

217/758-1705

CONSTRUCTION PERMIT/PSD APPROVAL
NSPS/NESHAP SOURCE

PERMITTEE

Mississippi Lime Company
Attn: Kimberly Bauman
16147 US Highway 61
Ste. Genevieve, Missouri 63127

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| Application No.: 08100063 | I.D. No.: 157863AAC |
| Applicant's Designation: | <u>Date Received:</u> October 27, 2008 |
| Subject: Lime Manufacturing Plant | |
| Date Issued: | |
| <u>Location:</u> 7849 Bluff Road, Prairie du Rocher, Randolph County, Illinois | |

Permit is hereby granted to the above-designated Permittee to CONSTRUCT emission source(s) and/or air pollution control equipment consisting of a lime manufacturing plant, including two rotary lime kilns with pre-heaters; limestone crushing, storage and handling; fuel storage and handling; lime hydration; lime storage, handling and loadout; and other ancillary operations, as described in the above referenced application. This Permit is subject to standard conditions attached hereto and the following condition(s).

In conjunction with this permit, approval is given with respect to the federal rules for Prevention of Significant Deterioration of Air Quality (PSD) for the above referenced project, as described in the application, in that the Illinois Environmental Protection Agency (Illinois EPA) finds that the application fulfills all applicable requirements of 40 CFR 52.21. This approval is issued pursuant to the federal Clean Air Act, as amended, 42 USC 7401 et seq., the federal rules promulgated thereunder at 40 CFR 52.21 for the PSD Program, and a Delegation of Authority agreement between the USEPA and the Illinois EPA for the administration of the PSD Program. This approval becomes effective in accordance with the provisions of 40 CFR 124.15 and may be appealed in accordance with the provisions of 40 CFR 124.19. This approval is also based upon and subject to the findings and conditions which follow. Any significant departure from terms expressed in the application would need to receive prior written authorization of the Illinois EPA.

If you have any questions on this permit, please contact Minesh Patel at 217/785-1705.

Raymond E. Pilapil
Acting Manager, Permit Section
Division of Air Pollution Control

Date Issued: _____

REP:CPR:MVP:psj

cc: Region 3

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FINDINGS

1. Mississippi Lime Company (Mississippi Lime) has requested a construction permit for a new lime manufacturing plant with two preheater rotary lime kilns. The preheaters on the kilns will improve the energy efficiency of the kilns and reduce emissions of pollutants, including carbon dioxide. The kilns would be equipped with a fabric filter for control of emissions of particulate matter (PM).
2. The proposed plant would be located in a portion of Randolph County that is currently designated attainment for all criteria pollutants.
- 3a.
 - i. This proposed plant has the potential to emit more than 100 tons per year of sulfur dioxide (SO₂), nitrogen oxides (NO_x), carbon monoxide (CO), particulate matter (PM) and particulate matter₁₀ (PM₁₀), as further described in Attachment 1. The proposed plant is subject to PSD review as a major source of SO₂, NO_x and CO, PM and PM₁₀ emissions.
 - ii. This proposed plant has the potential to emit more than 100,000 tons per year of greenhouse gases (GHG), as carbon dioxide equivalents (CO₂e), as addressed in Attachment 1. The proposed plant is subject to PSD review as a major source of GHG emissions.
- b. The plant also has the potential to emit significant amounts of particulate matter_{2.5} (PM_{2.5}) and is also subject to PSD review for PM_{2.5}.
- c. The potential emissions of the lime plant for other PSD pollutants would not be significant.
- d. This proposed plant has the potential to emit more than 10 tons per year of an individual hazardous air pollutant (HAP), i.e., hydrogen chloride (HCl). Accordingly, the proposed plant is a major new source for emissions of HAPs and a case-by-case determination of Maximum Achievable Control Technology (MACT) for HAP emissions is required by Section 112(g) of the Clean Air Act for the emission units at the plant whose emissions would not currently be subject to federal National Emission Standards for Hazardous Air Pollutants (NESHAP), as adopted by USEPA at 40 CFR Part 63.
- 4a. After reviewing the application submitted by Mississippi Lime, the Illinois EPA has determined that the application for a construction permit for the plant shows that the plant: (i) will comply with all applicable state emission standards, (ii) will comply with all applicable federal New Source Performance Standards (NSPS), (iii) will comply with all applicable federal NESHAP standards, and (iv) will utilize Best Available Control Technology (BACT) for emissions of SO₂, NO_x, CO, PM, PM₁₀, PM_{2.5} and GHG. (See the Control Technology Determinations in Section 2 of this permit for the determinations of BACT for different emission units.)

- b. For emission units that are not subject to NESHAP standards adopted by USEPA at 40 CFR Part 63, the determinations of BACT for those units also represent a case-by-case determination of MACT for the HAP emissions of those units.
- 5. The air quality analyses submitted by Mississippi Lime and reviewed by the Illinois EPA shows that the plant, as proposed, will not cause violations of the ambient air quality standards for PM₁₀, PM_{2.5}, SO₂, NO₂, and CO. The air quality analysis also shows compliance with the allowable PSD increments.
- 6. The Illinois EPA has determined that the application for a permit for the plant would comply with standards for permit issuance under applicable Board Regulations and the federal regulations.
- 7. A copy of the application, the Illinois EPA's project summary, and a draft of this permit were placed in a location in the vicinity of the project, and the public was given notice and opportunity to examine this material, to submit comments and to participate in a public hearing on this matter.

SECTION 1: PLANT-WIDE CONDITIONS FOR THE LIME PLANT

1.1 Annual Emission Limitations

- a. Emissions from the plant shall not exceed the limitations in Attachment 1. For purpose of determining compliance with these limitations, the procedures in the unit-specific conditions of this permit shall be followed unless other credible evidence provides a more accurate estimate of emissions.

1.2 Compliance With Emission Limitations

- a. In this permit, except as otherwise specified in a particular provision, the emission limitations for "particulate matter" or "PM" shall apply to particulate matter as would be measured by USEPA Reference Method 5, rather than to PM₁₀ or PM_{2.5}. The limitations for PM emissions also serve to limit emissions of PM₁₀ and PM_{2.5}, as measured by applicable USEPA methods for measurement of filterable emissions, since filterable PM₁₀ and filterable PM_{2.5} are subsets of PM.
- b.
 - i. Except as provided below or unless otherwise specified in a particular provision, compliance with annual limitations established by this permit shall be determined from a running total of 12 months of data, i.e., from the sum of the data for the current month and data for the preceding 11 months (12 month total).
 - ii. For the first year (12 months) of operation, compliance shall be determined for a cumulative total of monthly data, i.e. from the sum of the data for the current month and data for all preceding months.
- c. For purposes of this permit, GHG emissions of the lime kilns shall be determined using the applicable methodology for lime manufacturing in 40 CFR Part 98, *Mandatory Reporting of Greenhouse Gases and Emission Facts: Metrics for Expressing Greenhouse Gas Emissions: Carbon Equivalents and Carbon Dioxide Equivalents*, including 40 CFR 98.33, *Calculating GHG Emissions*, and 40 CFR 98 Subpart S, *Lime Manufacturing*.

1.3 State Emission Standards of General Applicability

- a. Emissions of PM from process emission units at the plant that are subject to 35 IAC 212.321 shall not exceed the applicable emission rate specified by 35 IAC 212.321(a) and (c).

Note: 35 IAC 212.321 provides that no person shall cause or allow the emission of PM into the atmosphere in any one hour period from a new process emission unit which, either alone or in combination with the emission of PM from all other similar new process emission at a source or premises, exceeds the allowable emission rates specified in 35 IAC 212.321(c).

- b. In addition to other applicable requirements, each emission unit at the lime plant shall comply with 35 IAC 212.123(a), which provides that no person shall cause or allow emissions of smoke or other particulate matter with an opacity greater than 30 percent, except as allowed by 35 IAC 212.123(b) and 212.124. Compliance with this limit shall be determined in accordance with 35 IAC 212.109, i.e., by 6-minute averages of opacity measurements in accordance with USEPA Reference Method 9.
- c. In addition to other applicable requirements, each emission unit at the plant shall comply with 35 IAC 212.301, which provides that no person shall cause or allow emissions of fugitive PM to be visible from any process, including any material handling or storage activity, when looking generally toward the zenith at a point beyond the property line of the source, except when the wind speed exceeds 25 miles per hour, as provided by 35 IAC 212.314.

1.4-1 Good Air Pollution Control Practices

The Permittee shall operate and maintain the emission units at the plant, including associated air pollution control measures and equipment, in a manner consistent with good air pollution control practice, as follows:

- a. At all times, including periods of startup, shutdown, malfunction or breakdown, operate as practicable to minimize emissions.
- b. Conduct routine inspections and perform appropriate maintenance and repairs to facilitate proper functioning of equipment and minimize or prevent malfunctions and breakdowns.
- c. Install, calibrate and maintain required monitoring devices and instrumentation in accordance with good monitoring practices, following the manufacturer's recommended operating and maintenance procedures or such other procedures as otherwise necessary to assure reliable operation of such devices.

1.4-2 Requirements for Ancillary Equipment

- a. All diesel engines at the plant are subject to the following requirements:
 - i. The engines shall be operated and maintained to comply with the New Source Performance Standards (NSPS) for Stationary Compression Ignition Internal Combustion Engines, 40 CFR 60 Subpart IIII, and related provisions of 40 CFR 60 Subpart A, General Provisions.
 - ii. The engines shall only be fired on ultra-low sulfur diesel or other ultra-low sulfur fuels.
 - iii. A. The engines shall be used as emergency engines, as defined at 35 IAC 211.1920. For this purpose, each

engine shall not be operated for more than 100 per calendar year to confirm availability for emergency operation.

B. The power output of each engine shall be no more than 500 horsepower.

iii. The Permittee shall keep records for each engine to demonstrate compliance with the above requirements.

b. All ancillary equipment at the plant, including diesel engines, shall be operated in accordance with good air pollution control practices to minimize emissions. (See also Condition 1.4-1.)

Note: These requirements constitute the determination of BACT For ancillary equipment, as required under the PSD rules.

1.5 Records for Required Monitoring Systems and Instrumentation

a. The Permittee shall keep records of the data measured by required monitoring systems and instrumentation. Unless otherwise provided in a particular condition of this permit, the following requirements shall apply to such recordkeeping:

i. For required monitoring systems, data shall be automatically recorded by a central data system, dedicated data logging system, chart recorder or other data recording device. If an electronic data logging system is used, the recorded data shall be the hourly average value of the particular parameter for each hour. During periods when the automatic recording device is out of service, data shall be recorded at least once per shift for periods when the associated emission unit(s) is in service.

ii. For required instrumentation, the measured data shall be recorded manually at least once per day, unless otherwise specified, with data and time both recorded, for periods when the associated emission unit(s) are in service, provided however that if data from an instrument is recorded automatically, the above provisions for recording of data from monitoring systems shall apply.

b. The Permittee shall keep records for the operation, calibration maintenance and repair of required monitoring systems and instrumentation.

1.6 General Recordkeeping Requirements

a. The Permittee shall keep records for all opacity measurements made in accordance with USEPA Method 9 for emission units at the lime plant that it conducts or that are conducted on its behalf by individuals who are qualified to make such observations. For each occasion on which such measurements are made, these records shall include the formal report for the

measurements if conducted pursuant to this permit or a request from the Illinois EPA, or otherwise the identity of the observer, a description of the measurements that were made, the operating condition of the relevant emission units or operations, the observed opacity, and copies of the raw data sheets for the measurements.

- b. The Permittee shall keep records for all observations for visible opacity measurements made in accordance with USEPA Method 22 for emission units at the plant that it conducts or that are conducted on its behest. For each occasion on which such observations are made, these records shall include the written report for the observations if conducted pursuant to this permit or otherwise the identity of the observer, a description of the observations that were made, the operating condition of the relevant emission units or operations, and whether visible emissions were observed.
- c. The Permittee shall maintain a log or other records that summarize public inquiries or complaints related to emissions, including nuisance dust or odors, and specific actions taken by the Permittee in response to such inquiries or complaints.

1.7 Retention and Availability of Required Records

- a. The Permittee shall retain all records and logs required by this permit for at least five years from the date of entry (unless a longer retention period is specified by a particular provision, keep the records at a location at the plant that is readily accessible to the Illinois EPA and USEPA, and make records available for inspection and copying by the Illinois EPA or USEPA upon request.
- b. The Permittee shall retrieve and print on paper during normal plant office hours any records retained in an electronic format (e.g., computer) in response to an Illinois EPA or USEPA request for records during the course of a plant inspection.

1.8 Plant-Wide Reporting

- a. The Permittee shall submit Semi-Annual Compliance Reports as specified in the unit-specific conditions of this permit and Condition 3.4(b).
- b. The Permittee shall submit an Annual Emission Report in accordance with 35 IAC Part 254.
- c.
 - i. The Permittee shall notify the Illinois EPA within 30 days of any deviation from the annual emission limitations set for the plant in Condition 1.1. Any such notification shall include the information specified in Condition 3.4.
 - ii. Notwithstanding the above or provisions in the Unit Specific Conditions of this permit for reporting

deviations, if deviation will occur from required maintenance, repair or other activity that can be scheduled in advance, the Permittee shall also notify the Illinois EPA prior to undertaking such activity, if it is feasible to do so. Such notification shall be submitted at least 5 days in advance unless the activity is scheduled less than 5 days in advance. Such notification shall be followed by such other notification or reporting as required for the deviations.

1.9 Submission of Reports

- a. Any required reports and notifications shall be sent to the Illinois EPA at the following address unless otherwise indicated:

Illinois Environmental Protection Agency
Division of Air Pollution Control
Enforcement Compliance Section (#40)
P.O. Box 19276
Springfield, Illinois 62794-9276

Telephone: 217/782-5811 Fax: 217/524-4710

- b. A copy of all required reports and notifications, except the Annual Emission Report required by 35 IAC Part 254, shall also be sent to the Illinois EPA at the following address:

Illinois Environmental Protection Agency
Division of Air Pollution Control
2009 Mall Street
Collinsville, Illinois 62234

Telephone: 618/346-5120

- c. A copy of required reports and notifications concerning emission testing and initial installation and certification of continuous emission monitoring systems shall also be sent directly to the Illinois EPA's Source Monitoring Unit at the following address:

Illinois Environmental Protection Agency
Division of Air Pollution Control
Source Monitoring Unit
9511 West Harrison
Des Plaines, Illinois 60016

1.10 Authorization to Operate

- a. The lime plant may be operated pursuant to this construction permit for a period of one year from initial startup of operation of a kiln, during which period equipment shakedown and required emission testing shall be conducted. If this period is insufficient for equipment shakedown and emissions testing, the Illinois EPA may extend this initial operating

period for up to 12 months pursuant to a written request from the Permittee.

- b. Upon successful completion of the initial emissions testing required for the lime plant by Conditions 2.1.7(a)(i), the Permittee may continue to operate the plant pursuant to this construction permit until the Illinois EPA takes final action on the Permittee's request for an operating permit, provided that the Permittee has submitted a timely and complete CAAPP permit application for the plant within 12 months of initial startup of operation of the plant, as provided by Section 39.5(5)(x) of the Environmental Protection Act.
- c. These conditions supersede Standard Condition 6.

1.11 Effect of Permit

- a. This permit does not relieve the Permittee of the responsibility to comply with all local, state and federal regulations that are part of the applicable Illinois' State Implementation Plan, as well as all other applicable federal, state and local requirements.
- b. In particular this permit does not excuse the Permittee from the obligation to undertake further actions at the plant as may be needed to eliminate air pollution, including nuisance due to dust or odors, such as altering process operating conditions for the kiln or raising the height of the kiln stack.

SECTION 2.0: UNIT-SPECIFIC CONDITIONS

2.1 Unit-Specific Conditions for the Lime Kilns

2.1.1 Description

The plant will produce lime by “calcination” or high-temperature roasting of crushed limestone in rotary kilns. A rotary kiln is a long, cylindrical, horizontal furnace, lined with refractory, through which the limestone and combustion gases pass in opposite directions, in counter-current flow. The kiln is slightly inclined, with stone feed going in at the higher end and lime product coming out at the lower end, where the burner is located. The heating of the limestone is facilitated by rotation of the kiln about its horizontal axis.

Each kiln will be equipped with a preheater at the exhaust end of the kiln, before the add-on air pollution control. The preheater would heat the stone feed that will go into the kiln using the thermal energy contained in the hot flue gas from the kiln. The use of preheaters will lower the amount of fuel that is needed to make lime, in Btu per ton, increasing the energy or fuel efficiency of the kilns.

The emissions of the kilns are controlled by a combination of design, work practices and add-on emission control equipment. Emissions of NO_x, CO and VOM are controlled by the design of the kilns and low excess air and good combustion practices. PM emissions are controlled by add-on baghouses or fabric filters. SO₂ emissions are controlled by the natural ability of limestone and lime dust to absorb SO₂, with SO₂ then being removed from the flue gas in the dust collected by the fabric filters.

2.1.2 List of Emission Units

| Emission Unit | Description | Control Equipment |
|---------------|--------------------------|-------------------|
| Lime Kilns | Two Preheater Lime Kilns | Fabric Filters |

2.1.3-1 Applicability Provisions

- a. The “affected kilns” for the purpose of these unit-specific conditions are the kilns described in Conditions 2.1.1 and 2.1.2.

2.1.3-2 Control Technology Determination

- a. The emissions of the affected kilns shall be minimized and controlled by the following:
 - i. Use of preheaters or other similar heat recovery devices, selection of refractory and implementation of a kiln seal management program to improve fuel efficiency and reduce emissions of GHG.
 - ii. Low excess air to minimize formation of NO_x.

- iii. Good combustion practices to minimize formation of CO.
 - iv. The natural absorptive capacity of lime kiln dust for SO₂.
 - v. Fabric filtration (baghouses) to control PM, PM₁₀ and PM_{2.5}.
- b. i. The emissions from each affected kiln, expressed in terms of pounds per ton of lime from the kiln, shall not exceed the following limits. For the purpose of determining compliance with these limits, the ratio of stone feed to the kiln to lime output shall be no less than 2 to 1.
- A. PM (filterable only): 0.14 lbs/ton, 3-hour average.
 - B. PM₁₀ (total): 0.18 lbs/ton, 3-hour average.
 - C. PM_{2.5} (total): 0.105 lbs/ton, 3-hour average.
 - D. SO₂: 0.50 lbs/ton, 30-day rolling average.
 - E. NO_x: 3.5 lbs/ton, 30-day rolling average.
 - F. CO: 2.5 lbs/ton, daily (24-hour) average.*
- * If continuous emissions monitoring is not conducted, as addressed by Condition 2.1.8-1(e), compliance shall be determined based on a 3-hour average.
- ii. The limits in Condition 2.1.3-2(b)(i) shall not apply to an affected kiln during periods when the kiln is on hot standby with no stone feed to the kiln or the kiln is operating at less than 30 percent of capacity, provided, however, that the short-term emission limits in Condition 2.1.6(a) shall continue to apply during these periods and serve to constitute Best Available Control Technology.
- iii. The GHG emissions from each affected kiln, expressed in terms of pounds of CO₂e per ton of lime from the kiln, on a 12 month rolling average, shall not exceed:
- A. 2,744 pounds per ton of lime produced, or
 - B. A lower limit, as low as 2,630 pounds per ton of lime produced, if established pursuant to Condition 2.1.11, which provides for a further evaluation of the GHG emissions of the affected kilns considering their actual performance.
- c. i. The affected kilns and associated emission control systems shall be operated in conformance with good air pollution control practices to minimize emissions, as further addressed by Condition 2.1.5(a).

- ii. The auxiliary fuel for startup of the kilns before beginning firing of solid fuel shall be ultra-low sulfur distillate fuel oil with a specification for maximum sulfur content of 15 ppm by weight or other ultra-low sulfur fuels.
- iii. Upon occurrence of a malfunction or breakdown of an affected kiln that will result in an exceedance of an applicable limit in Condition 2.1.3-2(b), the Permittee shall, as soon as practicable, reduce the operating rate of the kiln, switch to firing of auxiliary fuel, begin the shutdown of the kiln or take other corrective action to end the exceedance. Consistent with the above, if the Permittee has maintained and operated the kiln and air pollution control equipment so that malfunctions and breakdowns causing exceedances are infrequent, sudden, not caused by poor maintenance or careless operation, and in general are not reasonably preventable, the Permittee shall begin corrective actions within two hours (120 minutes) of a malfunction that will result in an exceedance.

2.1.3-3 Applicability of Federal Emission Standards

- a.
 - i. The affected kilns are subject to the NESHAP for Lime Manufacturing Plants, 40 CFR 63, Subpart AAAAA (the Lime Plant NESHAP), and related provisions in 40 CFR 63, Subpart A, General Provisions.
 - ii. Pursuant to the Lime Plant NESHAP, the particulate matter emissions of each affected kiln shall not exceed 0.10 pounds per tons of stone feed.
- b.
 - i. The affected kilns are subject to the federal New Source Performance Standards (NSPS) for Lime Manufacturing Plants, 40 CFR 60, Subpart HH (the Lime Plant NSPS), and related provisions in 40 CFR 60, Subpart A, General Provisions. The Illinois EPA administers NSPS in Illinois on behalf of the United States EPA under a delegation agreement.
 - ii. Pursuant to the Lime Plant NSPS, the particulate matter emissions of the affected kilns, which are controlled by a fabric filter, shall each not exceed 15 percent opacity and 0.30 kilogram per megagram (0.60 lb/ton) of stone feed, as would be measured by USEPA Method 5, except during startup, shutdown and malfunction, as defined by 40 CFR 60.2, as provided by 40 CFR 60.8(c) and 60.342.
- c. At all times, the Permittee shall also maintain and operate the affected kilns, including associated air pollution control equipment, in a manner consistent with good air pollution control practice for minimizing emissions, as required by the NSPS, 40 CFR 60.11(d), and the NESHAP, 40 CFR 63.6(e)(1)(i).

2.1.3-4 Applicable State Emission Standards

- a. The PM emissions of each affected kiln shall comply with 35 IAC 212.321. (See also Condition 1.3(a).)
- b. The opacity of PM emissions from each affected kiln shall comply with 35 IAC 212.123(a). (See also Condition 1.3(b).)

Note: Notwithstanding Condition 2.1.3-4(a) or (b), in the CAAPP Permit for the source, the Permittee may be authorized, subject to appropriate restrictions, to start up the affected kilns or continue operation of the kilns in violation of state emission standard(s) pursuant to 35 IAC 201.262 if the Permittee demonstrates that such emissions during startup have and will be minimized and that such continued operation during malfunction or breakdown is necessary to prevent injury to persons or severe damage to equipment.

2.1.3-5 Nonapplicability Provisions

- a. The affected kilns are not subject to the SO₂ standard of 35 IAC 214.301 pursuant to 35 IAC 214.402, which excludes lime kilns from all SO₂ emission standards in 35 IAC Part 214.

2.1.4 Operational Limits

- a. The total lime production of the affected kilns shall not exceed 2,400 tons/day, monthly average.
- b. The solid fuel usage by the affected kilns shall not exceed 263,000 tons/year.

2.1.5 Operational Requirements

- a. The Permittee shall operate the affected kilns and associated emission control equipment in accordance with good air pollution control practices to minimize emissions, including the following:
 - i. Operation in accordance with detailed written operating procedures, as it is safe to do so, that at a minimum address startup (including so called "cold startups" and "hot startups" when the operation of the kiln is only temporarily interrupted), normal operation, and shutdown and malfunction events, establish target ranges for relevant operating parameters, and provide for review of these parameters during startup, shutdown and malfunction or breakdown as necessary to make adjustments to reduce or eliminate any excess emissions.
 - ii. With respect to startup, performance of an appropriate operating review of the operational condition of the kiln prior to initiating startup of the kiln and firing of auxiliary fuel to "preheat" the kiln to the operating temperature of the control equipment prior to initiating

firing of solid fuel, maintaining opacity of the kiln during this preheat period at a level that is indicative of good combustion for auxiliary fuel, except for the initial 12 minute period following ignition of auxiliary fuel.

- iii. With respect to malfunction and breakdown, include planning for likely events with specific programs of corrective actions; provide that, upon occurrence of a malfunction that will result in an exceedance of a limit or requirement in Condition 2.1.3-2, 2.1.3-3, 2.1.3-4 or 2.1.6, appropriate corrective actions are implemented as soon as practicable (e.g., repair of the affected equipment, a reduction in the operating rate of the kiln, or removal of the kiln from service) so that excess emissions are minimized and the exceedance expeditiously end; and provide for timely shutdown and overhaul of the kiln upon occurrence of chronic malfunctions that result in excess emissions.
- iv. Pursuant to 40 CFR 63.7100(e), the Permittee shall develop and implement a written startup, shutdown and malfunction plan (SSM Plan) in accordance with 40 CFR 63.6(e)(3).
- b. Pursuant to the NESHAP, the Permittee shall maintain and operate each affected kiln in accordance with 40 CFR 63.7090(b), Item 1 of Table 2 of the Lime Plant NESHAP, and either Item 2 or 4 of Table 5 of the Lime Plant NESHAP.
- c. The Permittee shall maintain the affected kilns and associated air pollution control systems in accordance with good air pollution control practice to assure proper functioning of equipment and minimize malfunctions, including performing maintenance in accordance with written procedures developed for this purpose. The procedures may rely upon the manufacturer's instructions for maintenance of equipment, provided that a copy of those instructions is attached to the procedures. These procedures may also be combined with the required operating procedures for the kiln.
- d. The Permittee shall review its operating and maintenance procedures as required above on a regular basis and revise them as needed consistent with good air pollution control practice based on actual operating experience and equipment performance.
 - i. This review shall occur at least annually if not otherwise initiated by occurrence of a startup, shakedown, or malfunction event that is not adequately addressed by the existing plans.
 - ii. This review shall also be performed if, following the shakedown period allowed by Condition 1.10, the kiln experiences chronic malfunctions that result in excess

emissions or a specific request by the Illinois EPA for such review.

Note: The Illinois EPA may enhance these requirements through action in a CAAPP permit for the plant based on the actual operating experience with the affected kilns.

2.1.6 Emission Limitations

- a. The emissions of the affected kilns shall not exceed the following limits.

| Pollutant | Each Kiln | | | Combined |
|---------------------------------------|-------------------|----------------|----------------------------|----------------------------|
| | Short-Term Limits | | Annual Limits (Tons/Yr) | Annual Limits (Tons/Yr) |
| | Rate (Lbs/Hr) | Averaging Time | | |
| PM/PM ₁₀ (filterable only) | 7.1 | 3-hour | 31.0 | 62.0 |
| PM ₁₀ (total) | 8.8 | 3-hour | 42.2 | 84.5 |
| PM _{2.5} (total) | 5.24 | 3-hour | 22.95 | 45.9 |
| SO ₂ | 40.0 | 1-hour | 109.5 | 219 |
| | 32.3 | 3-hour | | |
| NO _x | 175.0 | 1-hour | 766.5 | 1,533 |
| CO | 125.0 | daily, 24-hour | 547.5 | 1,095 |
| VOM | 2.51 | 3-hour | 11.0 | 22.0 |
| Sulfuric Acid Mist | 0.68 | 3-hour | 3.0 | 6.0 |
| Lead | 0.000010 | 3-hour | 0.000040 | 0.000080 |
| Hydrogen Chloride | 4.69 | 3-hour | 20.5 | 41.0 |

- b. Emissions of GHG from the affected kilns shall not exceed 1,201,842 tons/year, as CO₂e.

2.1.7 Emissions Testing Requirements

The Permittee shall have testing of the emissions of the affected kilns conducted as follows:

- a. The timing and scope of these tests shall be as follows:
- i. A. Pursuant to the NSPS and NESHAP, 40 CFR 60.344 and 63.7112, within 180 days of the initial startup of each affected kiln, the Permittee shall have testing conducted for the kiln's emissions of PM.
 - B. Within one year of the initial startup of each kiln, the Permittee shall also have testing conducted for the kiln's emissions of PM₁₀, PM_{2.5}, VOM, sulfuric acid, methane, nitrous oxide and metals.
 - ii. Pursuant to the NESHAP, 40 CFR 63.7111, within five years following the initial test for PM emissions on each affected kiln and within five years following each subsequent test thereafter, the Permittee shall have tests conducted for PM emissions in accordance with 40 CFR 63.7112.

- iii. Additional testing of emissions shall be conducted within 90 days of a written request from the Illinois EPA for pollutants as specified by the request, including emissions of CO if continuous emissions monitoring is not required for CO.
- b. Testing shall generally be conducted in accordance with the procedures and method specified in Condition 3.1 using USEPA test methods and procedures unless another method is approved by the Illinois EPA. In addition:
 - i. Testing for emissions of PM shall be conducted in accordance with the NSPS, 40 CFR 60.344, and NESHAP, 40 CFR 63.7110 through 63.7114.
 - ii. Testing for emissions of hydrogen chloride shall be conducted in accordance with relevant provisions of the NESHAP, 40 CFR 63.7142.
- c. The Permittee shall submit a test plan to the Illinois EPA for this testing in accordance with Condition 3.1(d) and notify the Illinois EPA of the date of emissions testing in accordance with Condition 3.1(e).
- d. The Permittee shall submit final reports for this testing to the Illinois EPA in accordance with Condition 3.1(f). In addition to other required information, these reports shall also include:
 - i. The following information for the operating conditions during testing:
 - A. Ash, sulfur, and heat content of the solid fuel being fired, based on representative sampling of fuel during the period of testing.
 - B. The amounts of stone and solid fuel fed to the kiln, in tons/hour.
 - C. The amounts of lime produced, in tons/hour.
 - D. Kiln operating parameters, i.e., operating temperature and oxygen content in the flue gas leaving the kiln.
 - E. Fabric filter operating parameters, e.g., pressure drop and operating temperature, and operating information, e.g., frequency of bag cleaning with trigger for cleaning.
 - ii. Emission factors for the kiln, calculated using the average test results in terms of pounds per ton of stone feed and pounds per ton of lime product.

- iii. Opacity of the emissions from the kiln, as determined by the continuous opacity monitor.

2.1.8-1 Emissions Monitoring Requirements

- a. The Permittee shall install, calibrate, maintain and operate continuous emissions monitoring systems (CEMS) on each affected kiln for SO₂, NO_x, CO and CO₂ emissions rates. These systems shall be operated during all periods of operation of a kiln except for continuous monitoring system breakdowns and repairs. Data is to be recorded during calibration checks, and zero and span adjustments.
 - i. The monitoring systems for concentrations of SO₂, NO_x and CO shall be operated in accordance with 40 CFR 60, Appendix B, Performance Specifications 2 (SO₂ and NO_x) and 4 (CO) and Appendix F.
 - ii. The monitoring systems for CO₂ concentrations shall be operated in accordance with applicable requirements of the Tier 4 Calculation Methodology in 40 CFR 98, including 40 CFR 98.33(a)(4) and 98.34(c) (which require operation in accordance with 40 CFR 60, Appendix B, Performance Specifications 3).
 - iii. The monitoring systems for exhaust flow rates shall be operated in accordance with 40 CFR 60, Appendix B, Performance Specifications 6 and Appendix F. (See also 40 CFR 98.34(c)(1)(ii).)
- b. The Permittee shall maintain records for these CEMS, including recorded emission concentrations, records of maintenance, calibration, and operational activity associated with the systems, and the following information:
 - i. Records of measured SO₂, NO_x, CO and CO₂ emissions, in pounds, on an hourly and daily (24-hour) basis;
 - ii. Records identifying periods when the pollutant concentration exceeded the full span of the CEMS;
 - iii. Records describing any modifications to these CEMS that could affect the ability of the CEMS to comply with Performance Specification 3 or 4; and
 - iv. Records for the results of daily calibration drift tests and quarterly accuracy assessments as required under Appendix F, Procedure 1 of 40 CFR 60.
- c. During extended outages of the SO₂ CEMS, the Permittee shall measure and record the exhaust concentration of SO₂, with measurement by gas tubes or equivalent techniques, at least twice per shift.

- d. The Permittee shall submit reports to the Illinois EPA of monitoring of SO₂, NO_x CO and CO₂ emissions, including data for exceedances of applicable short-term limits for SO₂, NO_x and CO. (See also Condition 2.1.10(d).)
- e. The Illinois EPA may revise the requirements for monitoring of CO emissions to allow operational monitoring of CO, through action on the CAAPP permit for the source based on a showing from the Permittee that monitoring for CO emissions is not appropriate given actual levels of CO emissions from the kiln and operational monitoring is adequate to address CO.

2.1.8-2 Opacity Monitoring Requirements

- a.
 - i. The Permittee shall install, calibrate, maintain and operate a continuous opacity monitoring system to measure the opacity of the exhaust from each affected kiln in accordance with 40 CFR 60.11 and 60.343(a).
 - ii. These continuous opacity monitors shall also be operated in accordance with the applicable requirements of the Lime Plant NESHAP, including 40 CFR 63, Subpart AAAAA, Table 4, Item 11, unless the Permittee conducts monitoring with a Bag Leak Detector System or a Particulate Matter Detector System in accordance with the applicable requirements of this NESHAP.
- b. The Permittee shall submit reports of excess opacity measured by this system to the Illinois EPA in accordance with 40 CFR 60.7(c) and, if applicable, 40 CFR 60.343(e).
- c. These requirements for continuous opacity monitoring pursuant to the Lime Plant NSPS will no longer apply if: 1) The NSPS or NESHAP are revised to allow operation of a Bag Leak Detector System or a Particulate Matter Detector System to serve as an alternative to continuous opacity monitoring pursuant to the NSPS; and 2) The Permittee implements use of such an alternative system in accordance with applicable requirements of the Lime Plant NSPS and/or NESHAP.

2.1.8-3 Operational Monitoring and Instrumentation Requirements

- a. Pursuant to the Lime Plant NESHAP, the Permittee shall install, calibrate, maintain, and operate monitoring devices for measuring the mass rate of stone feed to each kiln, which must be accurate to within plus or minus 5 percent of the mass rate over its operating range. The device is required to be operated during emission testing pursuant to 40 CFR 60.343(d) and Item 7 of Table 4 of the Lime Plant NESHAP.
- b. The Permittee shall install, calibrate, maintain, and operate monitoring devices for the oxygen concentration, percent by volume, in the flue gas exiting each kiln, which devices may be installed in the ductwork either before or after the preheater.

- c. i. The Permittee shall install, calibrate, maintain, and operate the following monitoring devices on the fabric filter for each affected kiln:
 - A. Devices to measure the pressure drop across each compartment of the fabric filter.
 - B. A device to measure the outlet gas temperature from the fabric filter.
- ii. As an alternative to the monitoring specified by Condition 2.1.8-3(c)(i)(A), the Permittee may install, maintain and operate a Bag Leak Detector System or Particulate Matter Detector, in accordance with relevant requirements of the Lime Plant NESHAP, including 40 CFR 63.7213 and Item 10 of Table 4 and 40 CFR 63.7121 and Item 2 of Table 5.

2.1.8-4 Fuel Sampling and Analysis

- a. The Permittee shall have quarterly sampling conducted for the solid fuel used in the affected kilns using the procedures in ASTM D2234, which result in data at least as reliable as Classification II - D-2, defined in ASTM D2245 as "Manual Sampling - Stationary Coal/Coke Sampling - Random Spacing" and analyze these samples for ash, sulfur, and heat content using appropriate ASTM Methods. This sampling and analysis may be conducted either by the Permittee or its fuel supplier(s).
- b. The Permittee shall keep records for this activity and the results of the analysis.

2.1.9 Recordkeeping Requirements

- a. i. For the affected kilns, the Permittee shall fulfill applicable recordkeeping requirements of the NSPS, 40 CFR 60.7.
- ii. For the affected kilns, the Permittee shall fulfill applicable recordkeeping requirements of the NESHAP, including 40 CFR 63.7132.
- b. The Permittee shall maintain a file that contains the following information, which shall be kept current:
 - i. For the fabric filter on each affected kiln:
 - A. The design specifications for the fabric filter, including design exhaust flow (acfm or scfm), filter area, type of cleaning, performance guarantee for particulate exhaust loading (gr/scf) and the design specification for the filter material in the fabric filter (type of material, surface treatment(s) applied to material, weight, performance guarantee and warranty provisions).

- B. The manufacturer's recommended operating and maintenance procedures for the fabric filter.
 - C. The normal range of pressure drop across the fabric filter and the maximum safe pressure drop for the fabric filter, with supporting documentation.
 - ii. For the kilns, the design emission rates for CO₂ and CO₂e, with supporting documentation.
- c. The Permittee shall maintain the following logs or other records for each affected kiln:
 - i. Operating log(s) or other records in accordance with Condition 3.3(a), which shall also include the following information:
 - A. The operating status and stone feed rate to the kiln on an hour-by-hour basis (tons).
 - B. Operating parameters of the kiln that are relevant to emissions as measured by process instrumentation, recorded at least once per shift.
 - C. Each startup of the kiln, the nature of the startup, sequence and timing of major steps in the startup, any unusual occurrences during the startup, and any deviations from the established startup procedures, with explanation.
 - D. Each shutdown of the kiln including the nature and reason for the shutdown, sequence and timing of major steps in the shutdown, any unusual occurrences during the shutdown, and any deviations from the established shutdown procedures, with explanation.
 - E. Each malfunction or breakdown that significantly impairs emission performance, including the nature and duration of the event, type of malfunction, i.e., minor or major, sequence and timing of significant steps in the malfunction, corrective actions taken, any deviations from the established procedures for such a malfunction, estimated emissions, probable cause, and preventative actions taken to address similar events.
 - ii. Inspection, maintenance and repair log(s) or other records in accordance with Condition 3.3(b).
- d. The Permittee shall keep the following operating records for the lime plant and the affected kilns:
 - i. The amounts of solid fuel received by the plant, by type (tons/month).

- ii. Stone feed to each kiln (tons/month and tons/year).
 - iii. For solid fuel used by the kilns, by type of fuel, usage (tons/month), average sulfur content (percent by weight and pounds/million Btu), and average heat content (mmBtu/pound).
 - iv. Lime production by the kilns (tons/month).
- e. The Permittee shall maintain records of the following items related to malfunction and breakdown of the affected kilns:
 - i. Date and duration of the malfunction or breakdown, i.e., begin time and time normal operation was achieved or time the kiln was shutdown.
 - ii. Description of the event, impact on emissions, probable cause, and corrective actions.
- f. The Permittee shall maintain records of the following items for each exceedance of the limits in Conditions 2.1.3-2(b), 2.1.3-3, 2.1.3-4, 2.1.4, or 2.1.6, which records shall include:
 - i. Identification of the limit that may have been exceeded.
 - ii. Duration of the possible exceedance.
 - iii. An estimate of the amount of emissions in excess of the applicable standard.
 - iv. A description of the cause of the possible exceedance.
 - v. When compliance was reestablished.
- g. The Permittee shall maintain records of the following items related to emissions of each affected kiln:
 - i. A file containing the emission factors used by the Permittee for estimating controlled emissions from the kiln, which information shall be based on site-specific test data, representative test data or emission determination methodology published by USEPA, with supporting explanation and calculations.
 - ii. Records of emissions of PM, PM₁₀, PM_{2.5}, SO₂, NO_x, VOM, CO, and GHG (as CO₂e) (tons/month and tons/year), with supporting calculations.

2.1.10 Notification and Reporting Requirements

- a.
 - i. The Permittee shall fulfill applicable notification and reporting requirements of the NSPS for the affected kilns and associated control systems, as required by 40 CFR 60.7 and 60.343(c).

- ii. The Permittee shall fulfill applicable notification and reporting requirements of the NESHAP for the affected kilns and associated control systems, as required by 40 CFR 63.7130 and 63.7131, respectively.
- b. The Permittee shall promptly notify the Illinois EPA of any deviations from the requirements of this permit for the affected kiln as follows. These notifications shall include the information specified by Condition 3.4.
 - i. If there is an exceedance of a state emission or opacity standard due to a malfunction or breakdown event, the Permittee shall notify the Illinois EPA in accordance with Condition 2.1.10(b).
 - ii. If there is a deviation from other applicable requirements for PM emissions, opacity or visible emissions that is not repaired or otherwise corrected within 4 hours, the Permittee shall notify the Illinois EPA within 30 days.
 - iii. The deviations addressed above and all other deviations shall be appropriately reported in the periodic compliance reports required by Conditions 2.1.10(a) and (c).
- c. The Permittee shall submit quarterly compliance reports to the Illinois EPA within 30 days following the end of each reporting period. These reports shall include the following information:
 - i. A listing of each startup of a kiln, with brief description of the type of startup, e.g., routine startup following scheduled maintenance outage or hot startup following unplanned power outage.
 - ii. Information for deviations during the reporting period, including detailed information as required by Condition 3.4 for deviations that have not been previously reported pursuant to Condition 2.1.10(b) and a listing of deviations that have been so reported. If there have been no deviations during the reporting period, the report shall state that no deviations occurred during the reporting period.
- d. The Permittee shall submit semi-annual monitoring reports to the Illinois EPA for the CEMS and instrumentation required by Conditions 2.1.8-1, 2.1.8-2 and 2.1.8-3.

2.1.11 Revision of the BACT Limit for GHG Emissions Based on Actual Performance of the Kilns

- a.
 - i. The GHG emission limit for the affected kilns in Condition 2.1.2(b)(iii)(A) shall be lowered based on actual operation and emissions of the kilns unless the

Permittee demonstrates and the Illinois EPA concurs, based on an evaluation as provided pursuant Condition 2.1.11(b), that a lower limit cannot be reliably met without unacceptable consequences, i.e., inability to comply with other emission limits or requirements or significant risk to equipment or personnel, and without unreasonable consequences, i.e., a significant increase in maintenance and repair needed for the kilns.

- ii. The BACT emission limit for GHG shall automatically be lowered to 2630 pounds per ton of lime from the kiln if:
 - A. The Permittee does not perform an evaluation of GHG emissions in accordance with Condition 2.1.11(b); or
 - B. If the Permittee does not complete this evaluation in a timely manner in accordance with Condition 2.1.11(b).
 - iii. This permit will be revised to set a lower limit for GHG emissions (but no lower than the above default limit), if the Illinois EPA, after considering the result of any evaluation performed by the Permittee, finds that the kilns can and should be able to consistently comply with such limit without unreasonable consequences.
- b.
- i. If the Permittee elects to perform an evaluation for GHG emissions, the evaluation shall be performed in accordance with a plan submitted to the Illinois EPA for review and comment. The initial plan shall be submitted to the Illinois EPA no later than one year after initial start-up of a kiln.
 - ii. A. This evaluation shall be completed and a detailed written report submitted to the Illinois EPA within four years after the initial startup of a kiln. This report shall include a proposed alternative limit for GHG emissions of the affected kilns.
 - B. The Illinois EPA may extend this deadline for up to an additional two years if the Permittee submits an interim report demonstrating the need for additional data to effectively set a revised limit for GHG emissions.

2.2 Unit-Specific Conditions for Handling of Limestone and Solid Fuel

2.2.1 Description

Various operations will be present at the lime plant to handle the limestone feedstock for the kilns. Mississippi Lime expects that this limestone will come from an associated underground mine facility by an enclosed transfer system and further crushed to final size at the plant. Alternatively, limestone may be received by truck from an off-site quarry (Alternate Scenario). At the lime plant, the crushed limestone will be stored in stockpiles (See Section 2.4 of this permit). Limestone from the storage piles will be screened to remove material that is too small or large from the limestone that is fed to the kilns. Appropriately sized material will go to bins pending feed to the kilns. Unsuitable material will be stored or stockpiled pending loadout for alternative use.

Solid fuel for the kilns will also be handled. Solid fuel will be stored in stockpiles (See Section 2.4 of this permit). From the stockpiles, fuel will be transferred to the fuel feed bins for the kilns.

The emissions of particulate matter (PM) from these operations will be minimized by the nature of the materials, including moisture content, enclosure and work practices.

2.2.2 List of Emission Units

| Operation | Emissions Units |
|--|---------------------------------------|
| Limestone | |
| Storage | Bins (EP8 and 11) |
| General Transfer Systems (Transfer Systems 1-3) | Transfer |
| | Feeder (EP4) |
| | Screen (EP6) |
| | Feeders (EP12 and 13)* |
| Transfer Systems for On-Site Limestone (Transfer Systems 1-3) | Conveyors (EP93-102) |
| | Feeders (EP109-111) |
| | Conveyors (EP90-92) |
| | Feeder (EP108) |
| | Screens (EP106 and 107) |
| Transfer Systems for Alternate Scenario (Transfer Systems 1-2) | Conveyors (EP 5, 7, 9 and 10) |
| | Conveyors (EP2a and 2b) |
| Limestone Crushing (Handling Systems 1-2) | Crushers (EP104 and EP105) |
| Solid Fuel | |
| Loading | Unloading (EP36) |
| | Front End Loader (EP38) |
| Transfer System | Feeders (EP39, EP40, EP44a and EP44b) |
| | Conveyors (EP42) |
| Final Storage | Bins (EP41a, EP41b, EP43a and EP43b) |

* Feeders (EP12 and 13) vents to Baghouses (CD6 and CD7).

2.2.3-1 Applicability Provisions

- a. The "affected units" for the purpose of these unit-specific conditions are the emission units described in Conditions 2.2.1 and 2.2.2.
- b. The "affected limestone handling operations" for the purpose of these unit-specific conditions are the limestone handling and processing operations described in Conditions 2.2.1 and 2.2.2.
- c. Affected units do not include units at the existing limestone crushing plant that are not addressed by this permit, which shall cease operation and be removed from service when the lime manufacturing plant begins operation.

2.2.3-2 Control Technology Determination

- a. The PM emissions from affected limestone handling operations that, as they are "processed stone handling operations," are subject to the NESHAP, 40 CFR 63, Subpart AAAAAA or the NSPS, 40 CFR 60, Subpart OOO (see Conditions 2.2.3-3(a) or (b)), shall comply with the applicable limits specified by the NSPS and NESHAP.
- b. The PM emissions from other affected units that are not subject to the NSPS or NESHAP shall comply with the following limits:
 - i. Opacity of fugitive emissions, as defined by 40 CFR 60.671, shall not exceed 10 percent, as determined by Method 9, with observations conducted in accordance with 40 CFR 63.7112(1).
 - ii. If a unit is equipped with a capture system, the stack emissions shall not exceed 0.005 gr/dscf as would be measured by Method 5 and 7 percent opacity.
 - iii. If the unit is enclosed in a building, emissions shall either not exceed the relevant limits in Conditions 2.2.3-2(b)(i) and (ii) or there shall be no visible fugitive emissions from the building except emissions from a vent, as defined in 40 CFR 60.671, and emissions from each vent from the building shall not exceed the limits for stack emissions in Condition 2.2.3-2(b)(ii).

2.2.3-3 Applicable Federal Emission Standards

- a. Certain affected units engaged in handling of processed limestone (i.e., storage bins, conveying system, transfer points, bulk loading or unloading systems, screening operations, bucket elevators and belt conveyors), starting with the discharge from the raw limestone storage bins at the lime plant, are subject to the National Emission Standard for Hazardous Air Pollutants (NESHAP) for Lime Manufacturing Plants, 40 CFR 63, Subpart AAAAAA, and related provisions in 40 CFR 63, Subpart A, General Provisions.

- b. Certain affected units engaged in handling limestone (i.e., crushers, grinding mills, screening operations, bucket or belt conveyors, conveyor transfer points, storage bins, and enclosed truck loading stations constructed, modified or reconstructed after August 31, 1983) shall comply with applicable requirements of the NSPS for Nonmetallic Mineral Processing Plants, 40 CFR 60, Subpart OOO, and related provisions of 40 CFR 60, Subpart A, General Provisions.
- c. The affected units that are subject to NSPS and/or NESHAP shall comply with the following limits for PM emissions pursuant to 40 CFR 60.672(a) and (b) and Tables 2 and 3 to 40 CFR Part 60 Subpart OOO and 40 CFR 63.7090(a) and Table 1 to 40 CFR 63 Subpart AAAAA:
 - i. Limits for stack emissions, if any, from such units:
 - A. Emissions, as would be measured by Method 5, shall not exceed 0.032 gram/dscm (0.014 gr/dscf).
 - B. The opacity of emissions shall not exceed 7 percent, unless a wet scrubber is used.
 - ii. Limits for fugitive emissions from such units:
 - A. The opacity of emissions shall not exceed 7 percent.
 - B. The opacity of emissions from each crusher at which a capture system is not used shall not exceed 12 percent.
 - iii. Limits for any such units enclosed in a building:
 - A. Emissions shall not exceed the relevant limits in Conditions 2.2.3-3(c)(i) and (ii); or
 - B. There shall be no visible fugitive emissions from the building except emissions from a vent, as defined in 40 CFR 63.7143, and emissions from each vent from the building shall not exceed the limits for stack emissions in Condition 2.2.3-3(c)(i).
- d. At all times, the Permittee shall maintain and operate affected units that are subject to this NSPS, including associated emission control equipment, in a manner consistent with good air pollution control practice for minimizing emissions, pursuant to 40 CFR 60.11(d).

2.2.3-4 Applicable State Emission Standards

- a. The emissions of particulate from the affected units shall comply with 35 IAC 212.123 and 212.301. (Refer to Conditions 1.3(b) and (c).)

- b. The emissions of particulate, as would be measured by Method 5, from affected units that are equipped with vents shall comply with 35 IAC 212.321. (Refer to Condition 1.3(a).)

2.2.4 Non-Applicability of Regulations of Concern

- a. This permit is issued based on affected units at the plant that handle coal not being subject to the NSPS for Coal Preparation Plants, 40 CFR 60, Subpart Y, because such units at this plant do not prepare more than 200 tons of coal per day by breaking or crushing of the coal. [See 40 CFR 60.250]
- b. Affected units that are not equipped with vents, such as storage piles and the conveyor belt system for transfer of limestone to the plant, are not subject to the limits of 35 IAC 212.321 ("the process weight rate" rule) because of the disperse nature of the units, as provided by 35 IAC 212.323.

2.2.5 Operational and Production Limits and Work Practices

- a. The transfer and loadout and unloading of dust collected by the fabric filter on the kiln shall be enclosed or shall be controlled by water spraying, pelletizing, or other equivalent control methods to prevent visible emissions of particulate.
- b. Pursuant to 40 CFR 63.7090(b) and Table 2, Item 6:
 - i. The emissions from the affected units that are controlled by fabric filters shall be vented through a closed system, except that dilution air may be added to emission streams for the purpose of controlling temperature at the inlet of fabric filter.
 - ii. Fabric filters shall be operated in according to the procedures and requirements of the operating and maintenance plan.

2.2.6 Emission Limitations

- a. Particulate matter emissions from the affected units shall not exceed the following limits. Compliance with these limits shall be determined using established USEPA methodology for calculation of particulate emissions from handling and processing of limestone and other bulk commodities.

| Operation | Limit | | | | | |
|--|-------|--------|------------------|--------|-------------------|--------|
| | PM | | PM ₁₀ | | PM _{2.5} | |
| | Lb/Hr | Ton/Yr | Lb/Hr | Ton/Yr | Lb/Hr | Ton/Yr |
| Limestone | | | | | | |
| Storage | 0.070 | 0.306 | 0.0330 | 0.144 | 0.005 | 0.022 |
| General Transfer Systems | 0.177 | 0.774 | 0.0594 | 0.260 | 0.0011 | 0.006 |
| Transfer Systems for On-Site Limestone | 0.351 | 1.544 | 0.1290 | 0.565 | 0.0075 | 0.033 |
| Transfer System for | 0.006 | 0.033 | 0.0017 | 0.008 | 0.0007 | 0.003 |

| Operation | Limit | | | | | |
|--------------------|-------|--------|------------------|--------|-------------------|--------|
| | PM | | PM ₁₀ | | PM _{2.5} | |
| | Lb/Hr | Ton/Yr | Lb/Hr | Ton/Yr | Lb/Hr | Ton/Yr |
| Alternate Scenario | | | | | | |
| Limestone Crushing | 0.074 | 0.320 | 0.0248 | 0.109 | 0.0005 | 0.003 |
| Subtotal | | 2.98 | | 1.09 | | 0.07 |
| Solid Fuel | | | | | | |
| Loading | 0.010 | 0.031 | 0.003 | 0.0131 | 0.0005 | 0.002 |
| Transfer System | 0.001 | 0.006 | 0.001 | 0.0030 | 0.0003 | 0.001 |
| Final Storage | 0.010 | 0.044 | 0.003 | 0.0150 | 0.0001 | 0.001 |
| Subtotal | | 0.09 | | 0.04 | | 0.01 |
| Total | | 3.06 | | 1.12 | | 0.08 |

2.2.7-1 Performance Testing for Opacity

- a. The Permittee shall conduct opacity observations for each affected unit in accordance with Condition 3.2:
 - i. No later than 45 days after the date initial emission testing of the affected kilns is performed, as required by Condition 2.1.7(a)(i).
 - ii. Upon written request by the Illinois EPA, in which case observations shall be conducted within 45 days or such later date specified by the Illinois EPA.

2.2.7-2 Periodic Observations for Opacity and Visible Emission

- a. The Permittee shall periodically demonstrate compliance with applicable opacity and visible emission (VE) limits for each affected unit in accordance with 40 CFR 63.7121 and Table 6 to 40 CFR 63 Subpart AAAAA, including:
 - i. For each affected unit that is subject to an opacity limit in Condition 2.2.3-3(c), the Permittee shall:
 - A. Conduct a monthly 1-minute VE check of each affected unit in accordance with 40 CFR 63.7121(e), while the unit is in operation.
 - B. If no VE are observed in six consecutive monthly checks for any affected unit, the frequency of VE checks may be decreased from monthly to semi-annually for that unit. If VE are observed during any semi-annual check for that unit, the VE check shall resume to monthly check as required in Condition 2.2.7-2(a)(i)(A) until no VE are observed for six consecutive monthly checks.
 - C. If no VE are observed in the semi-annual check for any affected unit, the frequency of VE check required in Condition 2.2.7-2(a)(i)(B) may be decreased from semi-annually to annually for that

unit. If VE are observed during any annual check for that unit, the VE check shall resume to monthly check as required in Condition 2.2.7-2(a)(i)(A) until no VE are observed for six consecutive monthly checks.

- D. If VE are observed during any VE check, the Permittee shall conduct a 6-minute test of opacity in accordance with Method 9. This test shall begin the Method 9 test within 1 hour of any observation of VE and the 6-minute opacity reading shall not exceed the applicable opacity limit.
- ii. For any building subject to the requirements of a VE limit in Condition 2.2.3-3(c)(iii), the Permittee shall:
 - A. Conduct a monthly VE check of the building in accordance with 40 CFR 63.7121(k), while all the enclosed process stone limestone handling operations are operating.
 - B. The check for each affected building shall be at least 5 minutes, with each side of building and roof being observed for at least 1 minute.
 - C. The Permittee may decrease the frequency of this observation from monthly to semi-annually or semi-annually to annually as allowed in Conditions 2.2.7-2(a)(i)(B) or (C), respectively.

2.2.7-3 Emission Testing

- a. The Permittee shall conduct emission testing for stack emissions of the PM of the affected units as required by 40 CFR 60 Subpart 000 and 40 CFR 63 Subpart AAAAAA. In addition to be conducted in accordance with applicable requirements of these rules, this testing shall be conducted in accordance with Condition 3.1.
- b. In conjunction with emission testing required by 40 CFR 60, Subpart 000 or 40 CFR 63, Subpart AAAAAA and within 90 days of a written request from the Illinois EPA, the Permittee shall have the PM, PM₁₀, and PM_{2.5} emissions at the stacks or vents of the affected units, as specified in such request, measured during representative operating conditions. Testing shall be conducted in accordance with the procedures and method specified in Condition 3.1 using USEPA test methods and procedures.

2.2.8 Inspections

- a. i. The Permittee shall conduct inspections of the affected units on at least a weekly basis with supervisory personnel or other personnel who are not engaged in running the affected units on a day-to-day basis for the

specific purpose of verifying that the measures required to control emissions are being properly implemented.

- ii. On at least a semi-annual basis, these inspections shall be conducted by individual who are certified observers for opacity pursuant to USEPA Method 9.
- iii. The Permittee shall keep records documenting the performance of these inspections and their findings.
- b. The Permittee shall conduct inspections of any capture/collection and closed vent system at least once each calendar year to ensure that each system is operating in accordance with the operating requirements in Condition 2.2.5. [40 CFR 63.7121]
- c. The Permittee shall keep records documenting the performance of these inspections and their findings.

2.2.9 Recordkeeping Requirements

- a. For each affected unit that is subject to NSPS, 40 CFR 60, Subpart 000, the Permittee shall fulfill applicable recordkeeping requirements of the NSPS, 40 CFR 60.7 and 60.676.
- b. For each affected unit that is subject to NESHAP, 40 CFR 63, Subpart AAAAA, the Permittee shall fulfill applicable recordkeeping requirements of the NESHAP, 40 CFR 63.7132.
- c. The Permittee shall maintain records of the throughput of each group of affected units, tons/month, by type of material, e.g., limestone, coal, petroleum coke, and kiln dust.
- d. The Permittee shall maintain the following logs or other similar records for the affected units:
 - i. Operating log(s), in accordance with Condition 3.3(a).
 - ii. Inspection, maintenance and repair log(s) or other records in accordance with Condition 3.3(b).
- e. The Permittee shall maintain records of the following items related to the emissions of the affected units:
 - i. A file containing the standard emission factors used by the Permittee for estimating emissions from the affected unit, which information shall be based on site-specific test data, representative test data, or emission determination methodology published by USEPA, with supporting explanation and calculations.
 - ii. Records of emissions of PM and PM₁₀, (tons/month and tons/year), with supporting calculations.

2.2.10 Notification and Reporting Requirements

- a. The Permittee shall promptly notify the Illinois EPA of any deviations from the requirements of this permit for an affected unit as follows. These notifications shall include the information specified by Condition 3.4.
 - i. If the affected unit is damaged so there is a deviation from applicable requirements for visible emissions that is not repaired or otherwise corrected within 1 hours (60 minutes), the Permittee shall notify the Illinois EPA within 30 days.
 - ii. The deviations addressed above and all other deviations shall be reported with the periodic compliance reports required by Condition 2.1.10(c).

2.2.11 Flexibility

The Permittee is authorized, as follows, to construct and operate affected units that differ from those described in the application without obtaining further approval by the Illinois EPA. This condition does not affect the Permittee's obligation to comply with all applicable requirements for affected units:

- a. This authorization only extends to changes that result from the detailed design of the plant and any refinements to that design of the affected units that occur during construction and the initial operation of the plant.
- b. With respect to air quality impacts, these changes shall generally act to improve dispersion and reduce impacts, as emissions from individual units are lowered, units are moved apart or away from the fence line, stack heights are increased, and heights of nearby structures are reduced.
- c. The Permittee shall notify the Illinois EPA prior to proceeding with any changes. In this notification, the Permittee shall describe the proposed changes and explain why the proposed changes will act to reduce impacts, with detailed supporting documentation.
- d. Upon written request by the Illinois EPA, the Permittee shall promptly have air quality dispersion modeling performed to demonstrate that the overall effect of the changes is to reduce air quality impacts, so that impacts from affected units remain at or below those predicted by the air quality analysis accompanying the application.

2.3 Unit-Specific Conditions for Lime Processing and Handling Equipment

2.3.1 Description

The plant will have equipment to handle and process the lime produced by the kilns. The lime is screened to size the product. Some of the lime from the kilns, which is quick lime (CaO), is converted to hydrated lime (Ca(OH)_2). Kiln dust, i.e., lime and limestone dust collected by the baghouses on the kilns, will also be handled pending final disposition.

The emissions of particulate matter (PM) from this equipment will be controlled by a combination of work practices and fabric filters (baghouses).

2.3.2 List of Emission Units

| Operation | Emissions Units | | Associated Baghouse(s) |
|--|--|----------------|------------------------------|
| Lime | | | |
| Quick Lime Systems | Feeders, Conveyors, and Pneumatic Conveyor | | CD 1/2, CD3/4, CD62 and CD63 |
| | Screens | | CD 3/4 |
| | Bins | | CD 3/4 & 64 |
| | Truck Loadout | | CD 8 |
| Hydrated Lime Systems (Hydrating Systems 1-4) | Feeder | | CD 13 |
| | Handling, storage and loadout | Conveyors | CD 14 & 15 |
| | | Bins | CD 15, 18, 19 & 20 |
| | | Air Separators | CD 17 |
| | | Truck Loadouts | CD 18 & 19 |
| | Processing | Crusher | CD 15 |
| | | Screen | CD 17 |
| | | Mill | |
| | Hydrator | | CD 16 |
| Loadout Systems | Rail Loadout | CD 61 | |
| | Barge Loadout | CD 65 | |
| Off-Specification Lime | | | |
| Transfer and Loadout of Off-Specification Lime | Elevator | | CD 1 & 2 |
| | Feeder | | |
| | Bin | | |
| | Truck Loadout | | CD 8 |
| Kiln Dust | | | |
| Kiln Dust Handling | Screw and Pneumatic Conveyors | | CD 5 |
| | Bin | | |
| | Loadout | | |

2.3.3-1 Applicability Provisions

- a. The "affected units" for the purpose of these unit-specific conditions are the emission units described in Conditions 2.3.1 and 2.3.2.

2.3.3-2 Control Technology Determinations

- a. Control Technology Determination for Units other than Loadout of Quick Lime and Off-Specification Lime
 - i. Emissions of PM from the affected units shall be controlled by enclosure and filter systems.
 - ii. There shall be no visible emissions of fugitive PM, as determined by USEPA Method 22, from the affected units.
 - iii. The PM emissions from each stack or control device for affected units shall not exceed 0.005 gr/scf, as measured by Method 5, and shall not exhibit more than 7 percent opacity as measured by Method 9, with observations conducted in accordance with 40 CFR 63.7112(k) or (l).
- b. Control Technology Determination for Truck and Rail Loadout of Quick Lime and Off-Specification Lime
 - i. Emissions of PM from truck and rail loadout shall be controlled by partial enclosure, a fabric filter to treat displaced air during loadout, and loadout practices to minimize spillage.
 - ii. For each truck or rail loadout system, there shall be no visible emissions of fugitive PM, as determined by USEPA Method 22, except for periods not to exceed a total of 2.5 minutes in any one hour period.
 - iii. The PM emissions from each control device shall not exceed 0.005 gr/scf, as measured by Method 5, and shall not exhibit more than 7 percent opacity as measured by Method 9, with observations conducted in accordance with 40 CFR 63.7112(k) or (l).
- c. Control Technology Determination for Barge Loadout
 - i. Emissions of PM from barge loadout shall be controlled by a telescoping loading spout with suction or aspiration at the discharge end and a filter system.
 - ii. For barge loadout, the opacity of fugitive emissions shall not exceed 20 percent opacity, as determined by USEPA Method 9.
 - iii. The PM emissions from the control device shall not exceed 0.005 gr/scf, as measured by Method 5, and shall not exhibit more than 7 percent opacity as measured by Method

9, with observations conducted in accordance with 40 CFR 63.7112(k) or (l).

2.3.3-3 State Emission Standards

- a. The emissions of particulate from the affected units shall comply with 35 IAC 212.123 and 212.301. (Refer to Conditions 1.5(a) and (b).)
- b. The emissions of particulate, as would be measured by Method 5, from affected units shall comply with 35 IAC 212.321. (Refer to Condition 3.1(a).)

2.3.4 Non-Applicability Provisions

None

2.3.5 Operational and Production Limits and Work Practices

- a. Any spills of material from the affected units shall be immediately collected or otherwise handled in a manner that prevents lime from being dispersed or becoming airborne. (See also Condition 2.3.3-2(c).)
- b. The Permittee shall operate the baghouses for the affected units with a pressure drop that is within a range that is consistent with manufacturer's recommended levels or that during emission testing that demonstrated compliance with applicable requirements.

2.3.6 Emission Limitations

- a. Emissions from the affected units, other than the units that loadout Quick Lime and Off-Specification Lime, shall not exceed the following limits:

| Emission Unit (by associated baghouse) | Limit | | | | | |
|--|--------|--------|------------------|--------|-------------------|--------|
| | PM | | PM ₁₀ | | PM _{2.5} | |
| | Lb/Hr | Ton/Yr | Lb/Hr | Ton/Yr | Lb/Hr | Ton/Yr |
| CD 1/CD 2 | 0.0088 | 0.039 | 0.0048 | 0.021 | 0.0024 | 0.011 |
| CD 3/CD 4 | 0.0758 | 0.332 | 0.0330 | 0.145 | 0.0111 | 0.049 |
| CD 5 | 0.1270 | 0.556 | 0.0701 | 0.307 | 0.0330 | 0.145 |
| CD 13 | 0.0120 | 0.053 | 0.0060 | 0.026 | 0.0032 | 0.014 |
| CD 14 | 0.3270 | 1.432 | 0.1800 | 0.788 | 0.0900 | 0.394 |
| CD 15 | 0.5154 | 2.258 | 0.2835 | 1.242 | 0.1418 | 0.621 |
| CD 16 | 1.9655 | 8.609 | 1.0811 | 4.735 | 0.5290 | 2.317 |
| CD 17 | 0.1255 | 0.550 | 0.0690 | 0.302 | 0.0352 | 0.154 |
| CD 18 | 0.5455 | 2.389 | 0.3000 | 1.314 | 0.1500 | 0.657 |
| CD 19 | 0.5455 | 2.389 | 0.3000 | 1.314 | 0.1500 | 0.657 |
| CD 20 | 0.3636 | 1.593 | 0.2000 | 0.876 | 0.1000 | 0.438 |
| CD 62/CD63 | 0.0146 | 0.064 | 0.0080 | 0.036 | 0.0040 | 0.018 |
| CD 64 | 0.0759 | 0.332 | 0.0280 | 0.123 | 0.0056 | 0.025 |
| Total | --- | 20.60 | --- | 11.23 | --- | 5.50 |

- b. Stack (S) and uncaptured (U) emissions from the emissions units that loadout Quick Lime and Off-Specification Lime shall not exceed the following limits:

| Emission Unit (associated baghouse) | | Limit | | | | | |
|---|---|---------|--------|------------------|--------|-------------------|--------|
| | | PM | | PM ₁₀ | | PM _{2.5} | |
| | | Lb/Hr | Ton/Yr | Lb/Hr | Ton/Yr | Lb/Hr | Ton/Yr |
| Truck Load-Out (CD 8) | S | 0.4500 | 1.971 | 0.4500 | 1.971 | 0.2205 | 0.966 |
| | U | 0.4530 | 1.980 | 0.1600 | 0.700 | 0.0240 | 0.110 |
| Rail Load-Out (CD 61) | S | 0.2613* | 1.145 | 0.1436* | 0.629 | 0.0706* | 0.309 |
| | U | 0.2520* | 1.100 | 0.0890* | 0.390 | 0.0130* | 0.060 |
| Barge Load-Out (CD 65) | S | 0.0525* | 0.230 | 0.0289* | 0.127 | 0.0142* | 0.062 |
| | U | 0.5000* | 2.190 | 0.1770* | 0.780 | 0.0270* | 0.120 |
| Total | | --- | 8.62 | --- | 4.60 | --- | 1.63 |

* Limit applies as a 24-hour average, i.e., the mass of emissions during a block 24-hour period in which any loadout activity occurred divided by 24.

2.3.7 Testing Requirements for Affected Units

- a. The Permittee shall conduct opacity observations for each affected unit in accordance with Condition 3.2:
- i. No later than 45 days after the date that initial emission testing of an affected kiln is performed, as required by Condition 2.1.7(a)(i), if visible emissions are normally observed from the exhaust from the fabric filters.
 - ii. Upon written request by the Illinois EPA, in which case observations shall be conducted within 45 days or such later date specified by the Illinois EPA.
- b. For the affected units that load out quick lime or off-specification lime from the plant, the Permittee shall conduct observations for visible emissions or opacity, as follows, while the units are loading out material.
- i. The timing of these observations shall be as follows:
 - A. For each such unit, initial observations shall be conducted within 45 days of the date that such unit first loads out material. Thereafter, periodic observations shall be conducted, with observations made once every three calendar months in which the unit operates.
 - B. In addition, upon written request by the Illinois EPA, observations shall be conducted for a unit within 30 days, the day that the unit next operates, or such later date agreed to by the Illinois EPA.
 - ii. The procedures for these observations shall be as follows:

- A. For each affected unit that loads trucks or rail cars, observations shall be conducted for visible emissions in accordance with Method 22. For the periodic observations, the total duration of observations shall be one hour.
- B. For the affected barge loading unit, observations shall be conducted for opacity in accordance with Method 9. For the periodic observations, the total duration of observations shall be one hour.
- c. Within 90 days of a written request from the Illinois EPA, the Permittee shall have the PM, PM₁₀, and PM_{2.5} emissions at the stacks or vents of the affected units, as specified in such request, measured during representative operating conditions. Testing shall be conducted in accordance with the procedures and method specified in Condition 3.1 using USEPA test methods and procedures.

2.3.8 Inspection Requirements

- a. The Permittee shall conduct inspections of the affected units on at least a monthly basis with supervisory personnel or other personnel who are not engaged in running the affected units on a day-to-day basis for the specific purpose of verifying that measures required to control emissions are being properly implemented.
- b. The Permittee shall keep records documenting the performance of these inspections and their findings.

2.3.9 Recordkeeping Requirements

- a. The Permittee shall maintain files, which shall be kept current, that contain:
 - i. For each fabric filter or other filter devices associated with the affected units, design specifications for each device (type of unit, maximum design exhaust flow (acfm or scfm), filter area, type of filter cleaning, performance guarantee for particulate exhaust loading (gr/scf), the manufacturer's recommended operating and maintenance procedures for the device, and design specification for the filter material in each device (type of material, surface treatment(s) applied to material, weight, performance guarantee, warranty provisions, etc.).
 - ii. For each fabric filter, the normal range of pressure drop across the device and the minimum and maximum safe pressure drop for the device, with supporting documentation.

- b. The Permittee shall maintain written work procedures for the affected units.
- c. The Permittee shall maintain the following logs or other records for the affected units:
 - i. Operating log(s), in accordance with Condition 3.3(a), which records shall include information addressing any incidents when lime was spilled.
 - ii. Inspection, maintenance and repair log(s) or other records in accordance with Condition 3.3(b).
- d. The Permittee shall maintain records of the following items related to emissions of the affected units:
 - i. A file containing the standard emission factors used by the Permittee for estimating controlled emissions from the affected unit, which information shall be based on site-specific test data, representative test data or emission determination methodology published by USEPA, with supporting explanation and calculations.
 - ii. Records of emissions of PM, PM₁₀, and PM_{2.5}, (tons/month and tons/year), with supporting calculations.

2.3.10 Reporting Requirements

- a. The Permittee shall promptly notify the Illinois EPA of any deviations from the requirements of this permit for the affected units as follows. These notifications shall include the information specified by Condition 3.4.
 - i. If the affected unit is damaged so there is a deviation from applicable requirements for visible emissions that is not repaired or otherwise corrected within 1 hour (60 minutes), the Permittee shall notify the Illinois EPA within 30 days.
 - ii. The deviations addressed above and all other deviations shall be reported with the periodic compliance reports required by Condition 2.1.10(c).

2.3.11 Flexibility

The Permittee is authorized, as follows, to construct and operate affected units that differ from those described in the application without obtaining further approval by the Illinois EPA. This condition does not affect the Permittee's obligation to comply with all applicable requirements for affected units:

- a. This authorization only extends to changes that result from the detailed design of the plant and any refinements to that design of the affected units that occur during construction and the initial operation of the plant.

- b. With respect to air quality impacts, these changes shall generally act to improve dispersion and reduce impacts, as emissions from individual units are lowered, units are moved apart or away from the fence line, stack heights are increased, and heights of nearby structures are reduced.
- c. The Permittee shall notify the Illinois EPA prior to proceeding with any changes. In this notification, the Permittee shall describe the proposed changes and explain why the proposed changes will act to reduce impacts, with detailed supporting documentation.
- d. Upon written request by the Illinois EPA, the Permittee shall promptly have air quality dispersion modeling performed to demonstrate that the overall effect of the changes is to reduce air quality impacts, so that impacts from affected units remain at or below those predicted by the air quality analysis accompanying the application.

2.4 Unit-Specific Conditions for Storage Piles and Roadways

2.4.1 Description

Crushed limestone and solid fuel will be stored at the plant in stockpiles. Fugitive dust or particulate emissions will be minimized by implementation of a fugitive dust control program.

Fugitive dust or particulate emissions will also be generated by vehicle traffic and wind erosion on roadways, parking areas and access areas at the plant. These emissions are controlled by implementation of a fugitive dust control program to minimize the generation of emissions.

2.4.2 List of Emission Units and Pollution Control Equipment

| Emission Unit | Description | Emission Control |
|----------------------------|--|-------------------------------|
| Storage Piles | Limestone and Fuel Storage | Fugitive Dust Control Program |
| Roadways and Parking Areas | PM emissions from vehicle traffic and wind erosion on roadways and parking areas | Fugitive Dust Control Program |

2.4.3-1 Applicability Provisions

- a. The affected storage piles for the purpose of these unit-specific conditions are the storage piles described in Condition 2.4.1 and 2.4.2.
- b. The affected roadways and parking areas for the purpose of these unit-specific conditions are the areas described in Conditions 2.4.1 and 2.4.2.

2.4.3-2 Control Technology Determination

- a. The opacity of PM emissions from affected units shall not exceed 10 percent. For this purpose, opacity shall be determined in accordance with 35 IAC 212.109.
- b. Emissions of PM from affected roadways and parking area shall be controlled by implementation of a fugitive dust control program that provides for water spraying or application of dust suppressant for units that are not paved and vacuum sweeping or water flushing for units that are paved, which activities shall be performed on an appropriate schedule when a roadway or area is in use unless significant precipitation has occurred during the previous 24 hours or there is snow or ice buildup on the roadway or area.

2.4.3-3 Applicable State Regulations

- a. The particulate matter emission from the affected units shall comply with the standards in 35 IAC 212.123 and 212.301. (Refer to Condition 1.3)

2.4.4 Non-Applicability of Regulations of Concern

- a. The affected units are not subject to the requirements of 35 IAC 212.321 pursuant to 35 IAC 212.323.

2.4.5 Work Practices

- a. The Permittee shall follow good air pollution control practices to minimize PM emissions from affected roadways and parking area. These practices shall provide for paved run out areas for all regularly traveled entrances and exits from the source, and treatment (e.g., watering, dust suppressant application, vacuum sweeping, and/or flushing) of all affected units on which routine truck traffic is occurring for very effective and effective control of dust, respectively (nominal 90 percent for paved units and 75 percent control for other units).
- b. The Permittee shall carry out control measures for PM emissions from affected roadways and parking area in accordance with a written control program maintained by the Permittee, which shall set forth the measures being implemented to demonstrate compliance with Conditions 2.4.3-2 and 2.4.5(a). This program shall include: (1) a description of the emissions control technique(s) (e.g., vacuuming or sweeping) that will routinely be implemented; (2) triggers for implementation of additional control, e.g., observation of extended dust plumes following passage of vehicles; and (3) the estimated effectiveness of the various control techniques in reducing PM emissions from the different classes of units, with supporting documentation.

2.4.6 Emission Limitations

- a. Emissions of PM, PM₁₀, and PM_{2.5} from the affected units shall not exceed the following limits.

| Emission Units | Limit (Tons/Yr) | | |
|---|-----------------|------------------|-------------------|
| | PM | PM ₁₀ | PM _{2.5} |
| Limestone Storage Piles (EP03, EP66 and EP67) | 3.60 | 1.80 | 0.27 |
| Coke/coal Storage Piles (EP37) | 1.12 | 0.56 | 0.09 |
| Roadways and Parking Areas | 7.70 | 2.20 | 0.22 |
| Total | 12.42 | 4.56 | 0.58 |

- b. Compliance with these limits shall be determined from the amount and type of material stored in storage piles at the plant, the amount and type of vehicle traffic for the plant, appropriate emission factors and engineering calculations with appropriate USEPA methodology for estimating emissions of fugitive dust from storage piles and roads and open areas.

2.4.7 Opacity Observations

The Permittee shall conduct opacity observations for the affected units in accordance with Condition 3.2:

- a. No later than 45 days after the date initial emission testing of the kilns is performed, as required by Condition 2.1.7.
- b. Upon written request by the Illinois EPA, in which case observations shall be conducted within 45 days or such later date specified by the Illinois EPA.

2.4.8-1 Inspections

- a. The Permittee shall conduct inspections of the affected units on a monthly basis with personnel who do not implement the control program on a day-to-day basis for the specific purpose of verifying that the measures identified in the program and other measures required to control emissions from affected units are being properly implemented.
- b. On at least a quarterly basis, these inspections shall include observations of the opacity of PM emissions from affected units by individual who are certified observers for Method 9.
- c. The Permittee shall keep records documenting the performance of these inspections and their findings.

2.4.8-2 Measurements of Silt Loading

The Permittee shall conduct measurements of the silt loading on affected roadways and parking areas, as follows:

- a. Sampling and analysis of the silt loading on representative road segments shall be conducted using the appropriate provisions in the "Procedures for Sampling Surface/Bulk Dust Loading," Appendix C.1 in Compilation of Air Pollutant Emission Factors, USEPA, AP-42. A series of samples shall be taken to determine the average silt loading and address the change in silt loadings as related to the amount and nature of vehicle traffic. For this purpose, sampling shall not be conducted only immediately after treatment of roadways but shall either be conducted so to obtain representative data for the silt loadings on roadways.
- b. Measurements shall be performed by the following dates:
 - i. Measurements shall first be completed in conjunction with emission testing for the lime kiln no later than 45 days after conducting emissions testing of the kiln pursuant to Condition 2.1.7-1(a)(i).
 - ii. Measurements shall be repeated within 30 days in the event of changes involving affected units that would act to increase the silt loading (so that data that is representative of the current circumstances of the affected units has not been collected), including changes in the amount or type of traffic on affected units, changes in standard operating practices for affected units, such as application of traction material during

cold weather, and changes in the operating program for affected units.

- iii. Upon written request by the Illinois EPA, the Permittee shall conduct measurements, as specified in the request, which shall be completed within 75 days of the Illinois EPA's request.
- c. The Permittee shall submit test plans, test notifications and test reports for these measurements as specified by Condition 3.1(d), (e) and (f) provided, however, that once a test plan has been accepted by the Illinois EPA, a new test plan need not be submitted if the accepted plan will be followed or a new test plan is requested by the Illinois EPA.

2.4.9 Recordkeeping Requirements

- a. The Permittee shall maintain a file containing:
 - i. The Permittee's assumptions, with supporting explanation, for the typical and maximum quantity and nature of vehicle traffic for the affected units, including truck traffic related to the receipt of fuel and shipment of lime from the plant.
 - ii. The maximum PM, PM₁₀, and PM_{2.5} emissions from the affected units (tons/year), with supporting calculations, based on the maximum vehicle traffic at the plant (as recorded above), the silt loading on the different classes of affected units (as measured pursuant to Condition 2.4.8-2), and the effectiveness of the current fugitive dust control program (as addressed in Condition 2.4.5(a)).
- b.
 - i. The Permittee shall maintain a written fugitive dust control program describing the measures that are being implemented pursuant to Conditions 2.4.3-2 and 2.4.5 to control PM emissions from affected units. This program shall identify established control measures (e.g., water spray, surfactant spray, vacuum sweeping or water flushing); details of standard treatments (e.g., speed of treatment vehicle, flow of water, width of application, and additive concentration); normal frequency with which measures would be implemented; circumstances, e.g., recent precipitation, in which the measure would not be implemented; triggers for additional control, e.g., observation of 8 percent opacity; and calculated control efficiency, with supporting calculations.
 - ii. The program shall be accompanied by maps or diagrams indicating the location of affected units with the potential to generate for PM emissions, with description (length, width, surface material, etc.) and volume and nature of expected traffic or other activity.

- iii. The Permittee shall submit a copy of a revised fugitive dust control program to the Illinois EPA for review and approval within 90 days of a request from the Illinois EPA for a revision to the program to address observed deficiencies in the control program.
- c. The Permittee shall maintain records of the amount of bulk materials received and shipped from the plant by truck (tons, by type of material).
- d. The Permittee shall maintain documenting the implementation of the dust control program for the affected units including:
 - i. Records for treatment of affected units by means other than automatic/automated systems, including the date and time; the reason for treatment, if not routine; the type of treatment; the identity of the treatment vehicle or equipment; and a description of any unusual observations or events related to control of dust that occurring during treatment; and
 - ii. Detailed records for incidents when control measures were not carried out as scheduled or were not fully implemented and incidents when additional control measures were carried out, with a description of each such incident and explanation, including the information specified in Condition 3.4(a), and an estimate of the additional PM emissions that resulted, if any, with supporting calculations. These records shall also address any adjustments to the scheduling of control measures made by the Permittee due to weather conditions that either acted to reduce or increase the level of potential dust, such as extended periods of dry weather.
- e. The Permittee shall maintain records for the PM, PM₁₀, and PM_{2.5} emissions of the affected units on at least an annual basis to verify compliance with the limit in Condition 2.4.6, based on operating data for the source, the above records for the affected units including data for implementation of the operating program, and appropriate USEPA emission estimation methodology and emission factors, with supporting calculations.

2.4.10 Notification and Reporting Requirements

- a. The Permittee shall promptly notify the Illinois EPA of any deviations from the requirements of this permit for the affected units as follows. These notifications shall include the information specified by Condition 3.4.
 - i. If the availability of treatment for the affected units is interrupted for 5 or more days and there is a deviation from applicable requirements for the affected units, the Permittee shall notify the Illinois EPA within 30 days.

- ii. The deviations addressed above and all other deviations shall be reported with the periodic compliance reports required by Condition 2.1.10(c).

SECTION 3: GENERAL CONDITIONS

3.1 Emission Testing Requirements

- a. Emissions testing shall be conducted by an approved testing service at the expense of the Permittee. Unless otherwise specified by this permit or a request from the Illinois EPA for the performance of emission testing, emission testing shall be conducted while affected unit(s) are operating at maximum rate(s) and during other representative operating conditions of the unit(s) and associated control system(s).
- b. i. USEPA test methods and procedures shall be used for measurement of emissions, including the following methods, unless other established methods are specified in unit-specific condition of this permit or are approved by the Illinois EPA as part of the approval of a test plan. Refer to 40 CFR 51, Appendix M, 40 CFR 60, Appendix A and 40 CFR 63, Appendix A for USEPA test methods.

| | |
|----------------------------------|--|
| CO | Method 10 ^a |
| VOM | Method 18 ^b and either 25 or 25A ^c |
| PM (filterable) | Method 5 ^d |
| PM ₁₀ (filterable) | Method 201A |
| PM _{2.5} (filterable) | Method 201A |
| PM (condensable) | Method 202 |
| Methane (CH ₄) | Method 320 |
| Nitrous Oxide (N ₂ O) | Method 320 |
| Sulfuric Acid Mist | Method NCASI 8a (Controlled Condensation) |
| Metals | Method 29 |

Notes:

- a. Test method provided if testing of the kiln is required and continuous emissions monitoring is not required.
- b. Methane, ethane and other exempt compounds may be excluded from the results of VOM emission testing for emission unit(s) provided that Method 18, or other appropriate test procedure identified in the test plan approved by the Illinois EPA, is used to quantify and adjust for the presence of such compounds in the exhaust from the unit(s).
- c. Method 25 shall be used to measure emissions of VOM unless the concentration of organic compounds in the exhaust stream from a unit is less than 50 ppmv.
- d. During measurements of emissions, observations of opacity shall also be conducted in accordance with USEPA Method 9 if the opacity of the exhaust is not monitoring during testing.

- ii. PM₁₀ tests shall include measurements of condensable particulate, as collected in the back half of the Method 5 sampling train or by separate measurements using USEPA Method 202 (40 CFR Part 51, Appendix M). For units for which the average stack gas temperature is less than 250°F, such as the lime handling systems, testing may be conducted at actual stack gas temperature without heating of the probe or filter holders.
- c. For purposes of determining compliance of the affected units with the NESHAP standard pursuant to 40 CFR 63.7112:
 - i. The emission tests for the affected kilns and affected limestone handling operations that are subject to the requirements of NESHAP, Subpart AAAAAA shall be conducted in accordance with Table 4 of this NESHAP (as applicable) using the test methods and procedures specified in 40 CFR 63.7(e)(1) and under conditions specified in Table 4.
- d. The Permittee shall submit a written test plan to the Illinois EPA for review and approval for initial testing of an emission unit and if a significant change in the procedures for testing is planned from the procedures followed in the previous testing of an emission unit. This plan shall be submitted at least 60 days prior to the actual date of testing and include the following information as a minimum:
 - i. A description of the planned emission test.
 - ii. The person(s) who will be performing sampling and analysis and their experience with similar tests.
 - ii. The specific conditions under which testing will be performed, including a discussion of why these conditions will be representative of the maximum emissions, the levels of operating parameters at or within which compliance is intended to be shown, if parameters for the process and any control equipment will be determined.
 - iii. The specific determination of emissions and operations intended to be made, including sampling and monitoring locations.
 - iv. The test methods that will be used, with the specific analysis method.
 - v. Any minor changes in standard methodology proposed to accommodate the specific circumstances of testing, with justification.
 - vi. A statement that the testing will be performed by a qualified independent testing service.

- e.
 - i. Prior to carrying out emission tests, the Permittee shall notify the Illinois EPA a minimum of 30 days prior to the scheduled date of these tests with the exact date, time and place of these tests, to enable the Illinois EPA to witness these tests.
 - ii. If the scheduled date for the test is changed, the Permittee shall inform the Illinois EPA within 5 working days of the scheduled test date and must specify the date and time of the rescheduled test.
 - iii. Notwithstanding the above, the Illinois EPA may at its discretion accept notifications with shorter advance notice provided that the Illinois EPA will not accept such notifications if it interferes with the Illinois EPA's ability to observe testing.
- f. The Permittee shall submit three copies of the Final Report(s) for emissions tests to the Illinois EPA no later than 60 days after completion of sampling. The Final Report shall include as a minimum:
 - i. Information required pursuant to 40 CFR 63.7112(h).
 - ii. General information, i.e., date of test, names of testing personnel, and names of Illinois EPA observers.
 - iii. A summary of the measured emissions of different pollutants in pounds per hour and other appropriate terms, e.g., lbs/ton, lbs/ton, gr/dscf or ppmv.
 - iv. A statement whether compliance was demonstrated
 - v. A detailed description of operating conditions of the emission unit(s) during testing, including:
 - A. Process information, e.g., type or product and operating rate.
 - B. Control system operating parameters during testing.
 - vi. Description of test method(s), including description of sampling points, sampling train, analysis equipment, and test schedule.
 - vii. Data and calculations, including copies of all raw data sheets and records of laboratory analyses, sample calculations, and data on equipment calibration.
 - viii. Conclusions.
- g. The Permittee shall retain copies of emission test reports for at least five years after the date that an emission test is superseded by a more recent test.

3.2 Opacity Observations

- a. Upon written request by the Illinois EPA, the Permittee shall conduct opacity observations for specific affected unit(s) or unit(s) within 45 calendar days of the request or on the date agreed upon by the Illinois EPA, whichever is later.
- b. Opacity of emissions shall be determined during representative weather and operating conditions by a qualified observer in accordance with USEPA Test Method 9 and in a manner consistent with 40 CFR 60.675 and 63.7121, as further specified below.
- c. The duration of opacity observations for each test shall, unless directed otherwise by applicable underlying state rule be at least 30 minutes (five 6-minute averages) unless the average opacities for the first 12 minutes of observations (two six-minute averages) are both no more than half of the most stringent requirement applying to opacity.
- d.
 - i. The Permittee shall notify the Illinois EPA at least 7 days in advance of the date and time of these tests, in order to allow the Illinois EPA to witness testing. This notification shall include the name and employer of the qualified observer(s).
 - ii. The Permittee shall promptly notify the Illinois EPA of any changes in the time or date for testing.
- e. The Permittee shall provide a copy of its observer's readings to the Illinois EPA at the time of testing, if Illinois EPA personnel are present.
- f. The Permittee shall submit a written report for this testing within 15 days of the date of testing. This report shall include:
 - i. Date and time of testing.
 - ii. Name and employer of qualified observer, with a copy of his or her current certification.
 - iii. Description of observation condition, including recent weather.
 - iv. Description of the operating conditions of the affected unit.
 - v. Opacity determinations, accompanied by raw data.
 - vi. Conclusions.
- g. The Permittee shall retain copies of opacity test reports for at least five years after the date that an opacity test is superseded by a more recent test.

3.3 General Requirements for "Logs" Or Similar Records

- a. Operating logs or other similar records required by this permit shall, at a minimum, include the following information related to the emission units and associated control system:
 - i. Information identifying periods when an emission unit or group of related emission units was not in service.
 - ii. For periods when a unit or group of related units is in service and operating normally, relevant process and control system information to generally confirm normal operation.
 - iii. For periods when a unit or group of related units is in service and is not operating normally, identification of each such period, with detailed information describing the operation of the unit(s), the potential consequences for additional emissions from the unit(s), the potential of any excess emissions from the affected unit(s), the actions taken to restore normal operation, and any actions taken to prevent similar events in the future.
 - iv. Other information as may be appropriate to show that the emission unit or group of related emission units is operated in accordance with good air pollution control practices.
- b. Inspection, maintenance and repair logs or other similar information required by this permit shall, at a minimum, include the following information related to the emission units and associated control system:
 - i. Identification of equipment, with date, time, responsible employee and type of activity.
 - ii. For inspections, a description of the inspection, findings, and any recommended actions, with reason.
 - iii. For maintenance and repair activity, a description of actions taken, reason for action, e.g., preventative measure or corrective action as a result of inspection, probable cause for requiring maintenance or repair if not routine or preventative, and the condition of equipment following completion of the activity.
 - iv. Other information as may be appropriate to show that the emission unit or group of related emission units is maintained in accordance with good air pollution control practices, including prompt repair of defects that interfere with effective control of emissions.
- c. The logs required by this permit may be kept in manual or electronic form, and may be part of a larger information

database maintained by the Permittee provided that the information required to be kept in a log is readily accessible.

3.4 Reporting of Deviations

- a. Reports of deviations shall include the following information:
 - i. Identity of the deviation, with date, time, duration and description.
 - ii. Describe the effect of the deviation on compliance, with an estimate of the excess emissions that accompanied the deviation, if any.
 - iii. Describe the probable cause of the deviation and any corrective actions or preventive measures taken.
- b. Semi-Annual compliance report shall be submitted no later than 45 days after the preceding period. This report shall also provide a listing of all deviations for which immediate or 30-day reporting was required, but need not include copies of the previously submitted information.
- c.
 - i. Unless otherwise specified in a particular condition of this permit, if deviation(s) from requirements of this permit occurs during a reporting period, compliance report shall be submitted no later than 30 days after the end of the reporting period. This report shall also provide a listing of all deviations for which immediate or 30-day reporting was required, but need not include copies of the previously submitted information.
 - ii. If there are no deviations during a reporting period, the Permittee shall still submit a compliance report, which report shall state that no deviations occurred during the reporting period.
- d.
 - i. For the purpose of determining whether a deviation must be reported prior to a periodic compliance report, a deviation shall be considered to continue even if operation of an emission unit is interrupted if the deviation is still present when operation of the unit is resumed.
 - ii. When this permit requires immediate notification, such notification shall be provided by telephone and followed by facsimile or e-mail transmittal of a narrative report.
- e. Notwithstanding the above provisions or provisions in the Unit Specific Conditions of this permit for reporting deviations, if deviation will occur from required maintenance, repair or other activity that can be scheduled in advance, the Permittee shall also notify the Illinois EPA prior to undertaking such activity, if it is feasible to do so. Such notification shall be submitted at least 5 days in advance unless the activity is

scheduled less than 5 days in advance. Such notification shall be followed by such other notification or reporting as required for the deviations.

ATTACHMENT 1

Annual Emissions of the Lime Plant (Tons/Year)

| Operations | SO ₂ | NO _x | CO | PM | PM ₁₀ ¹ | PM _{2.5} ¹ | VOM | GHG (as CO ₂ e) |
|--|-----------------|-----------------|-------|-------|-------------------------------|--------------------------------|------|-------------------------------|
| Kilns | 219 | 1,533 | 1,095 | 62.00 | 84.50 | 45.90 | 22.0 | 1,201,842 |
| Handling of Limestone and Solid Fuel | --- | --- | --- | 3.06 | 1.12 | 0.08 | --- | --- |
| Lime Processing and Handling | --- | --- | --- | 29.22 | 15.83 | 7.13 | --- | --- |
| Storage Piles and Roadways | --- | --- | --- | 12.42 | 4.56 | 0.58 | --- | --- |
| Emergency Engine Generators ² | --- | 0.3 | 0.2 | --- | --- | --- | --- | 36 |
| Total | 219 | 1,533 | 1,095 | 106.7 | 106.0 | 53.7 | 22.0 | 1,201,878 |

Notes

1. Total particulate emissions, including both filterable and condensable particulate.
2. Limits only address emissions during the operational testing of these units to verify availability in the event of a power outage. Limits do not address emissions during power outages, when the kilns would not be operating.

ATTACHMENT 2

STANDARD CONDITIONS FOR CONSTRUCTION/DEVELOPMENT PERMITS
ISSUED BY THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

The Illinois Environmental Protection Act (Illinois Revised Statutes, Chapter 111-1/2, Section 1039) authorizes the Environmental Protection Agency to impose conditions on permits which it issues.

The following conditions are applicable unless superseded by special condition(s).

1. Unless this permit has been extended or it has been voided by a newly issued permit, this permit will expire one year from the date of issuance, unless a continuous program of construction or development on this project has started by such time.
2. The construction or development covered by this permit shall be done in compliance with applicable provisions of the Illinois Environmental Protection Act and Regulations adopted by the Illinois Pollution Control Board.
3. There shall be no deviations from the approved plans and specifications unless a written request for modification, along with plans and specifications as required, shall have been submitted to the Illinois EPA and a supplemental written permit issued.
4. The Permittee shall allow any duly authorized agent of the Illinois EPA upon the presentation of credentials, at reasonable times:
 - a. To enter the Permittee's property where actual or potential effluent, emission or noise sources are located or where any activity is to be conducted pursuant to this permit,
 - b. To have access to and to copy any records required to be kept under the terms and conditions of this permit,
 - c. To inspect, including during any hours of operation of equipment constructed or operated under this permit, such equipment and any equipment required to be kept, used, operated, calibrated and maintained under this permit,
 - d. To obtain and remove samples of any discharge or emissions of pollutants, and
 - e. To enter and utilize any photographic, recording, testing, monitoring or other equipment for the purpose of preserving, testing, monitoring, or recording any activity, discharge, or emission authorized by this permit.

5. The issuance of this permit:
 - a. Shall not be considered as in any manner affecting the title of the premises upon which the permitted facilities are to be located;
 - b. Does not release the Permittee from any liability for damage to person or property caused by or resulting from the construction, maintenance, or operation of the proposed facilities;
 - c. Does not release the Permittee from compliance with other applicable statutes and regulations of the United States, of the State of Illinois, or with applicable local laws, ordinances and regulations;
 - d. Does not take into consideration or attest to the structural stability of any units or parts of the project; and
 - e. In no manner implies or suggests that the Illinois EPA (or its officers, agents or employees) assumes any liability, directly or indirectly, for any loss due to damage, installation, maintenance, or operation of the proposed equipment or facility.
- 6a. Unless a joint construction/operation permit has been issued, a permit for operation shall be obtained from the Illinois EPA before the equipment covered by this permit is placed into operation.
- b. For purposes of shakedown and testing, unless otherwise specified by a special permit condition, the equipment covered under this permit may be operated for a period not to exceed thirty (30) days.
7. The Illinois EPA may file a complaint with the Board for modification, suspension or revocation of a permit.
 - a. Upon discovery that the permit application contained misrepresentations, misinformation or false statement or that all relevant facts were not disclosed, or
 - b. Upon finding that any standard or special conditions have been violated, or
 - c. Upon any violations of the Environmental Protection Act or any regulation effective there under as a result of the construction or development authorized by this permit.

July, 1985, Revised, May, 1999