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FEDOOP Permit Revisions/Changes

Revision No.	Permit No.	Issue Date	Public Notice Date	Change Type	Change Scope	Description
Initial	29-06-F	5/15/2006	3/26/2006	Initial	Entire Permit	Initial Permit Issuance
R1	29-06-F	05/15/2006	03/26/2006	Admin	Entire Permit	Correct typographical errors
N/A	O-0079-16-F	xx/xx/2016	01/20/2016	Renewal	Entire Permit	Permit Renewal, incorporation of construction permit 4-06-C

Abbreviations and Acronyms

AP-42	- AP-42, <i>Compilation of Air Pollutant Emission Factors, published by U.S.EPA</i>
APCD	- Louisville Metro Air Pollution Control District
BAC	- Benchmark Ambient Concentration
BACT	- Best Available Control Technology
Btu	- British thermal unit
CEMS	- Continuous Emission Monitoring System
CFR	- Code of Federal Regulations
CO	- Carbon monoxide
District	- Louisville Metro Air Pollution Control District
EA	- Environmental Acceptability
gal	- U.S. fluid gallons
GHG	- Greenhouse Gas
HAP	- Hazardous Air Pollutant
HCl	- Hydrogen chloride
Hg	- Mercury
hr	- Hour
in.	- Inches
lbs	- Pounds
l	- Liter
LMAPCD	- Louisville Metro Air Pollution Control District
mmHg	- Millimeters of mercury column height
MM	- Million
NAICS	- North American Industry Classification System
NO _x	- Nitrogen oxides
PM	- Particulate Matter
PM ₁₀	- Particulate Matter less than 10 microns
PM _{2.5}	- Particulate Matter less than 2.5 microns
ppm	- parts per million
PSD	- Prevention of Significant Deterioration
psia	- Pounds per square inch absolute
QA	- Quality Assurance
RACT	- Reasonably Available Control Technology
SIC	- Standard Industrial Classification
SIP	- State Implementation Plan
SO ₂	- Sulfur dioxide
STAR	- Strategic Toxic Air Reduction
TAC	- Toxic Air Contaminant
UTM	- Universal Transverse Mercator
VOC	- Volatile Organic Compound
w.c.	- Water column
year	- Any period of twelve consecutive months, unless "calendar year" is specified
yr	- Year, or any 12 consecutive-month period, as determined by context

Preamble

This permit covers only the provisions of Kentucky Revised Statutes Chapter 77 Air Pollution Control, the regulations of the Louisville Metro Air Pollution Control District (District) and, where appropriate, certain federal regulations. The issuance of this permit does not exempt any owner or operator to whom it has been issued from prosecution on account of the emission or issuance of any air contaminant caused or permitted by such owner or operator in violation of any of the provisions of KRS 77 or District regulations. Any permit shall be considered invalid if timely payment of annual fees is not made. The permit contains general permit conditions and specific permit conditions. General conditions are applicable unless a more stringent requirement is specified elsewhere in the permit.

General Conditions

1. The owner or operator shall comply with all General Conditions herein and all terms and conditions in the referenced process/process equipment list.
2. All terms and conditions in this FEDOOP are enforceable by EPA, except those terms and conditions specified as District-only enforceable, and those which are not required pursuant to the Clean Air Act Amendments of 1990 (CAAA) or any of the Act's applicable requirements.
3. All application forms, reports, compliance certifications, and other relevant information submitted to the District shall be certified by a responsible official. If a change in the responsible official (RO) occurs during the term of this permit, or if an RO is added, the owner or operator shall provide written notification (Form AP-100A) to the District within 30 calendar days of such change or addition.
4. The owner or operator shall submit an annual compliance certification, signed by the responsible official, to the District, on or before April 15 of the year following the year for which the certification applies. This certification shall include completion of District Form 9440-O.
5. Periodic testing, instrumental monitoring, or non-instrumental monitoring, which may include record keeping, shall be performed to the extent necessary to yield reliable data for purposes of demonstrating continuing compliance with the terms and conditions of this permit.
6. The owner or operator shall retain all records required by the District or any applicable requirement, including all required monitoring data and supporting information, for a period of five years from the date of the monitoring, sampling, measurement, report, or application, unless a longer time period for record retention is required by the District or an applicable requirement. Records shall be retrievable within a reasonable time and made available to the District, Kentucky Division for Air Quality, or the EPA upon request.
7. The owner or operator shall provide written notification to the District, and receive approval, prior to making any changes to existing equipment or processes that would result in emissions of any regulated pollutant in excess of the allowable emissions specified in this permit.
8. This permit may be reissued, revised, reopened, or revoked pursuant to District Regulation 2.17. Repeated violations of permit conditions are sufficient cause for revocation of this permit. The filing of a request by the owner or operator for any reissuance, revision, revocation, termination, or a notification of planned changes in equipment or processes, or anticipated noncompliance shall not alter any permit requirement.
9. Except as otherwise specified or limited herein, the owner or operator shall not allow or cause the emissions to equal or exceed either 10 tons per year, or such lesser quantity as

the EPA has established by rule, of any one Hazardous Air Pollutant (HAP) or 25 tons per year of all HAPs combined. Fugitive HAP emissions shall be included in this limit. HAPs are listed in Section 112(b) of the CAAA and as amended in 40 CFR 63, Subpart C.

10. Except as otherwise specified or limited herein, the owner or operator shall not allow or cause the emissions to equal or exceed 100 tons per year of any regulated pollutant, including particulate matter, PM₁₀, PM_{2.5}, sulfur dioxide, carbon monoxide, nitrogen oxides, lead, hydrogen sulfide, gaseous fluorides, total fluorides, or Volatile Organic Compounds (VOC); any pollutant subject to any standard in District Regulation 7.02; any substance listed in sections 112(r), 602(a) and 602(b) of the CAAA; or any combination of greenhouse gasses whose combined global warming potential equals or exceeds 100,000 tons CO₂-equivalent, as defined in 40 CFR 98). Fugitive emissions shall be included in these limits for source categories listed in District Regulation 2.16.
11. Unless specified elsewhere in this permit, the owner or operator shall complete required monthly record keeping within 30 days following the end of each calendar month.
12. Unless specified elsewhere in this permit, the owner or operator shall submit annual reports demonstrating compliance with the emission limitations specified. The report shall contain monthly and consecutive 12-month totals for each pollutant that has a federally enforceable limitation on the potential to emit. All reports shall include the company name, plant ID number, and the beginning and ending date of the reporting period. The compliance reports shall clearly identify any deviation from a permit requirement or a declaration that there were no such deviations. All annual compliance reports shall include the statement "Based on information and belief formed after reasonable inquiry, I certify that the statements and information in this document are true, accurate, and complete" and the signature and title of a responsible official of the company. The report must be postmarked no later than March 1 of the year following the calendar year covered in the annual report.
13. The owner or operator shall comply with all applicable requirements of the following federally enforceable District Regulations:

Regulation	Title
1.01	General Application of Regulations and Standards
1.02	Definitions
1.03	Abbreviations and Acronyms
1.04	Performance Tests
1.05	Compliance with Emissions Standards and Maintenance Requirements
1.06	Source Self-Monitoring, Emissions Inventory Development and Reporting
1.07	Excess Emissions During Startups, Shutdowns, and Upset Conditions
1.08	Administrative Procedures
1.09	Prohibition of Air Pollution
1.10	Circumvention
1.11	Control of Open Burning

Regulation	Title
1.14	Control of Fugitive Particulate Emissions
2.01	General Application (Permit Requirements)
2.02	Air Pollution Regulation Requirements and Exemptions
2.03	Authorization to Construct or Operate; Demolition/Renovation Notices and Permit Requirements
2.07	Public Notification for Title V, PSD, and Offset Permits; SIP Revisions; and Use of Emission Reduction Credits
2.09	Causes for Permit Modification, Revocation, or Suspension
2.10	Stack Height Considerations
2.11	Air Quality Model Usage
2.17	Federally Enforceable District Origin Operating Permits
4.01	General Provisions for Emergency Episodes
4.02	Episode Criteria
4.03	General Abatement Requirements
4.07	Episode Reporting Requirements
6.01	General Provisions
6.02	Emission Monitoring for Existing Sources
7.01	General Provisions

14. The owner or operator shall comply with all applicable requirements of the following District-only enforceable regulations:

Regulation	Title
1.12	Control of Nuisances
1.13	Control of Objectionable Odors in the Ambient Air
2.08	Fees
5.00	Definitions
5.01	General Provisions
5.02	Adoption and Incorporation by Reference of National Emission Standards for Hazardous Air Pollutants
5.14	Hazardous Air Pollutants and Source Categories
5.20	Methodology for Determining Benchmark Ambient Concentration of a Toxic Air Contaminant
5.21	Environmental Acceptability for Toxic Air Contaminants
5.22	Procedures for Determining the Maximum Ambient Concentration of a Toxic Air Contaminant
5.23	Categories of Toxic Air Contaminants
7.02	Adoption of Federal New Source Performance Standards

15. The owner or operator shall submit emission inventory reports, as required by Regulation 1.06, if so notified by the District.
16. The owner or operator shall submit timely reports of abnormal conditions or operational

changes that may cause excess emissions, as required by Regulation 1.07.

17. Applications, reports, test data, monitoring data, compliance certifications, and any other document required by this permit shall be submitted to:

***Air Pollution Control District
Room 205
850 Barret Ave
Louisville, KY 40204-1745***

Emission Unit U1¹**U1 Description:**

Brick manufacturing process: Coal/natural gas-fired kilns.

U1 Applicable Regulations:

FEDERALLY ENFORCEABLE REGULATIONS		
Regulation	Title	Applicable Sections
1.14	Control of Fugitive Particulate Emissions	1 and 2
2.17	Federally Enforceable District Origin Operating Permits	All
7.08	Standards of Performance for New Process Operations	1 through 4
7.09	Standards of Performance for New Process Gas Streams	1, 2, 4 and 5

U1 Equipment:

Emission Point	Description	Applicable Regulation	Installation Date	Control Device (Control ID)
E1	One (1) tunnel kiln ² , make Harrop-Kiln, model 16-wide, rated capacity 14.7 ton/hr, designated as "Kiln 38A". Fuels: coal and natural gas.	7.08 and 7.09	1996	C1
E2	One (1) tunnel kiln, make Ceric-Kiln, model 16-wide, rated capacity 14.7 ton/hr, designated as "Kiln 38B". Fuels: coal and natural gas.	7.08 and 7.09	2004	C2

U1 Control Devices:

Control Device ID	Description Make/Model	Pollutant Controlled	Stack ID
C1	Dry lime scrubber and fabric filter (DLS/FF)	SO ₂ and PM	S1
C2	Dry lime scrubber and fabric filter (DLS/FF)	SO ₂ and PM	S2

¹ The District visited the source on March 03, 2015, and was informed that the source has not been operated since January, 2009. The source has a plan to re-operate the plant in the near future and would like to have a valid permit for such event.

² At the time of the March 03, 2015 visit, it was observed that the Stack S1's door was broken, this stack is an emission point of emission unit E1 (kiln 38A) connected to the control device C1 (DLS/FF control system). Therefore, prior to operation of the emission unit E1, the source is required to repair the stack's door and notify the District in writing of its repairing. The source shall not operate the emission unit E1 before receiving an approval from the District as required in [Specific Condition](#) S1.g.

U1 Specific Conditions

S1. Standards (Regulation 2.17, section 5.1)

a. HAP

- i. The owner or operator shall not allow or cause the *plant-wide* emissions of any individual HAP to equal or exceed 5 tons during any consecutive 12-month period³. (Regulation 2.17, section 5.1)
- ii. The owner or operator shall not allow or cause the *plant-wide* emissions of all HAPs combined to equal or exceed 12.5 tons during any consecutive 12-month period³. (Regulation 2.17, section 5.1)
- iii. For each kiln (E1 and E2), the owner or operator shall operate and maintain each Dry Lime Scrubber/Fabric Filter (DLS/FF) control device system (C1 for E1 and C2 for E2) at all times the process equipment is in operation, except as provided for in [Specific Condition](#) S1.a.iv. (Regulation 2.17, section 5.1)
- iv. The owner or operator may bypass DLS/FF control device system (C1 and/or C2) to perform routine maintenance on the control device for the respective kiln (E1 and E2) for no more than 4 percent of the operating hours (uptime) for each associated kiln as determined on a consecutive 12-month basis⁴. (Regulation 2.17, section 5.1)

b. SO₂

- i. The owner or operator shall not allow or cause the *plant-wide* SO₂ emissions to equal or exceed 25 tons during any consecutive 12-month period³. (Regulation 2.17, section 5.1)
- ii. Except as provided for in [Specific Condition](#) S1.a.iv, the owner or operator shall vent the emissions from each kiln (E1 and E2) to a DLS/FF control device system (C1 or C2), which is considered Best Available Control Technology (BACT) in combination with [Specific Condition](#) S1.b.iii^{5,6}. (Regulation 7.09, section 4)

³ The company is a major source for HAPs (HCl and HF), SO₂, PM₁₀, and CO. On 01/14/2016, the company requested the limits of the criteria pollutants < 25 tons/year, single HAP < 5 tons/year, and total HAPs < 12.5 tons/year to qualify as FEDOOP STAR Exempt as defined by Regulation 5.00, section 1.13.5.

⁴ As recognized by the U.S. EPA in 40 CFR 63 Subpart JJJJJ, *National Emission Standards for Hazardous Air Pollutants for Brick and Structural Clay Products Manufacturing*, kiln operators are allowed to bypass the kiln control device for routine maintenance of the kiln control device, not to exceed 4 percent of the operating hours.

⁵ The company used to be a Title V source (1997 – 2006) and underwent Prevention of Significant Deterioration (PSD) review for SO₂. Air Dispersion Modeling Analysis for SO₂ was submitted on March, 2004. The modeling result meets the requirement of Regulation 7.09, section 4.

- iii. The sulfur content of the coal combusted in the two kilns, E1 and E2, shall not exceed 1% by weight, which is considered BACT in combination with [Specific Condition S1](#).b.ii. (Regulation 7.09, section 4)

c. **CO**

The owner or operator shall not allow or cause the *plant-wide* CO emissions to equal or exceed 25 tons during any consecutive 12-month period³. (Regulation 2.17, section 5.1)

d. **NO_x**

For each kiln (E1 and E2), the owner or operator shall not cause to be discharged into the atmosphere any NO_x fumes in excess of 300 ppm by volume expressed as NO₂, or an invisible discharge⁷. (Regulation 7.08, section 4)

e. **PM/PM₁₀**

- i. The owner or operator shall not allow or cause the *plant-wide* PM/PM₁₀ emissions to equal or exceed 25 tons during any consecutive 12-month period³. (Regulation 2.17, section 5.1)
- ii. For Kiln 38A (E1), the owner or operator shall not allow or cause the PM emissions to exceed 19.24 lb/hr⁸. (Regulation 7.08, section 3.1.2)
- iii. For Kiln 38B (E2), the owner or operator shall not allow or cause the PM emissions to exceed 19.24 lb/hr⁹. (Regulation 7.08, section 3.1.2)
- iv. The owner or operator shall maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions at all times, including periods of startup, shutdown, and malfunction. (Regulation 2.17, section 5.1)

⁶ For Kiln 38B, the company submitted a BACT analysis for SO₂ on December, 2003. BACT was determined to be installation of a control system (Enhanced all Dry Lime Scrubber System with a baghouse) in combination with combustion of low sulfur coal (< 1% Sulfur).

⁷ Based on the stack tests performed on December 2001(for Kiln 38A) and December 2005 (for Kiln 38B), the potential uncontrolled NO_x emissions are 44.79 and 45.73 ppm for kilns 38A and 38B respectively, which is less than the standard of 300 ppm; therefore, no monitoring, record keeping, or reporting is required. The company is not a major source for NO_x.

⁸ Stack testing for Kiln 38A was conducted in September and December 2001 by Guardian System, Inc. The results showed that the PM emission was 0.43 lb/hr and the PM lb/hr standard cannot be exceeded controlled.

⁹ Stack testing for Kiln 38B was conducted on December 15, 2005 by Entec Service, Inc. The results showed that the PM emission was 0.24 lb/hr and the PM lb/hr standard cannot be exceeded controlled.

f. **Opacity**

For each kiln (E1 and E2), the owner or operator shall not allow or cause visible emissions to equal or exceed 20% opacity. (Regulation 7.08, section 3.1.1)

g. **Unit Operations**

Prior to operation of the emission unit E1 (kiln 38A), the owner or operator shall repair its associated stack S1's door and notify the District in writing of its repairing. The owner or operator shall not operate the emission unit E1 before receiving an approval from the District. (Regulation 2.17, section 5.1)

S2. **Monitoring and Record Keeping** (Regulation 2.17, section 5.2)

The owner or operator shall maintain the following records for a minimum of 5 years and make the records readily available to the District upon request.

a. **HAP**

- i. The owner or operator shall calculate and maintain monthly records that show the *plant-wide* emissions of single HAP and total HAPs during each calendar month and the rolling 12-month period (See [Comment 1](#)).
- ii. For E1 and E2, the owner or operator shall monitor and maintain monthly records that show the quantity (in tons) of fired product manufactured in each kiln (E1 and E2) during each calendar month and the rolling 12-month total tons of fired product manufactured in each kiln.
- iii. For each kiln DLS/FF control device system (C1 and C2), the owner or operator shall perform daily monitoring to verify that the fresh lime flow rate to the conditioning drum is 100 lb/hr or greater as determined on a 24-hour averaging period. The owner or operator shall maintain daily records of the results. The owner or operator shall manually record the fresh lime flow rate at least once per hour during any periods the DLS/FF data acquisition system is offline.
- iv. For C1 and C2, the owner or operator shall monitor the water flow rate to the conditioning drum to assure a minimum flow rate of 2 gallons per minute. The owner or operator shall maintain daily records of the results. The owner or operator shall manually record the water flow rate at least once per hour during any periods the DLS/FF data acquisition system is offline.
- v. For C1 and C2, the owner or operator shall monthly monitor and record the pressure drop across the fabric filter to ensure the pressure differential remains between 3 and 9 inches of H₂O. The owner or operator shall maintain monthly records of the results.

- vi. For C1 and C2, the owner or operator shall measure the pH of the scrubber solution at least once per day to ensure the scrubber solution is maintained at a pH of 7.0 or higher. The owner or operator shall check the pH meter's calibration on at least two points at least once per day. The owner or operator shall maintain daily records of the results.
 - vii. For C1 and C2, the owner or operator shall continuously monitor the temperature at the inlet and outlet of the scrubber solution. The temperature shall be maintained between 370 °F to 410 °F at the inlet and 270 °F to 320 °F at the outlet, unless other parameters are approved in writing by the District. The owner or operator shall maintain daily records of the temperature results and monthly records of the total hours of monitor downtime during each calendar month.
 - viii. For C1 and C2, the owner or operator shall monitor and maintain daily records that show all periods that a DLS/FF control device system (C1 and C2) was offline while the associated kiln was in operation. The records shall also include the following:
 - 1) A description of any maintenance performed on the control device while the control device was offline and kiln was in operation;
 - 2) The date and time when a control device was shutdown and restarted;
 - 3) Identification of the kiln that was operating and the number of hours that the kiln operated while the control device was offline.
 - ix. The owner or operator shall monitor and maintain monthly records showing the percent, as determined on a consecutive 12-month basis, that each kiln was in operation when the control device was offline.
- b. **SO₂**
- i. For E1 and E2, the owner or operator shall monitor and maintain daily records of the type and quantity of each fuel combusted in each kiln.
 - ii. For E1 and E2, the owner or operator shall calculate and maintain monthly records that show the SO₂ emissions during each calendar month and the rolling 12-month total SO₂ emissions for each kiln and the combined SO₂ emissions from both kilns (See [Comment 1](#)).
 - iii. The owner or operator shall maintain purchase records for each shipment of coal including a certification from the supplier that show the sulfur content of the coal meets the limit of 1% or less by weight.
 - iv. See [Specific Condition S2.a.ii.](#) through ix.

c. **CO**

- i. The owner or operator shall calculate and maintain monthly records that show the *plant-wide* CO emissions during each calendar month and the rolling 12-month total SO₂ emissions (See [Comment 1](#)).
- ii. See [Specific Condition S2.a.ii](#).

d. **NO_x**

There are no monitoring and record keeping requirements for this pollutant.

e. **PM/PM₁₀**

- i. The owner or operator shall calculate and maintain monthly records that show the *plant-wide* PM/PM₁₀ emissions during each calendar month and the rolling 12-month total *plant-wide* PM/PM₁₀ emissions (See [Comment 1](#)).
- ii. For kilns 38A and 38B (E1 and E2), the owner or operator shall comply with the following:
 - 1) The owner or operator shall perform a monthly visual inspection of the structural and mechanical integrity of the DLS/FF control system (C1 and C2) for sign of damage, air leakage, corrosion, or other equipment defects and repair or replace defective components as needed.
 - 2) The owner or operator shall maintain monthly records that identify all periods of control device bypassing or periods when a PM control device (C1 or C2) was offline while an associated process was in operation. The records shall include summary information on the cause or reason for each bypass event, the date bypass event occurred (including the start and stop time), calculations that show the PM emissions during each bypass or offline event, description of the corrective action taken for each bypass event, and measures implemented to prevent recurrence of the situation that resulted in bypassing the control device equipment.
 - 3) See [Specific Condition S2.a.ii](#) and v.

f. **Opacity**

- i. For each kiln (E1 and E2), the owner or operator shall conduct a daily one-minute visible emissions survey, during normal operation, of the emission points. No more than four emission points shall be observed simultaneously. The opacity surveys can be performed on the building exhaust points if the process is inside an enclosure.

- ii. At emission points where visible emissions are observed, the owner or operator shall initiate corrective action within eight hours of the initial observation. If the visible emissions persist, the owner or operator shall perform or cause to be performed a Method 9, in accordance with 40 CFR Part 60, Appendix A, within 24 hours of the initial observation.
- iii. The owner or operator shall maintain daily records of the results of all visible emissions surveys and tests. Records of the results of any visible emissions survey shall include the date of the survey, the name of the person conducting the survey, whether or not visible emissions were observed, and what if any corrective action was performed. If an emission point is not being operated during a given month, then no visible emission survey needs to be performed and a negative declaration shall be entered in the record.

S3. Reporting (Regulation 2.17, section 5.2)

The owner or operator shall submit semi-annual reports demonstrating compliance with the emission limitations specified in accordance with General Condition 12.

a. HAP

The owner or operator shall report the following information regarding HAP emissions:

- i. For any period of operating outside the established parameters in S2.a.iii. through vii., the date, the observed reading, corrective action taken to minimize the extent of the excursion, and measures implemented to prevent reoccurrence in the reporting period;
- ii. A description of control device (C1 and C2) maintenance performed while the control device was offline and the associated kiln (E1 and E2) was operating, including the following information:
 - 1) The date and time when the control device was shutdown and restarted;
 - 2) Identification of the kiln that was operating and the number of hours that the kiln operated while the control device was offline;
 - 3) The total amount of time that the kiln operated during each month of the consecutive 12-month period;
 - 4) The amount of time that each kiln operated while the control device was offline during each month of the consecutive 12-month period;
 - 5) The percent of kiln operating uptime during which the control device was offline; and

6) A description of any maintenance performed on the control device for all periods while the control device was offline and kiln was in operation.

iii. The total *plant-wide* calendar month and consecutive 12-month emissions of each single HAP and total HAPs for each month in the reporting period.

b. **SO₂**

The owner or operator shall report the following information regarding SO₂ emissions:

i. The total *plant-wide* calendar month and consecutive 12-month SO₂ emissions for each month in the reporting period; and

ii. The calendar month and consecutive 12-month SO₂ emissions for each month in the reporting period for each kiln 38A (E1) and E38 (E2).

c. **CO**

The owner or operator shall report the total *plant-wide* calendar month and consecutive 12-month CO emissions for each month in the reporting period.

d. **NO_x**

There are no compliance reporting requirements for this pollutant.

e. **PM/PM₁₀**

The owner or operator shall report the following information regarding PM/PM₁₀ emissions:

i. The total *plant-wide* calendar month and consecutive 12-month PM/PM₁₀ emissions for each month in the reporting period; and

ii. Identification of all periods of bypassing a PM control device including the date of the bypass event, the duration of time for each the bypass event (start and stop time), calculations showing the emissions of PM during each bypass event, description of the corrective action taken for each bypass event, and measures implemented to prevent recurrence of the situation that resulted in bypassing the PM control device.

f. Opacity

The owner or operator shall report the following information regarding opacity emissions:

- i. The date, time and results of each visible emissions survey conducted that resulted in visible emissions being observed. If no visible emissions were observed during the reporting period, the owner or operator may submit a negative declaration.
- ii. The date, time and results of each Method 9 test conducted. If there were no Method 9 tests performed during the reporting, the owner or operator may submit a negative declaration.
- iii. Description of any corrective action taken for each exceedance of the opacity standard.

S4. Testing (Regulation 2.17, Section 5.2)

The owner or operator shall retest control devices C1 and C2 within 180 days after startup of the source. The owner or operator shall use the most recent District accepted performance test results to demonstrate compliance with the emission limits and in the annual emission inventory reporting.

HCl/HF/SO₂/PM/PM₁₀/PM_{2.5}/NO_x/CO

- i. The owner or operator shall perform appropriate EPA Reference Method performance tests on the inlet and outlet of the control device for HCl, HF, SO₂, PM, PM₁₀, PM_{2.5}, NO_x, and CO. The test shall be performed at 90% or higher of maximum capacity, or allowable/permitted capacity, or at a level of capacity which results in the greatest emissions and is representative of the operations. Failure to perform the test, at maximum capacity, allowable/permitted capacity, or at a level of capacity which resulted in the greatest emissions, may necessitate a re-test or necessitate a revision of the allowable/permitted capacity of the process equipment depending upon the difference between the testing results and the limit.
- ii. The owner or operator shall submit written compliance test plans (protocol) for the control efficiency. They shall include the EPA test methods that will be used for HCl, HF, SO₂, PM, PM₁₀, PM_{2.5}, NO_x, and CO compliance testing, the process operating parameters that will be monitored during the performance test, and the control device performance indicators (e.g. pressure drop, minimum combustion chamber temperature) that will be monitored during the performance test. The compliance test plans shall be furnished to the District at least 30 days prior to the actual date of the performance test. Attached to the permit is a

Protocol Checklist for a Performance Test with the information to be submitted in the protocol.

- iii. The owner, operator, or representative of the tested facility shall obtain an audit sample, if commercially available, from an accredited audit sample provider (AASP) for each test method used for regulatory compliance purposes. No audit samples are required for the following test methods: Methods 3A and 3C of appendix A-3 of part 60, Methods 6C, 7E, 9, and 10 of appendix A-4 of part 60, Methods 18 and 19 of appendix A-6 of part 60, Methods 20 and 22 of appendix A-7 of part 60, Methods 30A and 30B of appendix A-8 of part 60, and Methods 303, 318, 320, and 321 of appendix A of part 63 of this chapter. If multiple sources at a single facility are tested during a compliance test event, only one audit sample is required for each method used during a compliance test. (40 CFR 60.8(g)(1))
- iv. The owner or operator shall provide the District at least 10 days prior notice of any performance test to afford the District the opportunity to have an observer present.
- v. The owner or operator shall furnish the District with a written report of the results of the performance test within 60 days following the actual date of completion of the performance test.

Comments

- For kilns 38A and 38B (E1 and E2), before retest all control devices as required in [Specific Condition S4](#), the following emission factors shall be used to derive actual emission rates for purposes of demonstrating ongoing compliance with the terms and conditions of this permit. However, the owner or operator shall retest all control devices to determine new source-specific emission factors by conducting stack tests of the kilns before and after the control device within the first 180 days after startup of the source (See [Specific Condition S4](#)). During periods of control device routine maintenance, malfunctions, or other periods when the control device is offline while the kiln is in operation, actual emission rates shall be determined.

Pollutant	lb/ton of Fired Product (pre-control)	lb/ton of Fired Product (post-control)	Source
HCl	0.17	0.00053	Stack test ¹⁰
HF	0.165	0.00014 for E1; 0.00003 for E2	Stack test ¹⁰
SO ₂	6.4	0.32 for E1; 0.144 for E2	Stack test ¹⁰
PM	0.93	0.033 for E1; 0.0182 for E2	Stack test ¹⁰
NO _x	0.71	0.71	Stack test ¹⁰
CO	Coal: 0.80 Natural Gas: 1.20	Coal: 0.80 Natural Gas: 1.20	AP-42 Table 11.3-5
VOC	0.024	0.024	AP-42 Table 11.3-5

¹⁰ Emission factors determined by stack tests performed on December 2001 (for Kiln 38A) and December 2005 (for Kiln 38B) are outdated and allowed to be used only during the time before the Company retests all control devices as required in [Specific Condition S4](#).

Emission Unit U2**U2 Description:**

- Shale grinding, ground shale intrusion, and cement black manufacturing processes.
- Coal grinding process and coal storage silo.

U2 Applicable Regulations:

FEDERALLY ENFORCEABLE REGULATIONS		
Regulation	Title	Applicable Sections
1.14	Control of Fugitive Particulate Emissions	1 and 2
2.17	Federally Enforceable District Origin Operating Permits	All
7.02	Adoption and Incorporation by Reference of Federal New Source Performance Standards	1 through 5
7.08	Standards of Performance for New Process Operations	1 through 4
40 CFR 60, Subpart OOO	Standards of Performance for Nonmetallic Mineral Processing Plants	60.670(a)(1), 60.670(e), 60.671, 60.672 (a), 60.672 (b), and 60.672 (e)

U2 Equipment:

Emission Point	Description	Applicable Regulation	Installation Date	Control Device (Control ID)
E3	One (1) shale grinding operation, rated capacity 120 ton/yr, consisting of: one (1) single roll crusher, one (1) hopper, one (1) hammer mill, eight (8) vibrating screens, and eight (8) conveyors	7.02, 7.08, and 40 CFR 60, Subpart OOO	1996	C3
E4	One (1) shale reclaim operation inside enclosed building for belt conveyor and storage bunker	7.02, 7.08, and 40 CFR 60, Subpart OOO	1996	N/A
E5	Millroom 38 operation consisting of: one (1) J. C. Steele pug mill, one (1) 36" feed conveyor, one (1) 36" waste conveyor, four (4) 24" conveyors, and one (1) 5' chain conveyor.	7.02, 7.08, and 40 CFR 60, Subpart OOO	1996	C5
E6	One (1) coal processing operation for grinding coal, total capacity 2.1 tons/hr consisting of: one (1) C.E. Raymond coal pulverizing unit, and one (1) 4' x 5' single-deck vibratory screen.	7.08	2002	C6
E7	One (1) coal storage bin with bin vent	7.08	2002	N/A

Emission Point	Description	Applicable Regulation	Installation Date	Control Device (Control ID)
E8	One (1) sand silo equipped with bin vent filter, capacity 20,000 lb/hr.	7.02, 7.08, and 40 CFR 60, Subpart OOO	1996	N/A
E9	One (1) cement block manufacturing operation consists of: Besser 100 ft ³ cement mixer, two (2) 100-ton aggregate hoppers, two (2) 36" belt feeders, two (2) 24" belt conveyors, one (1) 100-ton cement silo, one (1) cement screw conveyor, one (1) fly ash hopper, one (1) fly ash belt feeder, one (1) fly ash belt conveyor, one (1) 100-ton fly ash silo, and one (1) fly ash screw conveyor	7.02, 7.08, and 40 CFR 60, Subpart OOO	2004	C9
E10	One (1) VAC-U-MAX vacuum cleaning unit, model Monobloc 40, rated at 1,250 cfm; and one (1) hopper	7.08	2006	filters

U2 Control Devices:

Control Device ID	Description Make/Model	Pollutant Controlled	Stack ID
C3	One (1) baghouse, make Carter-day, model 376RF10	PM	S3
C5	One (1) Ultra Industries baghouse, model BB-81-100, capacity 20,000 acfm.	PM	S5
C6	One (1) Torit baghouse, model RFT 72, capacity 6,000 acfm.	PM	S6
C9	One (1) Flex-Kleen baghouse	PM	S9

U2 Specific Conditions

S1. Standards (Regulation 2.17, section 5.1)

a. PM/PM₁₀

- i. The owner or operator shall not allow or cause the *plant-wide* PM/PM₁₀ emissions to equal or exceed 25 tons during any consecutive 12-month period. (Regulation 2.17, section 5.1)
- ii. For E3-E8, and E10, the owner or operator shall not allow or cause the PM/PM₁₀ emissions to exceed the following emission standards: (Regulation 7.08, section 3.1.2)

Emission Point	Emission Process	Emission Standard
E3	Shale grinding system (in total capacity of 120 ton/hr)	37.24 lb/hr ¹¹
E4	Shale reclaim operation (capacity 120 ton/hr)	37.24 lb/hr ¹²
E5	Millroom 38 operation (capacity 120 ton/hr)	37.24 lb/hr ¹¹
E6	Coal processing operation (capacity 2.1 ton/hr)	5.68 lb/hr ¹¹
E7	Coal storage bin with bin vent (capacity 2.1 ton/hr)	5.68 lb/hr ¹³
E8	Sand Silo with bin vent filter (capacity 20,000 lb/hr)	14.97 lb/hr ¹³
E10	VAC-U-MAX vacuum cleaning unit (capacity 1250 cfm)	2.34 lb/hr ¹³

- iii. For the Cement Block Manufacturing Operation (E9), the owner or operator shall not allow or cause the PM/PM₁₀ emissions to exceed the following emission standards¹⁴. (Regulation 7.08, section 3.1.2)

¹¹ Using emission factors obtained from AP-42, Chapter 11.3 - *Brick and Structural Clay Product Manufacturing*, the PM lb/hr standard cannot be exceeded controlled.

¹² Using emission factors obtained from AP-42, Chapter 11.12 - *Concrete Batching* and Chapter 11.19.2 - *Crushed Stone Processing and Pulverized Mineral Processing*, the PM lb/hr standard cannot be exceeded uncontrolled.

¹³ The District performed a one-time compliance evaluation for PM on November 18, 2005, the PM lb/hr standard cannot be exceeded uncontrolled.

¹⁴ Using emission factors obtained from AP-42, Chapter 11.12 - *Concrete Batching*, the PM lb/hr standard cannot be exceeded uncontrolled. There are no monitoring, recordkeeping, or reporting requirements for purposes of demonstrating ongoing compliance with the hourly PM emission standards.

Equipment	Emission Standard
Besser 100 ft ³ cement mixer	6.17 lb/hr
Two (2) 100-ton aggregate hoppers, two (2) 36" belt feeders, two (2) 24" belt conveyors, one (1) 100-ton cement silo, and cement screw conveyor	5.52 lb/hr for each piece of equipment
One (1) fly ash hopper, one (1) fly ash belt feeder, one (1) fly ash belt conveyor, one (1) 100-ton fly ash silo, and one (1) fly ash screw conveyor	2.34 lb/hr for each piece of equipment

- iv. The owner or operator shall maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions at all times, including periods of startup, shutdown, and malfunction. (Regulation 2.17, section 5.1)

b. Opacity

- i. The owner or operator shall not allow or cause visible emissions to equal or exceed 20% opacity from Emission Units: E6, E7 and E10. (Regulation 7.08, section 3.1.1)
- ii. The owner or operator shall not allow or cause visible emissions from affected facilities with capture systems to exceed 7% opacity from Emission Points: E3, E4, E5, E8, and E9. (40 CFR 60.672 (a), this streamlined permit condition assures compliance with Regulation 7.08, section 3.1.1.)
- iii. The owner or operator shall not allow or cause fugitive emissions to exceed 10% opacity from affected facilities without capture systems and for fugitive emissions escaping capture systems. (40 CFR 60.672 (a) and (e))
- iv. The owner or operator shall not cause or permit the discharge of visible fugitive emissions beyond the lot line of the property on which the emissions originate. (Regulation 1.14, section 2.4)

S2. Monitoring and Record Keeping (Regulation 2.17, section 5.2)

The owner or operator shall maintain the following records for a minimum of 5 years and make the records readily available to the District upon request.

a. PM/PM₁₀

- i. The owner or operator shall calculate and maintain monthly records that show the *plant-wide* PM/PM₁₀ emissions (including fugitive emissions)

during each calendar month and the rolling 12-month total *plant-wide* PM/PM₁₀ emissions.

- ii. The owner or operator shall monthly calculate and record the PM/PM₁₀ emissions from Unpaved Roads, Storage Piles, and Truck Loading. (See [Comment 4](#))
- iii. The owner or operator shall monthly perform a visual inspection of the structural and mechanical integrity of each PM control device (C3, C5, and C6) for signs of damage, air leakage, corrosion, or other equipment defects, and repair and/or replace defective components as needed. The owner or operator shall maintain monthly records of the results.
- iv. For E3, E5, and E6, the owner or operator shall maintain daily records of any periods of time where the process was operating and the control device (C3, C5, and C6) was not operating. The records shall include:
 - 1) Date;
 - 2) Start time and stop time;
 - 3) Identification of the control device and process equipment;
 - 4) PM emissions for each hour during the bypass in lb/hr;
 - 5) Summary of the cause or reason for each bypass event;
 - 6) Corrective action taken to minimize the extent or duration of the bypass event; and
 - 7) Measures implemented to prevent reoccurrence of the situation that resulted in the bypass event.
- v. For E3, E5 and E6, the owner or operator shall monthly monitor and maintain the monthly records of the operation rate (tons/month) and hours of operation (hours/month).

b. Opacity

The owner or operator shall perform monitoring and maintain records for the following:

- i. The owner or operator shall conduct a monthly one-minute visible emissions survey, during normal operation, of the emission points. No more than four emission points shall be observed simultaneously. The opacity surveys can be performed on the building exhaust points if the process is inside an enclosure.
- ii. At emission points where visible emissions are observed, the owner or operator shall initiate corrective action within eight hours of the initial observation. If the visible emissions persist, the owner or operator shall

perform or cause to be performed a Method 9, in accordance with 40 CFR Part 60, Appendix A, within 24 hours of the initial observation.

- iii. The owner or operator shall maintain records, monthly, of the results of all visible emissions surveys and tests. Records of the results of any visible emissions survey shall include the date of the survey, the name of the person conducting the survey, whether or not visible emissions were observed, and what if any corrective action was performed. If an emission point is not being operated during a given month, then no visible emission survey needs to be performed and a negative declaration shall be entered in the record.

S3. Reporting (Regulation 2.17, section 5.2)

The owner or operator shall submit annual reports demonstrating compliance with the emission limitations specified in accordance with General Condition 12.

a. PM/PM₁₀

The owner or operator shall report the following information regarding PM/PM₁₀ emissions:

- i. The total *plant-wide* calendar month and consecutive 12-month PM/PM₁₀ emissions for each month in the reporting period; and
- ii. Identification of all periods of bypassing a PM control device including the date of the bypass event, the duration of time for each the bypass event (start and stop time), calculations showing the emissions of PM during each bypass event, description of the corrective action taken for each bypass event, and measures implemented to prevent recurrence of the situation that resulted in bypassing the PM control device.

b. Opacity

The owner or operator shall report the following information regarding opacity emissions:

- i. The date, time and results of each visible emissions survey conducted that resulted in visible emissions being observed. If no visible emissions were observed during the reporting period, the owner or operator may submit a negative declaration.
- ii. The date, time and results of each Method 9 test conducted. If there were no Method 9 tests performed during the reporting, the owner or operator may submit a negative declaration.

- iii. Description of any corrective action taken for each exceedance of the opacity standard.

Comments

- For E3-E8, PM/PM₁₀ emissions shall be calculated utilizing the following AP-42, unless more accurate District approved emission factors become available. Emission factor units are lb of PM/PM₁₀ per ton of fired bricks produced unless otherwise noted.

Emission Unit	Emission Factor	Source for Emission Factor
Shale Grinding and Screening (E3)	0.0062 (controlled EF for PM) 0.0032(controlled EF for PM ₁₀)	AP-42 Table 11.3-1
Shale Reclaimer (E4)	0.003 (uncontrolled EF for PM) 0.0011(uncontrolled EF for PM ₁₀)	AP-42 Table 11.19.2-2
Millroom 38 (E5)	0.0036(controlled EF for PM ₁₀)	AP-42 Table 11.3-1
Coal Processing (E6)	0.0062 (controlled EF for PM) 0.0032 (controlled EF for PM ₁₀)	AP-42 Table 11.3-1
Coal Storage Bin with bin vent (E7)	0.73 lb/ton throughput (uncontrolled EF for PM) 0.47 lb/ton throughput (uncontrolled EF for PM ₁₀)	AP-42 Table 11.12-2
Sand Silo (E8) equipped with bin vent filter	0.73 lb/ton throughput (uncontrolled EF for PM) 0.47 lb/ton throughput (uncontrolled EF for PM ₁₀)	AP-42 Table 11.12-2

- Emission Factors, for Emission Unit: E9, obtained from AP-42 Chapter 11.12 - *Concrete Batching* (Table 11.12-2)

Equipment	Maximum throughput (ton/hr)	Uncontrolled Emission Factor (lb PM/PM₁₀/ton)
Mixer	2.4	0.572 for PM 0.156 for PM ₁₀
Cement Hopper	2	0.0048 for PM 0.0028 for PM ₁₀
Cement Belt Feeder	2	0.0069 for PM 0.0033 for PM ₁₀
Cement Belt Conveyor	2	0.0069 for PM 0.0033 for PM ₁₀
Cement Silo	2	0.73 for PM 0.47 for PM ₁₀
Cement Screw Conveyor	2	0.0069 for PM 0.0033 for PM ₁₀
Flyash Hopper	0.4	0.0048 for PM 0.0028 for PM ₁₀
Flyash Belt Feeder	0.4	0.0069 for PM 0.0033 for PM ₁₀
Flyash Belt Conveyor	0.4	0.0069 for PM 0.0033 for PM ₁₀
Flyash Silo	0.4	3.14 for PM 1.1 for PM ₁₀
Flyash Screw Conveyor	0.4	0.0069 for PM 0.0033 for PM ₁₀

3. For E10, the PM/PM₁₀ emissions are calculated using the emission factors obtained from AP-42, Chapter 11.12-*Concrete Batching*. The following equations and emission factors, based on a 95% filter efficiency, are used for controlled PM emission calculations:

Total PM Emissions = Vacuum Emissions + Hopper Emissions

Vacuum Emissions:

$$= [(Material\ collected\ in\ the\ hopper)/95\%](100\% - 95\%)$$

Hopper Emissions:

$$= (0.0048\ lb\ PM/ton\ of\ material\ transferred)$$

$$= (0.0028\ lb\ PM_{10}/ton\ of\ the\ material\ transferred)$$

4. The following emission factors shall be used to calculate PM/PM₁₀ emissions from the fugitive sources: Unpaved Roads, Storage Piles, and Truck Loading, unless more accurate District approved emission factors become available.

- 1) For Unpaved Roads, the emission factor expressed in lb of PM/PM₁₀ per vehicle mile traveled (lb/VMT) shall be estimated using following equation:

$$E = k (s/12)^a (W/3)^b \quad \text{Equation (1a) AP-24 Chapter 13.2.2}$$

where, E = size-specific emission factor (lb/VMT)

s = surface material silt content (%)

W = mean vehicle weight (tons)

k = 4.9 (lb PM/VMT) and 1.5 (lb PM₁₀/VMT) (Table 13.2.2-2)

a = 0.7 for PM and 0.9 for PM₁₀ (Table 13.2.2-2)

b = 0.45 for PM and PM₁₀ (Table 13.2.2-2)

- 2) For Storage Piles, the emission factor expressed in lb of PM/PM₁₀ per ton of material transferred shall be estimated using the following equation:

$$E = k(0.0032) (U/5)^{1.3}/(M/2)^{1.4} \quad \text{Equation (1) AP-42 Chapter 13.2.4}$$

where, E = emission factor

k = particle size multiplier (dimensionless)

U = mean wind speed (mile per hour)

M = material moisture content (%)

- 3) For Truck Loading, the emission factor for uncontrolled emissions from truck loading, E = 0.0001 lb PM₁₀/ton, shall be used. (AP-42, Table 11.19.2-2, Crushed Stone Processing and Pulverized Mineral Processing)

Insignificant Activities

Equipment	Quantity	Regulation Basis
Brazing, soldering, or welding	3	Regulation 1.02, Appendix A
Emergency relief vents	4	Regulation 1.02, Appendix A
Portable diesel or gasoline tanks (< 250 gallons)	3	Regulation 1.02, Appendix A

- 1) Insignificant activities identified in District Regulation 1.02, Appendix A, may be subject to size or production rate disclosure requirements.
- 2) Insignificant activities identified in District Regulation 1.02, Appendix A shall comply with generally applicable requirements.
- 3) The owner or operator shall annually submit an updated list of insignificant activities that occurred during the preceding year, with the compliance certification due April 15th.
- 4) Emissions from Insignificant Activities shall be reported in conjunction with the reporting of annual emissions of the facility as required by the District.
- 5) The owner or operator may elect to monitor actual throughputs for each of the insignificant activities and calculate actual annual emissions, or use Potential to Emit (PTE) as the annual emissions for each piece of equipment.
- 6) The District has determined that no monitoring, record keeping, or reporting requirements apply to the insignificant activities listed, except for the equipment that has an applicable regulation and permitted under an insignificant activity (IA) unit.