEED}, \text{hr } 1) - (S_{FIRED}, \text{hr } 1)] / (S_{FEED}, \text{hr } 1) = EF_{HOUR1}$
$[(S_{FEED}, \text{hr } 2) - (S_{FIRED}, \text{hr } 2)] / (S_{FEED}, \text{hr } 2) = EF_{HOUR2}$
$[(S_{FEED}, \text{hr } 3) - (S_{FIRED}, \text{hr } 3)] / (S_{FEED}, \text{hr } 3) = EF_{HOUR3}$

h. The sulfur emission factors calculated in g. above shall then be added together and divided by the 3 to obtain an average overall sulfur emission factor that shall be utilized to represent emissions units P004, P005, P006 and P014.

$(EF_{HOUR1} + EF_{HOUR2} + EF_{HOUR3}) / 3 = EF$

i. The overall sulfur emission factor (EF) calculated above shall be based upon the most recent emission testing. The change from the old sulfur emission factor to the new one shall take effect at the start of the quarter immediately following the quarter in which the emission testing took place and/or results received for the sulfur content tests performed on the unfired and fired tile samples.

j. The permittee shall maintain the records listed below as a summary of the preceding procedure conducted during the emission testing for the purpose of calculating the sulfur emission factor. These records shall be reported as part of the emissions testing report required in f)(2)h above.

i. the calculations from c. above performed to obtain the average sulfur content in the unfired feed material for each hour of the test period;

ii. the calculations from f. above performed to obtain the average sulfur content in the fired material for each hour of the test period;

iii. the calculations from g. above performed to obtain the average sulfur emission factor for each hour of the test period; and

iv. the average overall sulfur emission factor (EF) as calculated in h. above.

[Authority for term: OAC rules 3745-31-05 and 3745-77-07(C)(1)and PTI P0109639]

(2) The following equation was used to establish the operational restrictions in c)(2) and c(3) above for the allowable amounts of sulfur (pounds per week and pounds per quarter, respectively) in the feed materials used in emissions units P004, P005, P006 and P014 combined.

$S_{FEED} = (SO_2)_{STACK} \times (MW_S/MW_{SO2}) \div (EF)$

where:

S_{FEED} = allowable amount of sulfur in the feed material, in pounds per unit of time

$(SO_2)_{STACK}$ = permit limit for sulfur dioxide emissions, in pounds per unit of time

MW_S = molecular weight of sulfur (32 lb/lbmole)

MW_{SO2} = molecular weight of SO_2 (64 lb/lbmole)

Note: the stoichiometric ratio, (MW_S/MW_{SO2}), can be simplified as (32 lb_S / 64 lb_{SO2})

EF = sulfur emission factor (S_{STACK}/S_{FEED}), established according to the procedure described in g)(1) above. For reference, the value of the sulfur emission factor as of the final issue date of this permit is 0.76 $lb_{S\text{-}STACK}$ / $lb_{S\text{-}FEED}$. This value became effective on 1/1/2006, based upon the results of emission tests conducted 9/28/2005.

As further described in g)(1)(i) above, the value for the sulfur emission factor shall always be based upon the most recent emission testing, and shall be adjusted accordingly without requiring a modification to the Terms and Conditions of this permit.

Example: Using the weekly SO_2 emission limitation of 12,877 lb/wk and the current sulfur emission factor, the resulting value for the allowable pounds of sulfur per week in the feed material was calculated as follows:

$S_{FEED\ PER\ WEEK}$ = (12,877 lb_{SO2}/wk)$_{STACK}$ x (32 lb_S / 64 lb_{SO2}) ÷ (0.76 $lb_{S\text{-}STACK}$ / $lb_{S\text{-}FEED}$) = 8472 lb_S/wk

Example: Using the annual SO_2 emission limitation of 306.53 ton/yr and the current emission factor, the resulting value for the allowable pounds of sulfur per quarter in the feed material was calculated as follows:

$S_{FEED\ PER\ YEAR}$ = (306.53 ton_{SO2}/yr)$_{STACK}$ x (2000 lb/ton) x (32 lb_S / 64 lb_{SO2}) ÷ (0.76 $lb_{S\text{-}STACK}$ / $lb_{S\text{-}FEED}$) = 403,329 lb_S/yr

$S_{FEED\ PER\ QUARTER}$ = (403,329 lb_S/yr) ÷ (4 quarters/yr) = 100,832 lb_S/quarter

[Authority for term: OAC rules 3745-31-05 and 3745-77-07(C)(1)and PTI P0109639]